

Hong Kong Aviation Requirements

HKAR-147

**Approved Maintenance
Training/Examinations**

**Issue 2 Revision 7
31 August 2023**

**CAD 147
Civil Aviation Department
HONG KONG, CHINA**

HKAR-147

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Please note that the HKAR-147 is available at CAD website:
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Hardcopies will not be published.

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FOREWORD

- 1 The Civil Aviation Department of the Hong Kong Special Administrative Region (HKSAR) of the People's Republic of China has published comprehensive and detailed aviation requirements, referred to as the Hong Kong Aviation Requirements (HKAR) with a view to setting up standards and minimising type certification problems, to facilitate the export and import of aviation products, to make it easier for maintenance carried out in Hong Kong. In addition, maintenance personnel should be trained and qualified to an international standard to assist the aviation industry in obtaining suitable staff.
- 2 Article 12 of the Air Navigation (Hong Kong) Order 1995 as amended gives the Chief Executive of the HKSAR responsibility of approving a person to provide or conduct any course of training or instruction; and approving a person as qualified to furnish reports to him; and authorising a person to provide or conduct examinations or tests.

Note: A "person" may include a body corporate.
- 3 EASA Part 147 has been selected to provide where appropriate the content of HKAR-147, the maintenance training standard for maintenance certifying staff.
- 4 Amendments are incorporated into the text by means of a 'Revision' or a complete 'Re-issue'.
- 5 New, amended and corrected text is indicated by a marginal line.

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HONG KONG AVIATION REQUIREMENTS

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APPROVED MAINTENANCE TRAINING/EXAMINATIONS

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ISSUE 2, DATED 31 August 2008

ISSUE 2 REVISION 1, DATED 30 November 2010

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ISSUE 2 REVISION 5, DATED 8 May 2018

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PREAMBLES

The preambles are intended to be a summarised record of the main changes introduced by each amendment of HKAR-147.

Issue 1

1 January 2000

New requirement for the training / examination of maintenance certifying staff to the standard of HKAR-66 to qualify under the authority of a HKAR-145 organisation to issue HKAR 145.50 certificates of release to service.

Issue 1 Revision 1

30 June 2003

- Amended IEM 147.1 for listing of HKAR-147 approved maintenance training organisations.
- Amended HKAR 147.35(d) to include an alternative arrangement for the acceptance of knowledge examiners and practical assessors.
- Inclusion of HKAR 147.65(a)(12), HKAR 147.70(d) and AMC/IEM 147.70(d) for sub-contracting of trainings and examinations.
- Amended HKAR 147.85(b) to include the sub-category B3.
- Inclusion of IEM 147.85(f), (g), (h), (i), (j), (k) the interpretation on "training hour" referred to.
- Inclusion of HKAR 147.105(b) and AMC/IEM 147.105(b) for the sub-division of aircraft type training into airframe type training, powerplant type training or avionic type training.
- The term "Director" appeared throughout the requirements have been amended to read "Director-General".
- Appendix 1 deleted.
- Subject topics in Appendix 2 amended to align with the changes in HKAR-147 requirements.
- Other minor changes are incorporated.

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Issue 2

31 August 2008

- Changed the infrastructure of the HKAR-147 publication. There are four sections where Section 1 contains the requirements and Sections 2, 3 and 4 contain the Acceptable Means of Compliance (AMC), the Guidance Material (GM) and the Appendices respectively.
- Changed the paragraph numbering of the HKAR-147 to those of EASA Part 147.
- Deleted the definition of “Accountable Manager” and with the provisions incorporated in HKAR 147.105 and AMC 147.105.
- Extended the privilege of a HKAR-147 approved maintenance training organisation regarding conduct examination on behalf of the Director-General to cover practical assessment.
- Adjusted the approved basic training hours and conversion training hours to EASA standards.
- Added a Note in HKAR 147.105 advising that the Guidance for HKAR-147 Authorised Examiner is contained in HKAR-2.
- Added a new provision in HKAR 147.140 for approving minor amendments to the maintenance training organisation exposition through an exposition procedure.
- Added the provisions for handling audit findings in HKAR 147.160.
- Upgraded the AMC 147.30(b) on maximum number of students undergoing knowledge training to HKAR 147.100(b),
- Upgraded the AMC 147.30(d) and (e) on maximum number of students undergoing practical training to HKAR 147.100(f).
- Upgraded the AMC 147.35(e) on frequency of instructor/examiner updating training to HKAR 147.105.
- Relocated the provisions on percentage of knowledge training required in AMC 147.85(f) and (g) to Section 4 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 when can a disqualified examiner be reinstated in GM 147.135.

Issue 2 Revision 1

30 November 2010

- Added new provisions in HKAR 147.5 and HKAR 147.105 (a) for the implementation a Safety Management System.
- Amended the paragraph title of HKAR 147.130 and added a new provision in HKAR 147.130 (c) to include safety management system.
- Amended the AMC 147.105 to add a personnel requirement of a safety manager for the management of the safety management system.
- Amended the paragraph title of AMC and GM 147.130 (b) to include safety management system.

Issue 2 Revision 2

10 December 2012

- Amended address and telephone number of CAD on page ii.

Issue 2 Revision 3

30 November 2016

- Added AMC 147.200 (f) the approved basic training course to align with EASA Part 147.

Issue 2 Revision 4

15 January 2018

Corrected the typos on HKAR 147.105(a) and HKAR 147.135(b).

Issue 2 Revision 5

7 May 2018

- Specified in HKAR 147.1(b) that the basic training course shall be HKAR-147 approved.
- Added ‘if required by HKAR 147.130(c)’ to HKAR 147.5(f).
- Referenced the classes and ratings more specifically to the Appendix 2 to Chapter 27 of HKAR-2.
- Added ‘if required by HKAR 147.130(c)’ to HKAR 147.105(a).

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- Addressed the condition (i.e. expose to safety risks related to aircraft operations during the provision of services) under which a HKAR-147 approved maintenance training organisation shall establish a safety management system.
- Added ‘B2*’ to HKAR 147.200 (b).
- Specified in AMC 147.15(c) that the HKAR-145 approved maintenance organisation shall be Hong Kong-based.
- Added ‘if required by HKAR 147.130(c)’ to paragraph 1 of AMC 147.105.
- Other minor editorial changes were incorporated.

Issue 2 Revision 6

7 March 2022

- Amended HKAR 147.25 to replace Chapter 27 of HKAR-2 Administrative & Guidance Material by Section 4 Appendix 6.
- Amended Note to HKAR 147.105(f) to replace Chapter 30 of HKAR-2 Administrative & Guidance Material by Appendix 9.
- Amended HKAR 147.155 (1) to replace HKAR-2 Chapter 27 by Section 4 Appendix 4.
- Added HKAR 147.200(h) to specify reference for guidance on the associated basic training standard.
- Deleted GM 147.405 under heading of HKAR 147.405.
- Amended AMC 147.115 (c) (1)(b) to include B2*.
- Amended AMC 147.200 (g) (a) and AMC 147.200 (g) (b) to replace B2 by B2*.
- Amended AMC 147.205(a)(1) 2 to include B2* and replace HKAR-2 Administrative & Guidance Material by HKAR-66 Licensing of Maintenance Personnel.
- Amended AMC 147.300(5) to add chapter 24, 42 and 44.
- Amended AMC 147.305 to replace HKAR-2 Administrative & Guidance Material by HKAR-66.
- Amended GM 147.15(c)2a to delete HKAR-2 Administrative & Guidance Material.

