

Hong Kong Aviation Requirements

HKAR-2

Administrative & Guidance Material

**1 January 2000
Issue 1**

**CAD 2
Civil Aviation Department
HONG KONG, CHINA**

HKAR-2

Applications for further copies of the Hong Kong Aviation Requirements should be addressed to the Civil Aviation Department, Flight Standards and Airworthiness Division, General Office, 10/F Commercial Building, Airport Freight Forwarding Centre, 2 Chun Wan Road, Chek Lap Kok, Hong Kong.

FAX : (852) 2362 4250
TEL : (852) 2769 7641-4
TELEX : 39524 CFSHK

HKAR-2 - Administrative & Guidance Material

The following pages dated 31 May 2011 constitute Revision 13 to HKAR-2 Issue 1:

Pages C-1 to C-3 dated 31 May 2011 replace pages C-1 to C-3 dated 30 November 2010.

Pages CL-1 to CL-2 dated 31 May 2011 replace CL-1 to CL-2 dated 30 November 2010.

Pages P-1 to P-4 dated 31 May 2011 replace pages P-1 to P-4 dated 30 November 2010.

New Pages 8-1 to 8-4 dated 31 May 2011.

Pages 31-1 to 31-14 dated 31 May 2011 replace pages 31-1 to 31-14 dated 30 October 2010

Director-General of Civil Aviation

31 May 2011

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FOREWORD

1. This document is to provide further information regarding the various Hong Kong Aviation Requirements (HKARs). It contains concise general information and addresses the procedures on those aspects of maintenance, maintenance organisations, maintenance certifying staff and training of maintenance certifying staff, which raise most questions and which may not be covered elsewhere in the HKARs published by Hong Kong Civil Aviation Department.
2. It also covers administrative requirements and administrative procedures so that any applicant can use this document for the application to the CAD.
3. Amendments are incorporated into the text by means of a 'Revision' or a complete 'Re-issue'.
4. New, amended and corrected text is indicated by a marginal line.

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 Issue 1 Revision 6, dated 1 November 2004
 Issue 1 Revision 7, dated 31 July 2006
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PREAMBLES

The preambles are intended to be a summarised record of the main changes introduced by each amendment of HKAR-2.

Issue 1

1 January 2000

Procedures address the acceptance of maintenance certifying staff and training of maintenance certifying staff.

Issue 1 Revision 1

1 May 2001

- Added Chapter 21 and 22
- Amended Chapter 23 that a failed module may not be retaken for at least 90 days following the date of the failed module examination, except in particular case. Number of examination questions in each module required for Category B3 was also added. Moreover, the conversion examination requirements were added in Appendix 1 of Chapter 23.
- Added Module 19 in Chapter 28. Minimum knowledge and practical training hours for Category B1, B2 and A1.1 were also added in Appendix 1.
- Other minor changes are incorporated.

Issue 1 Revision 2

1 April 2002

- Changed the effective and compliance dates of HKAR-66 in Chapter 21.
- Added new aircraft types which have been or will be introduced to Hong Kong in Chapter 22 Appendix 2.
- Added a paragraph in Chapter 23 to explain the exemptions from HKAR-66 examinations. Appendix 2 is also added to Chapter 23 to show the modules and/or subjects which have to be taken by the foreign licence holders when applying for the grant of a HKAR-66 licence.
- Other minor changes are incorporated.

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Issue 1 Revision 3

30 November 2002

- Added new aircraft types which have been introduced to Hong Kong in Chapter 22 Appendix 2.
- Other editorial changes.

Issue 1 Revision 4

15 November 2003

- Added Chapters 6, 7 and 20.
- Added new aircraft types which have been introduced to Hong Kong in Chapter 22 Appendix 2.

Issue 1 Revision 5

29 February 2004

- Added new aircraft types in Chapter 22 Appendix 2.
- To describe in more details the multi-choice and essay parts of the basic examinations in Chapter 23.
- Update the HKAR-AMEL to HKAR-66 conversion examination requirements in Chapter 23 Appendix 1.
- Update the exemptions from HKAR-66 examinations in Chapter 23 Appendix 2.