- Amended GM 147.145(d)1 to delete HKAR-2 Administrative & Guidance Material.
- Deleted GM 147.405.
- Amended Section 4 Appendix 1 to replace B2 by B2*.
- Amended Section 4 Appendix 3 to add description of basic training/examination certificate and amend the description of type training certificate.
- Added Section 4 Appendix 4, initial issue / variation / renewal of HKAR-147 Approval.
- Added Section 4 Appendix 5, number of HKAR-66 examination questions to be submitted for CAD audit.
- Added Section 4 Appendix 6, HKAR-147 training course standards.
- Added Section 4 Appendix 7, minimum training hours.
- Added Section 4 Appendix 8, HKAR-147 authorised examiner.

Issue 2 Revision 7

31 August 2023

- Amended HKAR 147.20 to reference AMC 147.20.
- Amended HKAR 147.105(f) and note to editorially change the reference of Knowledge Examiner and Practical Assessor.
- Amended HKAR 147.145 to add (a)(3), (a)(4) and (a)(5) regarding the arrangement of basic knowledge exam and aircraft type exam.
- Amended HKAR 147.150(a) to update the notification procedures.
- Amended HKAR 147.155 to update the reference of finding handling.
- Amended HKAR 147.200(b) to remove the basic categories.
- Added AMC 147.20(a) to refer to HKAR-147 Section 4 Appendix 4.
- Amended AMC 147.105(a), (b) and (g) to remove AMC 147.105(g) related to CAD Form Four for Knowledge Examiner and Practical Assessor.
- Amended AMC 147.115(c)(1)(b) to remove B2.

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- Added AMC 147.145(a)(5) to elaborate the requirements of mutual recognition of knowledge examination results obtained from different HKAR-147 maintenance training organisations.
- Deleted AMC 147.200 as it is duplicate with AMC 147.200(f).
- Deleted AMC 147.205(a)(1) as it is duplicate with HKAR 147.205.
- Amended AMC 147.300 to renumber the paragraphs.
- Deleted AMC 147.305 as it is duplicate with HKAR 147.305.
- Amended HKAR-147 Section 4 Appendix 3 to revise Certificate of Recognition for basic course and / or exam and aircraft type course and / or exam.
- Amended HKAR-147 Section 4 Appendix 4 to update the requirements for issue and renewal of a HKAR-147 approval and remove the HKAR-147 findings and observations.
- Amended the title of HKAR-147 Section 4 Appendix 8 from HKAR-147 Authorised Examiner to Guidance for Knowledge Examiner and Practical Assessor.
- Amended HKAR-147 Section 4 Appendix 8 to update the requirement of Knowledge Examiner bearing the role of Instructor when conducting a knowledge examination.

SECTION 1 – REQUIREMENTS

1 GENERAL

1.1 This Section 1 contains the Requirements for Maintenance Training.

2 PRESENTATION

2.1 The requirements of HKAR-147 are presented in full page width on loose pages, each page being identified by the date of issue or issue/revision number under which it is reissued or amended.

2.2 Sub-headings are in bold typeface.

2.3 Explanatory Notes not forming part of the requirements appear in smaller typeface.

2.4 New, amended and corrected text is indicated by a marginal line.

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SUBPART A GENERAL**HKAR 147.1****General**

- (a) HKAR-147 prescribes the requirements to be met by organisations seeking approval to conduct approved training/examination of certifying staff as specified in HKAR-66.
- (b) To qualify for the maximum reduction in total maintenance experience specified in HKAR-66, the applicant for an aircraft maintenance licence shall complete a HKAR-147 approved basic training course.
- (c) To qualify for the paragraph (b) approved basic training, the organisation shall be approved by the Director-General in accordance with HKAR-147 Subparts B and C.
- (d) An organisation shall be approved by the Director-General in accordance with HKAR-147 Subparts B and D to carry out the aircraft type training specified in HKAR-66.

HKAR 147.5**Effectivity**

- (a) HKAR-147 was first issued on 1 January 2000 and became effective on 1 January 2001.
- (b) After 1 January 2001, any new applicant required to be approved shall be in accordance with HKAR 147.1(c) and/or (d).
- (c) After 1 January 2003 any organisation required to be approved in accordance with HKAR 147.1(c) and/or (d) shall be in compliance with HKAR-147.
- (d) A HKAR-147 approval may be issued by the Director-General at any time after the paragraph (a) effective date.
- (e) Notwithstanding paragraph (d), training organisations may continue to be qualified in accordance with Hong Kong Aviation Requirements in force prior to the paragraph (a) effective date until 1 January 2003.

- (f) Organisations shall implement a Safety Management System after 17 November 2011 if required by HKAR 147.130(c).

HKAR 147.10

Definitions

(See GM 147.10)

For the purpose of HKAR-147 the following definitions shall apply:

'Approved basic training course' means a defined course of maintenance training designed to give a level of knowledge and some experience to a student such that it justifies the reduction in maintenance experience permitted by HKAR-66.

'CAD' means Civil Aviation Department of the Hong Kong Special Administrative Region of the People's Republic of China.

'Director-General' means the Director-General of Civil Aviation who is authorised for the purpose under the Air Navigation (Hong Kong) Order 1995, as amended by the Chief Executive of the Hong Kong Special Administrative Region of the People's Republic of China and includes any person who is delegated for that purpose.

'Terms of Reference' means the scope of work that a person is responsible for and authorised to carry out on behalf of the HKAR-147 approved maintenance training organisation.

'Organisation' means an organisation registered as a legal entity. Such an organisation may conduct business from more than one address and may hold more than one Hong Kong Aviation Requirements (HKAR) approval.

HKAR 147.15

Applicability

(See AMC 147.15 and GM 147.15)

- (a) HKAR-147 Subpart B prescribes the requirements for issuing approvals to maintenance training organisations to conduct the approved training courses and/or examinations required by HKAR-66 and for such organisations to issue certificates to students upon successful completion of such courses.

- (b) Maintenance training organisations located in Hong Kong may be granted approval when in compliance with HKAR-147 Subparts B and C or Subparts B and D or a combination of both.
- (c) Maintenance training organisations located outside Hong Kong may be granted approval if the Director-General is satisfied that there is a need for such approval. Alternatively, the Director-General may accept an organisation located outside Hong Kong on the basis of an approval issued by the National Aviation Authority subject to the organisation being in compliance with any additional conditions that ensure equivalence to HKAR-147.

HKAR 147.20

Application and issue

(See AMC 147.20)

- (a) An application for the issue, variation or renewal of a HKAR-147 maintenance training organisation approval shall be made on a CAD Form Twelve and submitted with a copy of the maintenance training organisation exposition prescribed by the Director-General or amendment thereto.
- (b) An applicant that has demonstrated to the Director-General that the organisation meets the relevant HKAR-147 requirements and has paid the fees prescribed by the Director-General is entitled to a HKAR-147 maintenance training organisation approval.
- (c) The approval when granted will apply to the whole maintenance training organisation headed by the accountable manager.

HKAR 147.25

Extent of approval

The grant of approval is indicated by the issue of a HKAR-147 approval certificate to the maintenance training organisation. The HKAR-147 approval certificate will specify the extent of approval. The classes and ratings possible under HKAR-147 are contained in Section 4 Appendix 6.

SUBPART B ORGANISATIONAL REQUIREMENTS**HKAR 147.100****Facility requirements**

(See AMC 147.100 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 appropriate 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 or her position during examinations.
- (c) The paragraph (b) accommodation environment shall be maintained 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 HKAR-147 approved maintenance training 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 Director-General shall 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 the aircraft type as specified in HKAR 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 HKAR 147.125. The storage facilities and office accommodation may be combined, subject to adequate security.
- (i) A library shall be provided containing all technical material appropriate to the scope and level of training undertaken.

HKAR 147.105**Personnel requirements**

(See AMC 147.105 and GM 147.105)

- (a) The HKAR-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 standards required by HKAR-147. The accountable manager shall also ensure an implementation of a Safety Management System if required by HKAR 147.130(c).
- (b) A person or group of persons, whose responsibilities include ensuring that the maintenance training organisation is in compliance with HKAR-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 HKAR-147 approved maintenance training organisation shall employ/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 paragraph (f).
- (f) The experience and qualifications of instructors, knowledge examiners and practical assessors shall be established in accordance with criteria published or in accordance with a procedure and to a standard agreed by the Director-General.

Note: HKAR-147 Section 4 Appendix 8 provides guidance of the qualification of knowledge examiners and practical assessors.

- (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.

HKAR 147.110

Records of instructors, examiners and assessors

(See AMC 147.110 and GM 147.110)

- (a) The HKAR-147 approved maintenance training organisation shall maintain a record of all instructors, knowledge examiners and practical assessors. These records shall 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 HKAR 147.105(g), must be clearly indicated.

HKAR 147.115**Instructional equipment**

(See AMC 147.115 and GM 147.115)

- (a) Each classroom shall have appropriate 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 in their 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 HKAR 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 HKAR 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 HKAR 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.

HKAR 147.120**Maintenance training material**

(See AMC 147.120)

- (a) Maintenance training course material shall be provided to the students and cover as applicable:
- (1) the basic knowledge syllabus specified in HKAR-66 for the relevant aircraft maintenance licence category or sub-category and,
 - (2) the type course content required by HKAR-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 HKAR 147.100(i).

HKAR 147.125**Records**

The HKAR-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.

HKAR 147.130**Training procedures, safety management and quality systems**

(See AMC 147.130 and GM 147.130)

- (a) The HKAR-147 approved maintenance training organisation shall establish procedures acceptable to the Director-General to ensure proper training standards and compliance with all relevant requirements in HKAR-147.
- (b) The HKAR-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 HKAR 147.105(a) to ensure, as necessary, corrective action(s) is/are properly implemented in a timely manner.
- (c) The HKAR-147 approved maintenance training organisation that is exposed to safety risks related to aircraft operations during the provision of their services shall establish a safety management system meeting the relevant CAD 712 requirements.

HKAR 147.135**Examinations**

(See AMC 147.135 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 Director-General 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 Director-General shall be informed of any such occurrence within one calendar month.

HKAR 147.140**Maintenance training organisation exposition**

(See AMC 147.140)

- (a) The HKAR-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 define the maintenance training organisation's compliance with HKAR-147 and shall be complied with at all times.
 - (2) the title(s) and name(s) of the person(s) nominated in accordance with HKAR 147.105(b).
 - (3) the duties and responsibilities of the person(s) specified in subparagraph (a)(2), including matters on which they may deal directly with the Director-General 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 HKAR-147 approval certificate, and if appropriate any other location, as required by HKAR 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 HKAR 147.130(a).
 - (10) the maintenance training organisation control procedure, as required by HKAR 147.145(c), when authorised to conduct training, examination and assessments in locations different from those specified in HKAR 147.145(b).
 - (11) a list of the locations pursuant to HKAR 147.145(b).
 - (12) a list of organisations, if appropriate, as specified in HKAR 147.145(d).
- (b) The maintenance training organisation exposition and any subsequent amendments shall be approved by the Director-General.
- (c) Notwithstanding paragraph (b), minor amendments to the maintenance training organisation exposition may be approved through an exposition procedure (hereinafter called indirect approval).

HKAR 147.145**Privileges of the HKAR-147 approved maintenance training organisation**

(See AMC 147.145 and GM 147.145)

- (a) The HKAR-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 HKAR-66 syllabus, or part thereof.
 - (2) aircraft type/task training courses in accordance with HKAR-66.
 - (3) the examination of students who attended the basic or aircraft type training course at the maintenance training organisation.
 - (4) the examination of students who did not attend the aircraft type training course at the maintenance training organisation.
 - (5) the examination of students who did not attend the basic training course at the maintenance training organisation.
 - (6) the issue of certificates in accordance with Section 4 Appendix 3 following successful completion of the approved basic or aircraft type training courses and examinations specified in subparagraphs (a)(1), (a)(2), (a)(3), (a)(4) and (a)(5) as applicable.
 - (7) the examinations and practical assessments on behalf of the Director-General including, when requested by the Director-General, the examination and practical assessment of students who did not attend the basic or aircraft type training course at the HKAR-147 approved maintenance training organisation.
- (b) Training, knowledge examinations and practical assessments may only be carried out at the locations identified in the HKAR-147 approval certificate and/or at any location specified in the maintenance training organisation exposition.
- (c) By derogation to paragraph (b), the HKAR-147 approved maintenance training organisation may only conduct training, knowledge examinations and

actical 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 HKAR-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 HKAR-147 approved maintenance training organisation quality system.
 - (2) The subcontracting of basic theoretical training and examination is limited to HKAR-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.

HKAR 147.150

Changes to the HKAR-147 approved maintenance training organisation

- (a) The HKAR-147 approved maintenance training organisation shall notify the Director-General not less than 28 days' notification of any intended changes to the organisation that affect the approval before any such change takes place, in order to enable the Director-General to determine continued compliance with HKAR-147 and to amend if necessary the HKAR-147 approval certificate.
- (b) The Director-General may prescribe the conditions under which the HKAR-147 approved maintenance training organisation may operate during such changes unless the Director-General determines that the HKAR-147 approval must be suspended.
- (c) Failure to inform the Director-General of such changes may result in suspension or revocation of the HKAR-147 approval certificate backdated to the actual date of the changes.

HKAR 147.155**Continued validity**

Unless the HKAR-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, it shall remain valid subject to:

- (1) the HKAR-147 approved maintenance training organisation remaining in compliance with HKAR-147, in accordance with the provisions related to the handling of findings as specified in Hong Kong Airworthiness Notice No. 28 Appendix 1; and
- (2) the Director-General being granted access to the HKAR-147 approved maintenance training organisation to determine continued compliance with HKAR-147; and
- (3) the payment of any charges prescribed by the Director-General has been settled.

HKAR 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 Director-General 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 HKAR-147 approval shall define a corrective action plan and demonstrate corrective action to the

satisfaction of the Director-General within a period agreed by the Director-General.

SUBPART C THE APPROVED BASIC TRAINING COURSE**HKAR 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 a practical assessment.
- (b) The knowledge training element shall cover the subject matter for a category or sub-category aircraft maintenance licence as specified in HKAR-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 HKAR-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 Section 4 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.
- (h) The guidance on the associated basic training standards are contained in Section 4 Appendix 7

HKAR 147.205

Basic knowledge examinations

(See AMC 147.205 and AMC 147.205(a)(1))

- (a) Basic knowledge examinations shall:
 - (1) be in accordance with the standard defined in HKAR-66.
 - (2) be conducted without the use of training notes.
 - (3) cover a representative cross section of subjects from the particular module of training completed in accordance with HKAR-66.
- (b) All training subject module or sub-module basic knowledge examinations for completing a HKAR-66 category or sub-category must be passed within five years of passing the first training subject module or sub-module basic knowledge examination for the particular HKAR-66 category or sub-category. Any failed training module basic knowledge examination may not be retaken for at least one month after the date such examination was failed.