Issue 1 Revision 6

1 November 2004

- Added new aircraft types in Chapter 22 Appendix 2.
- Introduced new Appendix 4 to Chapter 22 to describe the acceptance standards and competence test requirements for HKAR-66 Aircraft Maintenance Licence type rating endorsement applications.
- Amended Chapter 23 to prescribe the number of questions and time allowed for the multi-choice and essay parts of the basic examinations in two separate paragraphs.
- Extended the relief period in Chapter 23 Appendix 2 to 31 March 2006.
- Introduce new Appendix 3 to Chapter 23 to specify the examination requirements for extensions to HKAR-66 Aircraft Maintenance Licence to include another Category.

*Issue 1 Revision 7**31 July 2006*

- Amended Chapter 20 to expand the scope of the Chapter to cover non-compliance findings on AOC maintenance support arrangement. Also, the term "Level 3 Finding" has been changed to read "Observation".
- Added new aircraft types in Chapter 22 Appendix 2.
- Introduced new Appendix 5 to Chapter 22 to provide a list of all limitation codes used on HKAR-66 Licence.
- Amended Chapter 22 Appendix 2 to include the Exemptions for holders of EASA Part 66 Licence and CCAR-66 Licence. Also, the deadline for the conversion examinations has been extended.

*Issue 1 Revision 8**31 August 2008*

- Amended Chapter 22 to remove the validity period of HKAR-66 aircraft maintenance licences as the validity has been defined in HKAR-66.
- Added new aircraft types in Chapter 22 Appendix 2.
- Introduced new Chapter 30 to provide guidance for HKAR-147 Authorised Examiner.

*Issue 1 Revision 9**31 December 2008*

- Added new aircraft types in Chapter 22 Appendix 2.
- Added new limitation codes 44 to 47 in Chapter 22 Appendix 5, and revised limitation codes 1, 2 and 3 to remove references to AMEL.
- Amended Chapter 26 to improve the flow of paragraphs.
- Renamed "Level 3 finding" in Chapter 27 to read "Observation", and additionally included a requirement for the organisation to submit examination questions.
- Adjusted the HKAR-147 paragraph references in Chapter 28 and Chapter 29.

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Issue 1 Revision 10

30 October 2009

- Amended Chapter 23 Appendix 2 to include the Exemptions for the holder of Australia CASA 100.66 and added new paragraph to prescribe the line maintenance carried out by a foreign aircraft maintenance licence holder.
- Amended Chapter 30 to remove the grant of Examiners Authorisation by CAD.
- Added Chapter 31 to provide guidance for use and instructions for the completion of the Authorised Release Certificate (CAD Form One)

Issue 1 Revision 11

31 May 2010

- Amended Chapter 22 Appendix 4 to clarify the associated HKAR-145 requirements.
- Amended Chapter 23 and Appendix 2 to change the term “foreign licences” to “non HKAR-66 AML” and to clarify the use of non HKAR-66 AML in the HKAR-66AML conversion examinations.

Issue 1 Revision 12

30 November 2010

- Amended Chapter 22 Appendix 2 to include new aircraft types.
- Amended Chapter 23 and Appendix 2 to further clarify the use of non HKAR-66 AML in the HKAR-66AML conversion examinations.

Issue 1 Revision 13

31 May 2011

- Add Chapter 8 to stipulate acceptance criteria for organisations working under the provision of HKAR 145.1(e).
- Amended Chapter 31 to revise the format of CAD Form One.