HKAR 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 to HKAR 147.200(e).

SUBPART D AIRCRAFT TYPE / TASK TRAINING**HKAR 147.300****Aircraft type / task training**

(See AMC 147.300)

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

HKAR 147.305**Aircraft type examinations and task assessments**

(See AMC 147.305)

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

SUBPART E EQUIVALENT SAFETY AND REVOCATION**HKAR 147.400****Equivalent safety cases**

(See AMC 147.400)

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

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

- (a) The Director-General may, on reasonable grounds after due inquiry, revoke, suspend, limit or refuse to renew the HKAR-147 approval if he is not satisfied that the holder of the approval continues to meet the requirements of HKAR-147 subject to the conditions of paragraph (a)(1).
 - (1) Before revoking, suspending, limiting or refusing to renew a HKAR-147 approval, the Director-General will first give at least 28 days notice to the HKAR-147 approval holder in writing of his intention so to do and of the reasons for his proposal, and will offer the holder an opportunity to make representations and the Director-General will consider those representations.
- (b) Except as specified otherwise in paragraph (b)(1), any HKAR 147.15(c) maintenance training organisation which was accepted principally on the basis

of an approval issued by another authority, may be subjected to the limitations and conditions of paragraph (a) by the Director-General.

- (1) Surrender, suspension, revocation or refusal to renew the approval issued by the authority other than the Director-General invalidates the HKAR-147 acceptance from the date of such approval surrender, suspension, revocation or expiry. The Director-General will inform the HKAR-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 (AMC)**1 GENERAL**

- 1.1 This Section contains Acceptable Means of Compliance that has been agreed for inclusion in HKAR-147. Acceptable Means of Compliance (AMC) illustrate a means, or several alternative means, but not necessarily the only possible means by which a requirement can be met.
- 1.2 Where a particular HKAR paragraph does not have an Acceptable Means of Compliance or any Guidance Material, it is considered that no supplementary material is required.

2 PRESENTATION

- 2.1 The Acceptable Means of Compliance is presented in full page width on loose pages, each page being identified by the date of issue or the issue/revision number under which it is reissued or amended.
- 2.2 A numbering system has been used in which the Acceptable Means of Compliance uses the same number as the HKAR paragraph to which it refers. The number is introduced by the letters AMC to distinguish the material from the HKAR itself.
- 2.3 Explanatory Notes not forming part of the AMC text appear in a smaller typeface.
- 2.4 New, amended or corrected text is indicated by a marginal line.

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AMC 147.15(c)**Applicability**

See HKAR 147.15(c)

For the Director-General to be satisfied that there is a need, the potential applicant is required to provide evidence from a Hong Kong based HKAR-145 approved maintenance organisation who would like to use the potential applicant's facilities for maintenance training. The evidence should be in the form of a letter giving the reasons for the need. The Director-General reserves the right to be satisfied that the need is genuine before accepting such application.

AMC 147.20(a)**Application and issue**

See HKAR 147.20(a)

Refer to HKAR-147 Section 4 Appendix 4.

AMC 147.100(i)**Facility requirements**

See HKAR 147.100(i)

- 1 For approved basic maintenance training courses this means holding and ensuring reasonable access to copies of all HKAR and Hong Kong 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 HKAR and Hong Kong aviation legislation, 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.

AMC 147.105**Personnel requirements**

See HKAR 147.105

- 1 The larger HKAR-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 of 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 safety manager and a quality manager with the responsibility of managing the safety management system as specified in Chapter 5 of CAD 712, if required by HKAR 147.130(c) and the quality system as specified in paragraph HKAR 147.130(b) respectively. The organisation should also appoint an examination manager with the responsibility for managing the relevant HKAR-147 Subpart C or Subpart D examination system. Such person(s) may also be an instructor and/or examiner.

- 2 The smaller HKAR-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 Director-General verifying and being satisfied that all functions can be properly carried out in combination.
- 3 When the HKAR-147 approved maintenance training organisation is also approved against other HKAR which contain some similar functions then such functions may be combined.

AMC 147.105(a) and (b)**Personnel requirements**

See HKAR 147.105(a) and (b)

A CAD Form Four should be completed for each person nominated to hold a position required by HKAR 147.105(a) and (b).

AMC 147.105(h)**Personnel requirements**

See HKAR 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.

AMC 147.110**Records of instructors, examiners and assessors**

See HKAR 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 Director-General is an authorised person when investigating the records system for initial and continued approval or when the Director-General has cause to doubt the competence of a particular person.**

AMC 147.115(c)**Instructional equipment**

See HKAR 147.115(c)

- 1 An appropriate selection of aircraft, engines, aircraft parts and avionic equipment means appropriate in relation to the particular subject module or sub-module of HKAR-66 being instructed. For examples:
 - 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. HKAR-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 to mean, in conjunction with the facilities requirement of HKAR 147.100(d), that there may be an agreement with a HKAR-145 approved maintenance organisation to access such parts, etc.

AMC 147.120(a)

Maintenance training material

See HKAR 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, safety management and quality systems

See HKAR 147.130(b)

- 1 The independent audit procedure should ensure that all aspects of HKAR-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 HKAR-147 approved maintenance training organisation the independent audit function may be contracted to another HKAR-147 approved maintenance training organisation or a competent person acceptable to the Director-General. 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 HKAR-147 approved maintenance training organisation is also

approved to another HKAR 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 HKAR-147 approved maintenance training organisation should audit a prospective sub-contractor to determine whether the services of the sub-contractor meet the intent of HKAR-147.
 - b. a renewal audit of the subcontractor should be performed at least once every 12 months to ensure continuous compliance with the HKAR-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.

AMC 147.135

Examinations

See HKAR 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.

AMC 147.140

Maintenance training organisation exposition

See HKAR 147.140

- 1 A recommended format of the maintenance training organisation exposition is included in Section 4 Appendix 2.

- 2 When the HKAR-147 approved maintenance training organisation is approved in accordance with any other HKAR which also requires an exposition, the exposition required by the other HKAR 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 HKAR 147.140 and a cross reference index is included based upon Section 4 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 Section 4 Appendix 2 item 2.18 plus a list of sub-contractors as required by HKAR 147.140(a)12 and detailed in Section 4 Appendix 2 item 1.7.
- 4 The Director-General may approve a delegated exposition approval system for all changes other than those affecting the HKAR-147 approval.

AMC 147.145(a)(5)**Privileges of the HKAR-147 approved maintenance training organisation**

See HKAR 147.145(a)(5)

- 1 Knowledge examination results obtained from different HKAR-147 maintenance training organisations are mutually recognized, provided that a student must complete all the required training (knowledge & practical) and practical assessments and attempted all the knowledge examinations available at the primary maintenance training organisation during the period of their training. The primary maintenance training organisation, which provides the approved basic training courses to the students, will issue the Certificate of Recognition according to the procedures stipulated in MTOE. If part of the knowledge examinations were conducted at different maintenance training organisations, the results would be sent to the primary AMTO directly for their processing.

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

See HKAR 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

HKAR-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 HKAR-147 approved maintenance training organisation's students should meet HKAR-147 requirements for the duration of that training or examination and it remains the HKAR-147 organisation's responsibility to ensure such requirements are satisfied.

- 2 The HKAR-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 HKAR-147 standards. Particular attention should be given to ensuring that the training that is delivered also meets the requirements of HKAR-66 and the aircraft technologies as appropriate.
- 3 The contract between the HKAR-147 approved maintenance training organisation and the sub-contractor should contain:
 - a provision for the Director-General to have right of access to the sub-contractor.
 - a provision for the sub-contractor to inform the HKAR-147 approved maintenance training organisation of any change that may affect its HKAR-147 approval, before any such change takes place.

AMC 147.200(b)**The approved basic training course**

See HKAR 147.200(b)

Each HKAR-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 subparagraphs HKAR 147.200 (f) and (g) being satisfied.

AMC 147.200(d)**The approved basic training course**

See HKAR 147.200(d)

- 1 Where the HKAR-147 approved maintenance training organisation contracts the practical training element either totally or in part to another organisation in accordance with HKAR 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(f)**The Approved basic training course**

See HKAR 147.200(f)

- 1 In order to follow pedagogical and human factors principles, the maximum number of training hours per day for the theoretical training should not be more than 6 hours. A training hour means 60 minutes of tuition excluding any breaks, examination, revision, preparation and aircraft visit. In exceptional cases, the Director-General may allow deviation from this standard when it is properly justified that the proposed number of hours follows pedagogical and human factors principles. These principles are especially important in those cases where:
 - Theoretical and practical training are performed at the same time;
 - Training and normal maintenance duty/apprenticeship are performed at the same time.
- 2 The minimum participation time for the trainee to meet the objectives of the course should not be less than 90 % of the tuition hours. Additional training may be provided by the training organisation in order to meet the minimum participation time. If the minimum participation defined for the course is not met, a certificate of recognition should not be issued.

AMC 147.200(g)**The approved basic training course**

See HKAR 147.200(g)

Typical conversion durations are given below:

- (a) The approved basic training course to qualify for conversion from holding a HKAR-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 HKAR-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 HKAR-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 HKAR-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 HKAR-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 HKAR 147.205

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

AMC 147.210(a)**Basic practical assessments**

See HKAR 147.210(a)

Where the HKAR-147 approved maintenance training organisation contracts the practical training element either totally or in part to another organisation in accordance with HKAR 147.100(d) and chooses to nominate practical assessors

from the other organisation, the HKAR-147 approved maintenance training organisation should ensure that the basic practical assessments are carried out.

AMC 147.210(b)**Basic practical assessments**

See HKAR 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 HKAR 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 HKAR 147.300

Aircraft type training may be sub-divided into airframe and/or powerplant, or avionics/electrical systems type training courses. A HKAR-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 means type training including all relevant aircraft structure and systems excluding the powerplant.
- 2 Powerplant type training 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.

- 4 Avionics/electrical systems type training means type training on avionics and electrical systems covered by but not necessarily limited to ATA 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 HKAR 147.400

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

AMC 147.400(b)

Equivalent safety cases

See HKAR 147.400(b)

Education institutions may be exempt from:

- 1 the need to be an organisation as specified in HKAR 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 HKAR-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 HKAR-147 approved maintenance training organisation at the frequency required by HKAR-147.

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SECTION 3 – Guidance Material (GM)**1 GENERAL**

- 1.1 This Section contains Guidance Material that has been agreed for inclusion in HKAR-147.
- 1.2 Where a particular HKAR paragraph does not have an Acceptable Means of Compliance or any Guidance Material, it is considered that no supplementary material is required.

2 PRESENTATION

- 2.1 The Guidance Material is presented in full page width on loose pages, each page being identified by the date of issue or the issue/revision number under which it is reissued or amended.
- 2.2 A numbering system has been used in which the Guidance Material uses the same number as the HKAR paragraph to which it refers. The number is introduced by the letters GM to distinguish the material from the HKAR itself.
- 2.3 Guidance Material (GM) helps to illustrate the meaning of a requirement.
- 2.4 Explanatory Notes not forming part of the GM text appear in a smaller typeface.
- 2.5 New, amended or corrected text is indicated by a marginal line.

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GM 147.10**Definitions**

See HKAR 147.10

With regard to the 'organisation' definition, any organisation registered outside Hong Kong as a legal entity with training facilities inside Hong Kong may need to show that it can legally conduct business in Hong Kong.

GM 147.15(b)**Applicability**

See HKAR 147.15(b)

- 1 For an organisation to be approved in accordance with HKAR 147.15(b) as an organisation located in Hong Kong means that the HKAR 147.105(b) management should be located in Hong Kong. It also follows that when the HKAR 147.105(b) management is located outside Hong Kong HKAR 147.15(c) applies. However it should be noted that such an organisation may use a 'nationally based' management structure to satisfy HKAR 147.105(b) rather than the 'internationally based' management structure of such an organisation in which case HKAR 147.15(b) would apply.
- 2 Where the organisation uses facilities both inside and outside Hong Kong under the same HKAR-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 Director-General being satisfied that they form an integral part of the HKAR-147 approved maintenance training organisation.

GM 147.15(c)**Applicability**

See HKAR 147.15(c)

- 1 The principal reason for the Director-General accepting an organisation on the basis of an approval granted by another civil aviation authority is to ensure the most cost effective use of his staff resources. It therefore follows that the Director-General 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 Hong Kong.

- 2 The Director-General's policy in respect of accepting an organisation on the basis of an approval granted by the other authority is to ensure equivalence to HKAR-147.

The Director-General establishes equivalence to HKAR-147 by:

- a. comparing the relevant maintenance training regulations and working procedures of the other authority with HKAR-147 to determine differences and establish additional conditions relative to the differences.
 - b. being satisfied that the other authority will cooperate with the Director-General by carrying out and reporting on routine audits and specific investigations of the organisations and training standards.
 - c. being satisfied that the HKAR-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 HKAR-147 acceptance.
 - d. publishing the additional conditions for organisations in each country or place as AMC in the form of Appendices to HKAR-147 Section 2 or equivalent means.
- 3 Notwithstanding sub-paragraphs 1 and 2 when such a training organisation has a facility located in Hong Kong then approval in accordance with HKAR 147.15(b) will be required.

GM 147.100(i)

Facility requirements

See HKAR 147.100(i)

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

GM 147.105(c)**Personnel requirements**

See HKAR 147.105(c)

The HKAR-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 HKAR 147.105(f)

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

GM 147.105(g)**Personnel requirements**

See HKAR 147.105(g)

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

GM 147.105(h)**Personnel requirements**

See HKAR 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.

GM 147.110**Records of Instructors, examiners and assessors**

See HKAR 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 HKAR 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.

GM 147.130(b)**Training procedures, safety management and quality systems**

See HKAR 147.130(b)

- 1 The primary objective of the quality system is to enable the HKAR-147 approved maintenance training organisation to satisfy itself that it can deliver properly trained students and that the organisation remains in compliance with HKAR-147.
- 2 The independent audit is a process of routine sample checks of all aspects of the HKAR-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.

GM 147.135(c)**Examinations**

See HKAR 147.135(c)

The Director-General will determine when or if the disqualified examiner may be reinstated.

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

See HKAR 147. 145(d)

- 1 The pre audit procedure should focus on establishing compliance with the training and examination standards set out in HKAR-147 and HKAR-66.
- 2 The fundamental reason for allowing a HKAR-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 HKAR-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 HKAR 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 HKAR 147.200. The intent of the "limited subcontracting" option as specified in HKAR 147.145 is to grant HKAR-147 approvals only to those organisations having themselves at least the capacity to teach on aircraft maintenance specific matters.