CHAPTER 6

PROCEDURES FOR THE GRANT AND VARIATION OF HKAR-145 APPROVAL

1 **Grant of a HKAR-145 Approval**

- 1.1 The Director-General must receive an application for HKAR-145 approval from the organisation that needs approval. The application should be on CAD Form Two.
- 1.2 A meeting will be arranged between the applicant and the CAD Airworthiness Office to determine if the applicant's business activities justify the grant of HKAR-145 Approval. This is not to establish compliance but rather to see if the activity is a HKAR-145 activity.
- 1.3 The latest amendment of HKAR-145 requirements is to be used as the basis for the investigation and grant of approval.
- 1.4 The Director-General will conduct an audit of the applicant's facility requiring HKAR-145 Approval and examine the proposed maintenance organization exposition (MOE).
- 1.5 The Director-General will determine who and how the audit shall be conducted. If the applicant is a large organisation, the audit may be one large team audit or a short series of small team audits or a long series of single man audits, whichever appropriate for the particular situation.
- 1.6 The CAD Form Six is to be used as a summary checklist for the completion of the audit.
- 1.7 The accountable manager must be seen at least once during the investigation for approval to ensure that the person fully understands the significance of the approval and the reason for signing the MOE Part 1.1 Commitment of the organisation to compliance with the procedures specified in the MOE.
- 1.8 CAD Form Four must be completed for the accountable manager and each person nominated to hold a position required by HKAR145.30(a). CAD Form Four should be treated as a confidential document because it contains personal information.
- 1.9 Apart from needing to ensure that the MOE addresses the subject headings listed in Appendix 2 to HKAR-145 the organisation should write the MOE to reflect the preferred procedures. The Director-General will investigate and establish that the procedures specified in the MOE are in compliance with the

intent of HKAR-145 requirements and then to establish if these are the same procedures to be used within the facility.

- 1.10 The Director-General will establish a clear procedure to indicate acceptance of the MOE because subsequent to the initial approval of the organisation to HKAR-145 there will be a need for the organisation to amend the MOE without affecting the HKAR-145 Approval. A simple MOE status sheet is to be maintained which contains information on when an amendment was received by the Director-General and when it was approved. For large organisation a delegated approval system may be established for the MOE for all minor changes but under no circumstances will the MOE chapter dealing with scope of work/approval (paragraph 1.9 in HKAR-145 Appendix 2) be delegated to the organisation.
- 1.11 The audit of the applicant's facilities is to be carried out on a product line type basis in that, for example, if application has been made for say Airbus A330 and A320, the audit be concentrated on one type only for a full compliance check and dependant upon the result, the second type may only require a sample check against those activities seen to be weak on compliance for the first type. The point being that the Director-General always checks the weaknesses and not the strengths of an organisation.
- 1.12 The Director-General should be accompanied throughout the audit by a senior technical member of the organisation making application for HKAR-145 Approval. Normally this is the proposed quality manager. The reason for being accompanied is to ensure the organisation is fully aware of any findings during the audit. In any case, the proposed quality manager/other senior technical member of the organisation will be debriefed at the end of the audit.
- 1.13 All findings identified during an audit visit will be recorded in CAD Form Six part 4. Such findings will be confirmed in writing to the applicant organisation within 2 weeks of the audit visit without specifying the level of each finding.
- 1.14 Notwithstanding paragraph 1.13 there will be occasions when the Director-General may find situations in the applicant's organisation on which he is unsure about compliance. In this case, the organisation will be informed about possible non-compliance at the time and the fact that the situation will be reviewed within the CAD before a decision is made. The organisation will be informed of the decision within 2 weeks of the audit visit in writing if the decision is a confirmation of non-compliance. If the decision is a finding of being in compliance then a verbal confirmation will be given to the organisation.

- 1.15 For initial approval, all findings must be corrected before approval can be granted.
- 1.16 When satisfied with the above, the Director-General will issue a CAD Form Three Approval Certificate which includes the approval ratings.

Note: The approval will be based only upon the organisational capability (including any associated subcontractors) relative to HKAR-145 and not limited by reference to for instance products type certificated in Hong Kong. For example, if the organisation is capable of maintaining within the limitation of HKAR-145 the Boeing 737-200 series aircraft the approval schedule should state A1 Boeing 737-200 series and not Boeing 737-2H6 which is a particular airline designator for one of many -200 series.

- 1.17 The HKAR-145 Approval is normally granted for a period of two years.

2 Variation of a HKAR-145 Approval

- 2.1 A HKAR-145 Maintenance Approval requires variation, when Class or Ratings are added or deleted from the approval certificate.
- 2.2 The Director-General must receive an application for the variation of a HKAR-145 approval from the organisation that needs the variation. The application should be made on CAD Form Two.
- 2.3 The request for variation of a HKAR-145 Maintenance Approval should be processed in accordance with paragraph 1 (except that sub-paragraphs 1.2, 1.6, 1.7, 1.8 and 1.11 may not be necessary).
- 2.4 When the request for variation consists in a deletion of Class or Rating from the HKAR-145 Maintenance Approval no further investigation is needed, other than ensuring that the MOE also reflects this change.
- 2.5 For the variation of an existing approval all findings relevant to the variation must be corrected before the variation may be approved.

CHAPTER 7**PROCEDURES FOR THE RENEWAL OF THE HKAR-145 APPROVAL****1 General**

The HKAR-145 approved maintenance organisation must apply for renewal five months prior to expiry of the existing approval to ensure there is no break in the approval.

2 Renewal of a time limited HKAR-145 Approval

- 2.1 The Director-General must receive an application for renewal of the HKAR-145 approval from the HKAR-145 approved maintenance organisation. The application should be on CAD Form Two.
- 2.2 The latest amendment of HKAR-145 Requirements is to be used as the basis for the renewal of approval.
- 2.3 The Director-General will conduct an audit of the HKAR-145 approved maintenance organisation's facility and examine the exposition. The Director-General may take into consideration paragraph 3 Exposition Amendment and paragraph 4 Changes in Senior Personnel when renewing the HKAR-145 approval.
- 2.4 The Director-General will determine who and how the audit shall be conducted. If the applicant is a large organisation, the audit may be one large team audit or a short series of small team audits or a long series of single man audits, whichever appropriate for the particular situation. Where a series of audit visits are necessary to arrive at a complete audit of a HKAR-145 approved maintenance organisation, the audit programme will indicate which aspects of the approval to be covered on each visit.
- 2.5 The CAD Form Six is to be used as a summary checklist for the completion of the audit.
- 2.6 Credit may be claimed by the Director-General for specific item audits completed during the preceding 23 month period subject to four conditions:
 - a. the specific item audit must be the same as that required by HKAR-145 latest amendment, and

- b. there must be satisfactory evidence on record that such specific item audits were carried out and that all corrective actions have been taken, and
 - c. the Director-General must be satisfied that there is no reason to believe standards have deteriorated in respect of those specific item audits being granted a back credit; and
 - d. the specific item audit being granted a back credit must be audited not later than 24 months after the last audit of the item.
- 2.7 The audit is to be carried out on a product line type basis in that, for example, if application has been made for say Airbus A330 and A320, the audit be concentrated on one type only for a full compliance check and dependant upon the result, the second type may only require a sample check against those activities seen to be weak on compliance for the first type. The point being that the Director-General always checks the weaknesses and not the strengths of an organisation.
- 2.8 A part of the audit concentrates on two ongoing aspects of the HKAR-145 approval, namely:
- a. the organisation's internal self monitoring quality reports produced by the quality monitoring personnel to determine if the organisation is identifying and correcting its problems; and
 - b. the number of concessions granted by the quality manager or the alternate agreed by the Director-General and why they were considered necessary.
- Note: The HKAR-145 approved maintenance organisation is normally required to work to approved standards and stay within any authorised time limits for maintenance. A concession suggests otherwise.
- 2.9 In addition, where the organisation is engaged in aircraft maintenance, a part of the audit concentrates on deferred line defect rectification performance and deferred base maintenance defect performance, both give some indication of the competence of the organisation.
- 2.10 The accountable manager must be seen at least once during the audit for approval renewal to ensure that the person fully understands the significance of the approval and remains aware of significant issues arising during the audit.