APPENDIX 1

Basic Training Course Duration

Minimum duration of complete basic courses

Basic Course	Duration (hours)	Knowledge 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
B1 and B2* combined	3000	50 to 60

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APPENDIX 2**Maintenance Training Organisation Exposition (MTOE)**

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

Parts 2, 3 and 4 material may be produced as separate detailed manuals subject to the main exposition containing the Parts 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 paragraph 1.11.

Where an organisation is approved in accordance with any other Hong Kong Aviation Requirements 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 HKAR 147.145(d)
- 1.8 General description of facilities at paragraph 1.6 addresses
- 1.9 Specific list of courses approved by the Director-General
- 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 paragraph 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 paragraph 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

Example of Training Certificate

Basic Training/Examination

The basic training certificate template shall be used for recognition of completion of either the basic training or the basic examination, or both the basic training and basic training examinations.

The training certificate shall clearly identify each individual module examination by date passed.

CERTIFICATE OF RECOGNITION

***HKAR-147 APPROVED BASIC TRAINING COURSE
OR BASIC EXAMINATION***

This Certificate of recognition is issued to:

NAME

[DATE and PLACE OF BIRTH]

By (may be pre-printed)
**an organisation approved to the requirements of HKAR-147 by the Director-
General of Civil Aviation 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 HKAR-66 MODULES / DATE OF EXAMINATION PASSED

Signed: **Certificate No:**

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

*** Delete as appropriate*

Type Training Certificate

The type training certificate as detailed below may be used for recognition of completion of either the theoretical element or the practical elements, or both the theoretical and practical elements of the type rating training course.

The training certificate shall clearly identify if the course is a complete course or a partial course (such as an airframe or powerplant or avionics/electrical course) or a difference course based upon the applicant previous experience, for instance A340 (CFM) course for A320 technicians. If the course is not a complete one, the certificate shall identify whether the interface areas have been covered or not.

CERTIFICATE OF RECOGNITION

***HKAR-147 APPROVED AIRCRAFT TYPE MAINTENANCE
TRAINING COURSE OR AIRCRAFT TYPE EXAMINATION***

This Certificate of recognition covers the theoretical/practical elements of the type training course (delete as appropriate) and is issued to:

NAME

[DATE and PLACE OF BIRTH]

By (may be pre-printed)
an organisation approved to the requirements of HKAR-147 by the Director-General of Civil Aviation 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 COURSE (**)
START and END DATES
SPECIFY THEORETICAL ELEMENTS AND/OR PRACTICAL ELEMENTS (**)
Or
AIRCRAFT TYPE EXAMINATION (**)
END DATE

Signed: **Certificate No:**

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

*** Delete as appropriate*

APPENDIX 4

Initial issue / Variation / Renewal of HKAR-147 Approval**1 Issue of a HKAR-147 approval**

- 1.1 The applicant organisation (hereinafter referred to as "organisation") must apply for a HKAR-147 approval on a CAD Form Twelve.
- 1.2 A meeting will be arranged between the organisation and the Airworthiness Office of Civil Aviation Department to determine if the organisation's training activities justify the investigation for issue of HKAR-147 approval and to ensure that the organisation understands the application procedures.
- 1.3 The latest amendment of HKAR-147 requirements will be used as the basis for the investigation and issue of approval.
- 1.4 The Director-General will conduct audit(s) at the organisation's training facilities and examine the proposed maintenance training organisation exposition (hereinafter referred to as "MTOE").
- 1.5 Audit scopes may include demonstration of compliance with HKAR-147 requirements, interview with the senior personnel and sit-in of any relevant training course(s).
- 1.6 The Director-General may not necessarily sample all basic and type training courses that have to be approved, but will sample at least one basic and one type training course, as applicable, to establish that training is conducted in an acceptable manner under the approval. Where no training course is being conducted during the audit, arrangements will be made to return at a later date to sample the conduct of a training course.
- 1.7 Where it is intended that the organisation may conduct training and examinations away from the organisation address in accordance with HKAR 147.145(c), then a sample audit may be carried out to ensure that procedures are followed. For practical reasons such sample audits will need to be carried out when training is being conducted away from

the organisation address.

- 1.8 The examination standards will be audited to ensure compliance with HKAR-66.

Where the organisation intends to conduct basic training and examination, a sample of HKAR-66 examination questions in English must be submitted in accordance with Section 4 Appendix 5 to HKAR-147. The purpose of this submission is that the Director-General can check that both Section 4 Appendix I and Appendix II to HKAR-66 are complied with so that he can be satisfied that the HKAR-66 examination standard is met. Where the sample of questions does not comply with the above standards, amended questions must be submitted. The Director-General reserves the right to use the submitted questions for the purpose of the HKAR-66 examination database.

- 1.9 The procedures for the control of examinations will be reviewed to ensure that candidates are not aware of the examination questions beforehand and that the examination is conducted in an acceptable manner. The Director-General may not necessarily sample all examinations associated with a training course, but it will be necessary to sample at least one basic and one type training course examination, as applicable, to a depth necessary to establish that examinations are conducted in an acceptable manner. The audit may include sampling of examination preparation, candidate seating, invigilation and collection of examination paper as applicable. Where no examination is being conducted during the audit, arrangements will be made to return at a later date to sample the conduct of an examination.
- 1.10 The accountable manager and each person nominated to hold a position required by HKAR 147.105(a) and (b) should be identified and their credentials furnished to the Director-General on CAD Form Four (DCA 192) in order that they may be seen to be appropriate in terms of relevant knowledge and satisfactory experience related to the nature of the activities as performed by the organisation.

- 1.11 The applicant has to demonstrate that the procedures specified in the MTOE are in compliance with the HKAR-147 requirements and the same procedures are used within the organisation.
- 1.12 The Director-General should always be accompanied throughout the audit by a senior member of the organisation. Normally this should be the proposed quality manager. The reason for being accompanied is to ensure that the organisation is fully aware of any findings during the audit. In any case, the proposed quality manager/senior member of the organisation will be debriefed at the end of the audit on the findings and as well the observations made during the audit.
- 1.13 All findings identified during an audit will be confirmed in writing to the organisation within two weeks of the audit without specifying the level of each finding.
- 1.14 All confirmed findings must be rectified by the organisation to the satisfaction of the Director-General before a HKAR-147 approval can be issued.
- 1.15 When satisfied with the above, the Director-General will issue an approval certificate (CAD Form Eleven) to the organisation. The approval certificate will specify the extent of approval.

2 **Variation of a HKAR-147 approval**

All variation applications must be submitted to the Director-General well before any significant changes to the HKAR-147 approval. The following paragraphs address different scenarios involving variation of a HKAR-147 approval.

- 2.1 If only the name of the organisation is to be changed, the organisation has to submit a variation application with CAD Form Twelve, the MTOE with the new name and a copy of the business registration. On receipt of the application, the Director-General will reissue the CAD Form Eleven valid only up to the current expiry date. The Director-General will not normally audit the organisation unless there is evidence that other aspects of the organisation have changed.