- 2.11 The Director-General should be accompanied throughout the audit by a senior technical member of the organisation. Normally this is the quality manager. The reason for being accompanied is to ensure the organisation is fully aware of any findings during the audit. In any case, the quality manager/other senior technical member of the organisation will be debriefed at the end of the audit visit on the findings made during the audit.
- 2.12 All findings identified during an audit visit will be recorded in CAD Form Six part 4 together with a provisional categorisation as a level 1 or 2 or 3 finding in accordance with Chapter 20 of HKAR-2. Subsequent to the audit visit that identified the particular findings, the Director-General will review the provisional finding levels, adjusting them if necessary and change the categorisation from provisional to confirmed. If the findings made during the audit visit mean that approval renewal will not or cannot be made, then such findings are confirmed in writing to the organisation within 2 weeks of the audit visit.
- 2.13 Notwithstanding paragraph 2.12 there will be occasions when the Director-General may find situations on which he is unsure about compliance. In this case, the organisation will be informed about possible non-compliance at the time and the fact that the situation will be reviewed within the CAD before a decision is made. The organisation will be informed of the decision within two weeks of the audit visit in writing if the decision is a confirmation of non-compliance. If the decision is a finding of being in compliance then a verbal confirmation will be given to the organisation.
- 2.14 Except as specified in 2.15, all confirmed level 1 and 2 findings must have the corrective actions carried out to the satisfaction of the Director-General before a HKAR-145 approval can be renewed.
- 2.15 For large HKAR-145 approved organizations where a series of audit visits are necessary to arrive at a complete audit, a HKAR-145 approval will not be renewed if there are outstanding level 1 findings or time expired level 2 findings.

All confirmed level 1 findings must have the corrective actions carried out to the satisfaction of the Director-General before the approval can be renewed and in fact revocation action may be necessary.

All confirmed level 2 findings must be accepted by the organisation for action to the satisfaction of the Director-General within the level 2 time frame specified in Chapter 20 of HKAR-2 before the approval can be renewed.

- 2.16 When satisfied, the Director-General will issue a CAD Form Three approval certificate which includes the approval ratings.

3 Exposition amendments

- 3.1 The HKAR-145 approved maintenance organisation will have reason on occasions to amend the exposition and therefore as this document is an approved document forming one essential element of the HKAR-145 approval, the Director-General will ensure that he has an adequate control over the approval of any exposition amendments.
- 3.2 The method of exposition amendment approval is to require an approval status page at the front of the exposition which lists each amendment and states against each amendment when it was approved by the Director-General and the document reference of that approval. For large organizations a delegated approval system may be provisioned for the exposition for all minor changes but under no circumstances should be the exposition chapter dealing with scope of work/approval be delegated to the organization.
- 3.3 Amendments to the exposition cannot be approved unless they have been received by the Director-General even where the approval is delegated to the HKAR-145 approved maintenance organisation for the simple reason that unless such amendments are received there is no control.
- 3.4 The HKAR-145 approved maintenance organisation must submit each exposition amendment to the Director-General whether it be an amendment for Director-General's approval or a delegated approval amendment. Where the amendment requires Director-General's approval, the Director-General, when satisfied, will indicate his approval in writing and the HKAR-145 approved maintenance organisation must make reference to the approval in the approval status page. Where the amendment has been submitted under the delegated approval procedure the Director-General will acknowledge receipt in writing and the HKAR-145 approved maintenance organisation must then make reference to the Director-General's acknowledgement in the approval status page.

4 Changes in senior personnel

- 4.1 The HKAR-145 approved maintenance organisation will have reason on occasions to change one or more of the personnel specified in HKAR 145.30(a) all of whom have to be acceptable to the Director-General. Such personnel form one essential element of the HKAR-145 approval and therefore the Director-General will ensure that he has adequate control over this process.