- 2.2 A change of accountable manager requires the organisation to submit a variation application to the Director-General with a CAD Form Four and an amended MTOE with the Statement of Commitment to comply with HKAR-147 requirements signed by the new accountable manager. The Director-General will indicate acceptance in writing to the organisation with the CAD Form Four endorsed and an approval letter for the MTOE amendment.
- 2.3 A change of any of the senior personnel specified in HKAR 147.105(b) requires the organisation to submit a CAD Form Four in respect of the particular person to the Director-General. If satisfied that the qualifications and experience meet the standard required by HKAR-147 requirements, the Director-General will indicate acceptance in writing to the organisation.
- 2.4 Any change of the approved location(s) of the organisation requires a new application on CAD Form Twelve to the Director-General together with the submission of an amended MTOE. The Director-General will follow the procedures of paragraph 1 in so far as the change affects such procedure, but at a minimum follows the audit procedures and the MTOE amendment procedures before issuing a new Approval Certificate with the current expiry date.
- 2.5 Any additional basic or aircraft type training courses requires the organisation to make a new application on CAD Form Twelve to the Director-General together with the submission of an amended MTOE. For basic training extensions, an additional sample of new HKAR-66 examination questions relevant to the modules associated with the extension being sought will be required to be submitted in accordance with Section 4 Appendix 5. The Director-General will follow the procedure of paragraph 1 as required to confirm that the HKAR-147 approved maintenance training organisation is in compliance with the relevant requirements.
- 2.6 The re-organisation of a HKAR-147 approved maintenance training organisation will require the re-audit of those elements that have changed.

3 Renewal of a HKAR-147 approval

- 3.1 Renewal of the HKAR-147 approval should take place every two years. The HKAR-147 approved maintenance training organisation should apply on CAD Form Twelve, five months prior to the expiry date.
- 3.2 The Director-General will follow the paragraph 1 audit procedure before granting a further two year period approval.

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APPENDIX 5

Number of HKAR-66 examination questions to be submitted for CAD audit

The following table shows the number of HKAR-66 examination questions to be submitted for CAD audit under paragraphs 1.8 and 2.5 of Appendix 4:

Title	A	B1	B2* (HKAR-66 ISSUE 2 Revision 3)	Total
Module 1	2	3	3	8
Module 2	3	5	5	13
Module 3	2	5	5	12
Module 4	-	2	4	6
Module 5	2	4	7	13
Module 6	5	7	6	18
Module 7	7	8	6	21
Module 8	2	2	2	6
Module 9	2	2	2	6
Module 10	4	4	4	12
Module 11	10	13	-	23
Module 12	9	12	-	21
Module 13	-	-	18	18
Module 14	-	-	3	3
Module 15	6	9	-	15
Module 16	5	7	-	12
Module 17	2	3	-	5
Total	61	86	65	212

In each HKAR-66 Module, the questions submitted should represent an appropriate selection of examination subjects and examination levels. This means that questions should be spread equally across the respective subjects and topics within the Module as far as possible and at the relevant knowledge levels. The Director-General may require additional questions to be submitted where necessary

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APPENDIX 6

HKAR-147 training course standards

HKAR-66 specifies the level of knowledge required to be demonstrated by examination and therefore this appendix provides guidance on the associated basic training standards. HKAR-66 specifies the standard for aircraft type training in category B1, B2* and C which is ATA Specification 104 at level III as stated in ATA 104. Aircraft task training for category A is at the standard required for each particular task as specified in the relevant maintenance manual.

In respect to basic training, the student should, upon satisfactory completion of such a training course, be able to use and apply his/her knowledge of the theory and basic principles of the various subjects in the manner indicated. It should be noted that the detailed knowledge objectives are defined in respect of the various basic levels of knowledge required and are indicative of the different levels of knowledge expected to be achieved for each HKAR-66 basic category or sub-category. Some basic levels have been omitted because they are not required by HKAR-66. Nothing prevents a HKAR-147 approved maintenance training organisation from carrying out training to a higher standard than that required to achieve the HKAR-66 examination standards.

The HKAR-147 approved maintenance training organisation will need to prepare an objective analysis of how, in terms of time and content, it intends to deliver the various training courses that it is approved or intended to be approved to conduct such that both Section 4 Appendix 1 to HKAR-66 and HKAR 147.200 are satisfied. The information contained in this chapter is intended to assist organisations in this process. As a general guidance, examples are given in Appendix 8 to show the minimum knowledge and practical training hours for category B1, B2* and A1.1.

This appendix should be read in conjunction with Section 4 Appendix 1 and Section 4 Appendix XVII to HKAR-66, and HKAR 147.200.

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APPENDIX 7

Minimum training hours

1. The minimum hours for knowledge training of each HKAR-66 subject modules for category B1, B2* and A1.1 are as follows:

SUBJECTS/ MOUDULES	B1 AEROPLANE		B1 HELICOPTER		B2*	A1.1
	TURBINE ENGINE(S)	PISTION ENGINE(S)	TURBINE ENGINE(S)	PISTON ENGINE(S)	AVIONICS	
1	60	60	60	60	60	10
2	60	60	60	60	60	15
3	150	150	150	150	150	10
4	40	40	40	40	90	X
5	80	80	80	80	140	10
6	90	90	90	90	90	30
7	180	180	180	180	120	40
8	30	30	30	30	30	10
9	18	18	18	18	18	10
10	30	30	30	30	30	30
11	250	250	X	X	X	50
12	X	X	300	300	X	X
13	X	X	X	X	420	X
14	X	X	X	X	45	X
15	170	X	170	X	X	30
16	X	170	X	170	X	X
17	45	45	X	X	X	10
19	X	Optional	X	X	X	X
Total	1203 hr	1203 hr	1208 hr	1208 hr	1253 hr	255 hr

2. The minimum hours for practical training of category B1, B2* or A, in accordance with Section 4 Appendix 1 to HKAR-147, are as follows:

Category	Minimum Practical Training	Minimum Practical Training in actual maintenance environment
A1, A3 or A4	520 hours	156 hours
A2	423 hours	127 hours
B1.1, B1.3, B1.4 or B2*	960 hours	288 hours
B1.2	800 hours	240 hours
B1 and B2* combined	1200 hours	360 hours

Note: Category B2* which in compliance with HKAR-66 ISSUE 2 Revision 3.

3. The summation of knowledge and practical training hours shall be in accordance with Section 4 Appendix 1 to HKAR-147.

APPENDIX 8**Guidance for Knowledge Examiners and Practical Assessors****1 Introduction**

- 1.1 This appendix provides guidance to all HKAR-147 Knowledge Examiners and Practical Assessors responsible for the conduct of knowledge examination and practical assessment respectively as required HKAR 147.105(f).
- 1.2 Knowledge Examiners and Practical Assessors should work under the procedures of the Maintenance Training Organisation Exposition (MTOE) of HKAR-147 Approved Maintenance Training Organisation (AMTO) to conduct examinations and assessments.
- 1.3 A person may perform the function of an HKAR-147 Knowledge Examiner or Practical Assessor, or a combination of both, within an AMTO as defined by the Terms of Reference issued by the AMTO.

2 Knowledge Examiners and Practical Assessors**2.1 The Role and General Consideration**

Knowledge Examiners and Practical Assessors must remember that they are administering the examinations and assessments in the interest of public safety. They will have to display qualities of tact, detachment and impartiality well above the average. Proper standards should be insisted on at all times and applied with consistency and without favour.

When Knowledge Examiners or Practical Assessors are satisfied that the students are competent to maintain operating aircraft with a responsible attitude in respect to flight safety and airworthiness of the aircraft, they will furnish the required documents to support the issue of the Certificate of Recognition to the students.