- 4.2 A change of accountable manager requires the HKAR-145 approved maintenance organisation to submit in writing such fact to the Director-General. The CAD Form Four must be used for this purpose. The Director-General will normally accept the accountable manager and will in the letter of acceptance request an urgent amendment to the HKAR 145.70(a)(1) accountable manager exposition statement. In other words, it is essential that the new accountable manager signs the statement of commitment to compliance with HKAR-145 as a matter of urgency. The only basis on which the Director-General may reject an accountable manager is where there is clear evidence that the person previously held a senior position in any Hong Kong approved organisation and abused that position by not complying with the particular Hong Kong aviation requirements.
- 4.3 A change of any of the personnel specified in HKAR 145.30(a) other than the accountable manager also requires the HKAR-145 approved maintenance organisation to submit a CAD Form Four in respect of the particular person to the Director-General. If satisfied with the qualifications and experience of the person in relation to the particular position the Director-General will indicate acceptance in writing to the HKAR-145 approved maintenance organisation.
- 4.4 Changes in HKAR 145.30(a) personnel will require an amendment to the exposition.

CHAPTER 8

**ACCEPTANCE CRITERIA FOR ORGANISATIONS WORKING UNDER
THE PROVISIONS OF HKAR 145.1(e)****1) Introduction**

Under HKAR 145.1(e), a non-HKAR-145 approved maintenance organisation may work under the quality system of an appropriately approved HKAR-145 maintenance organisation. The work scope of the non-HKAR-145 approved maintenance organisation is limited to that permitted by the HKAR 145.65(b) procedures and may not carry out a base maintenance check of an aircraft.

The purpose of this document is to provide the acceptance criteria of the Director-General for the sub-contracting of aircraft line maintenance under HKAR 145.1(e). It should be read along with HKAR 145.1(e), HKAR145.30(j)(1), HKAR 145.75(b) and their respective Acceptable Means of Compliance.

2) Acceptance Criteria of the Director-General

For the Director-General to accept sub-contracting of maintenance under HKAR 145.1(e), the HKAR-145 Approved Maintenance Organisation (AMO) should meet the following criteria.

- a) The HKAR-145 AMO must have adequate experience on line maintenance at out-ports.
- b) The HKAR-145 AMO should submit formal application to Civil Aviation Department (CAD) along with the Maintenance Management Exposition (MME) or Maintenance Organisation Exposition (MOE) amendment at least 4 weeks before the commencement of operation at the sub-contracted maintenance location. In any case, the HKAR-145 AMO should advise CAD at the earliest opportunity when the potential sub-contracted maintenance organisation is identified. This allows both parties to plan the necessary resources for the project.
- c) An operator should scrutinize the maintenance agreement signed between the HKAR-145 AMO and the sub-contracted maintenance organisation.

d) Maintenance / Ground Handling / Ground Support agreement (or contract) should be ready before the commencement of operation at the sub-contracted maintenance location.

e) The HKAR-145 AMO should establish procedures for the assessment and acceptance of the sub-contracted maintenance organisation in MME or MOE for the approval of the Director-General. The procedures should meet the intent of HKAR-145. An assessment must be done on the intended scope of work of the sub-contracted maintenance activities.

f) A Station Procedure Manual or equivalent procedure manual, approved by the Quality Manager of the HKAR-145 AMO, should be available at the sub-contracted maintenance organisation before the commencement of operation.

g) Report raised by the HKAR-145 AMO for the assessment / audit on the sub-contracted maintenance organisation should be closed before the commencement of operation.

h) The HKAR-145 AMO should demonstrate that the standard of the national licence, based upon which the certifying staff of the sub-contracted maintenance organisation is authorised, is compatible with that of the HKAR-66 as required by HKAR145.30(j)(1). In this regard, the following procedures should be followed:

i) The HKAR-145 AMO should carry out an assessment on the national licence to establish compatibility with HKAR-66. The assessment report, along with the examination syllabus of the licence in question, should be submitted to CAD.

ii) If compatibility with HKAR-66 could not be established, the HKAR-145 AMO should demonstrate that the acceptance of the national licence as the basis for the issue of Certificate of Release to Service (CRS) is the best option at the said maintenance location. In such case, the HKAR-145 AMO undertakes to conduct training to the certifying staff to bridge any discrepancy in standards between that of the HKAR-66 and the national licence.