2.2 Authorisation of Knowledge Examiners and Practical Assessors

The scope of authorisation of Knowledge Examiners and Practical Assessors to conduct examinations and assessment must be stated in the MTOE.

Examination and assessment must be carried out to the standards set out in respective HKAR-147 requirements and the MTOE. If the performance of Knowledge Examiner or Practical Assessor cannot meet the required standards,

the relevant AMTO should suspend his/her authorisation until all corrective actions have been implemented and accepted by the Quality Manager.

2.3 Personnel Requirements

Minimum qualifications of Knowledge Examiners and Practical Assessors relevant to the scope of authorisation including classes, ratings and limitations must be stated in the MTOE for the acceptance by the Director-General.

A Knowledge Examiner should possess appropriate academic qualification and work experience, such as AML or equivalent encompass the scope of his authorisation that will enable him to determine the knowledge level of a student in aircraft maintenance.

A Practical Assessor should possess appropriate practical skill and work experience, such as AML or equivalent encompass the scope of his authorisation, that will enable him to exercise judgment to determine the skill and competence of a student in aircraft maintenance. In particular for practical assessment of aircraft type training, the Practical Assessor should hold a valid aircraft maintenance certification authorisation or equivalent encompass the scope of his authorisation appropriate to the aircraft type.

Candidate to be nominated as a Knowledge Examiner or a Practical Assessor should be trained and assessed according to a programme as stated in the MTOE.

Knowledge Examiners and Practical Assessors should be employed at a position within the AMTO compatible with the responsibilities.

2.4 Acceptance of an Knowledge Examiners / Practical Assessors

The AMTO should assess the competency of the nominated Knowledge Examiners and Practical Assessors according to procedures stipulated in the MTOE.

2.5 Updating Training of Knowledge Examiners

Updating training for Knowledge Examiners should meet the requirements of HKAR 147.105 (h).

AMTO should suspend the authorisation of Knowledge Examiners who fail to meet the above minimum requirements. The authorisation of Knowledge Examiners should not be resumed until all corrective actions have been implemented and accepted by the Quality Manager.

2.6 Record of Examination and Assessment

Knowledge Examiners and Practical Assessors must ensure that written records of all examination and assessment conducted, including the dates and results of those examinations and assessments are kept by the AMTO in accordance with the MTOE procedures. The AMTO must make these records available for inspection by the Director-General.

It is advisable that Knowledge Examiners and Practical Assessors keep notes of any failures recorded and the reasons for each failure in the event that there is an appeal against the conduct of the examination and assessment or a questioning of his judgment.

2.7 Code of Conduct

Knowledge Examiners and Practical Assessors should refrain from engaging in conduct or behaviour that may bring disrepute and embarrassment to the AMTO. Particular attention should be paid to the term “advantage” as defined in the Prevention of Bribery Ordinance and includes gift (both of money and in kind), loan, fee, employment, contact, service, favour (such as discount) etc.

3 Knowledge Examination

3.1 Examination System

The format of the examination should follow the requirements and guidance as stipulated in HKAR-66 and HKAR-147 where appropriate. A Knowledge Examiner is responsible for the quality, integrity, review, and administration of the knowledge examination under his scope of authorisation. When the Knowledge Examiner is also an instructor, he must not directly involve with the teaching of the classes on those subjects that they are responsible for under the role of Knowledge Examiner unless there is an alternative arrangement avoiding the conflict of interest arising from the same instructional staff taking role of Knowledge Examiner and Instructor for the same class on the same subject stated at MTOE accepted by the Director-General

Note: “directly involve” means the Knowledge Examiner teaches a class on a particular subject as an instructor and then act as the Knowledge Examiner for the same class on the same subject.

3.2 Responsibility of Knowledge Examiners

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

Although appropriate technical staff and/or administrative staff may be delegated to share the duties with respect to certain activities in the examination system, such as question compilation, question review, printing of examination papers, invigilation and marking of multi-choice examinations, the ultimate responsibility to the standard and integrity of the examination remains with the Knowledge Examiner. Particular attention must be paid to the activities such as preparation of the examination question bank, compilation of examination papers, and analysis of examination results, which Knowledge Examiners should have direct access to ensure their quality, standard and security fulfill the HKAR-66 and HKAR-147 requirements.

3.3 **Misconduct of Personnel**

Misconduct of student and examiner are specified in HKAR 147.135(b) and HKAR 147.135(c) respectively.

4 **Practical Assessment**

4.1 **Practical Assessment System**

Practical assessment should follow the requirements and guidance as stipulated in HKAR-66 and HKAR-147 where appropriate. A Practical Assessor is responsible for conducting the assessment.

Practical training should cover the use of common tooling/equipment, the disassembly/assembly of a representative selection of aircraft parts, and the participation in representative maintenance activities relevant to the HKAR-66 modules, in particular topics under maintenance practices and aircraft systems. To demonstrate to Practical Assessors that a student has covered the required scope of practical training, Practical Assessors should advise all students to keep records of the practical training which identify the completion of various tasks/areas as determined and required by the approved training course curriculum.

4.2 **Conduct of Assessment**

The conduct of practical assessment can combine the formats of verifying the practical training record, questioning the knowledge of student in the practical aspects, and observing the actual performance of representative tasks. Elements of checking the ability of a student in the handling of abnormal situations should also be included in the assessment.

The performance of a student under assessment can be adversely affected, to some degree, by nervous tension. Practical Assessors can help alleviate this situation by adopting a friendly and sympathetic manner.

- Ensure that the candidate is comfortable and avoid any suggestion of haste during the briefing.
- Clear and unhurried instructions will not only serve to put the candidate at ease, but will ensure that the assessment proceeds smoothly and without delay.
- Encourage the student to ask questions at the conclusion of each section of the assessment.

If the assessment requires the actual performance of representative task and the task requires the student to participate in the actual maintenance environment, or even on an operating aircraft, Practical Assessors must take every precaution to ensure the safety of the personnel involved during the assessment. The assessment process must not involve any act such that the Certificate of Airworthiness of an aircraft will become invalid as a result of such assessment. Typical example is the performance of an actual maintenance task during an assessment that has disturbed the system of an operating aircraft and without proper certification as required by Article 11 of AN(HK)O.

4.3 Standard of Assessment

Practical Assessors should assess the capability of a student in the use of relevant tools/equipment/test equipment as specified by the tools/equipment/test equipment manufacturer, and the use of maintenance manual as specified by the Type Certificate holder, 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. Practical Assessors also have to determine if the student shows an appreciation of the need to ensure clean working conditions and the observance of safety precautions for personnel and the product. This is to ensure the student has a responsible attitude in respect to flight safety and airworthiness of the aircraft.

The student is only required to carry out enough inspection/testing and component removal/fitment/adjustments to prove his capability. Practical Assessors should exercise his judgement, through sufficient sampling during the assessment, to determine if the student is competent and has sufficient skill to perform the duty as an aircraft maintenance engineer in the areas relevant to the licence category/sub-category for which the student will apply.

It would be an impossible task to devise a comprehensive formula which all Practical Assessors could use as sole reference when assessing a student. Nevertheless, it is essential that a high degree of standardisation is maintained.

The following is intended as a guide to assist Practical Assessors in reaching a fair verdict when considering failing a student.

If a student is seen to make a major lapse that could endanger the aircraft, its occupants, or any other persons, a fail should be recorded in that part of the assessment, irrespective of the performance of the student in other items of the assessment.