i) The national licence, based upon which the sub-contracted maintenance organisation issues the CRS under the approval of the HKAR-145 AMO, should be

stated in the MME or MOE.

j) The HKAR-145 AMO must authorise the certifying staff of the sub-contracted maintenance organisation.

k) The HKAR-145 AMO must maintain the list of certifying staff of the sub-contracted maintenance organisation and their records of training on aircraft type, Hong Kong aviation legislation, human factors, and company procedures of the HKAR-145 AMO and the Operator being supported.

l) If a copy of item c), d), e), f) and h) is not submitted together with the MME or MOE amendment, the HKAR-145 AMO should provide the copy at least one week before the planned audit of or the acceptance by the Director-General when the audit is impractical.

m) Under normal circumstances, the Director-General should carry out the audit before accepting the sub-contracted maintenance organisation. If manpower constraint makes this impractical, the audit should be accomplished within 6 months after accepting the sub-contracted maintenance organisation through approval of the MME or MOE amendment.

n) All findings identified during the audit should be closed prior to the acceptance of the sub-contracted maintenance organisation. In case the initial audit is performed after acceptance, all the findings identified must be closed in accordance with the time-frame agreed between the HKAR-145 AMO and the Airworthiness Officer performing the audit, or the acceptance of the sub-contracted maintenance organisation may be suspended.

o) After the acceptance by the Director-General, the HKAR-145 AMO should audit the sub-contracted maintenance organisation at a frequency agreed by the Director-General, subject to the condition that the sub-contracted maintenance organisation should be audited four times in the first year of operation. The format of the audit can be agreed with the Director-General. It is appreciated that the audit frequency imposed by a HKAR-145 AMO may vary between companies. Therefore, it is important that objective criteria are used when determining audit frequency in conjunction with the Director-General. In this regard, the following criteria can be used.

- i) Number of engineering related complaints lodged against the sub-contracted maintenance organisation
- ii) Number and category of Non-compliance findings established by the HKAR-145 AMO during the audit(s) within the past 12 months
- iii) Number of mandatory occurrence report or internal occurrence report accountable by the sub-contracted maintenance organisation
- iv) Scale of operation at sub-contracted maintenance location

Based on the above-mentioned criteria i) to iv), the Director-General may demand more frequent audits on the sub-contracted maintenance organisation by the HKAR-145 AMO during the initial operation at the sub-contracted maintenance location until the Director-General is satisfied with the supervision of the HKAR-145 AMO.

If the quality standards of a sub-contracted maintenance organisation indicate a decline, the audit frequency should be increased accordingly. On the other hand, the audit frequency can be reduced on the basis of sound quality records.

p) When the certifying staff of the HKAR-145 AMO is also required to issue CRS at the sub-contracted maintenance location, the MME or MOE should contain the relevant procedures approved by the Director-General.

CHAPTER 20

NON-COMPLIANCE FINDINGS

1 Introduction

- 1.1 There will be occasions when the Director-General carrying out an audit of an organisation for compliance with CAD 360 or HKAR-145, as applicable, will find evidence of non-compliance.
- 1.2 "Findings" are categorised into 2 groups as follows of which "Level 1" represents major non-compliance and "Level 2" represents minor non-compliance. In addition, "Observations" represent in-compliance information.
- 1.3 After receipt of notification of findings, the AOC maintenance management organisation or HKAR-145 approved maintenance organisation should define a corrective action plan and demonstrate corrective action to the satisfaction of the Director-General within a period agreed with the Director-General.

2 Level 1 Finding

- 2.1 "Level 1 finding" means any significant non-compliance with the CAD 360 or HKAR-145 requirements which lowers the safety standard and hazards seriously the flight safety. It includes non-compliance on aircraft components.
- 2.2 In practical terms where the Director-General finds a significant non-compliance with any one sub-paragraph of the following referenced by subjects or paragraphs against a complete product line, it is deemed to be a Level 1 finding:

Note: A complete product line is defined as all the aircraft, engine or component of a particular type.

- a. HKAR 145.25; HKAR 145.30; HKAR 145.35; HKAR 145.40; HKAR 145.45; HKAR 145.50; HKAR 145.55; HKAR 145.60; HKAR 145.65; HKAR 145.70; HKAR 145.75 and HKAR 145.80.
- b. CAD 360 subject on maintenance responsibilities, maintenance management, quality system, maintenance management exposition, aircraft maintenance programme, technical log and maintenance records.

- 2.3 In addition, the following are Level 1 findings:
- a. Failure to gain access to the HKAR-145 approved maintenance organisation during normal operating hours of the organisation in accordance with HKAR 145.90(b) after two written requests.
 - b. Failure to gain access to the AOC maintenance management organisation and aircraft and any associated HKAR-145 approved maintenance organisation during normal operating hours of the relevant organisation or aircraft after two written requests.
- 2.4 Examples:
- a. If the calibration control of equipment as specified in HKAR 145.40(b) had previously broken down on a particular type product line such that most "calibrated" equipment was suspect from that time then that would be a Level 1 finding.
 - b. If the management of an aircraft maintenance programme broke down some time ago on a particular type of aircraft such that all aircraft of that type was suspect from that time then that would be a Level 1 finding.

3 The Director-General's Action for Level 1 Finding

- 3.1 The acceptance of AOC maintenance support arrangement or the HKAR-145 approval will be revoked, limited, or suspended in whole or in part, depending upon the extent of the Level 1 finding, until successful corrective action has been taken by the AOC maintenance management organisation or HKAR-145 approved maintenance organisation, as applicable.
- 3.2 An initial acceptance of AOC maintenance support arrangement or HKAR-145 approval, and the subsequent renewal or variation will not be granted until corrective action has been completed.
- 3.3 In addition, it may be necessary to carry out further maintenance and re-certify all affected products dependent upon the nature of the finding.

4 Level 2 Finding

- 4.1 "Level 2 finding" means any non-compliance with the CAD 360 or HKAR-145 requirements which could lower the safety standard and possibly hazard the flight safety. It also includes non-compliance on aircraft components.
- 4.2 In practical terms where the Director-General finds a non-compliance with any

one sub-paragraph of the subjects or paragraphs specified in 2.2 against one product, it is deemed to be a Level 2 finding.

4.3 Examples:

- a. One time non-compliance with the maintenance programme for a specified aircraft is a Level 2 finding.
- b. One time use of a component without any serviceable tag.
- c. The training documents of the certifying staff are not completed.

5 **The Director-General's Action for Level 2 Findings**

5.1 In the case of an application for an initial acceptance of AOC maintenance support arrangement or HKAR-145 approval, such acceptance/approval will not be granted until corrective action has been completed.

5.2 Except as specified in paragraph 5.3, all Level 2 findings must be actioned by the HKAR-145 approved maintenance organisation to the satisfaction of the Director-General before a HKAR-145 approval can be renewed.

5.3 For AOC maintenance management organisations and large HKAR-145 approved maintenance organizations, where a series of audit visits are necessary to arrive at a complete audit, all Level 2 findings must be accepted by the AOC maintenance management organisation or HKAR-145 approved maintenance organisation for corrective action to the satisfaction of the Director-General. The corrective action period granted by the Director-General will be appropriate to the nature of the finding but in any case initially not more than three months. Where the AOC maintenance management organisation or HKAR-145 approved maintenance organisation has not implemented the necessary corrective action within that period the Director-General may grant a further period of up to three months where appropriate. In exceptional circumstances and subject to a realistic action plan being in place, the Director-General may specifically vary the maximum six month corrective action period. However, in granting such a change the past performance of the AOC maintenance management organisation or HKAR-145 approved maintenance organisation will be considered. Failure to comply within the total 6 month time scale, unless specifically varied by the Director-General, means that provisional suspension of the acceptance of AOC maintenance support arrangement or HKAR-145 approval, as applicable, will proceed in accordance with Air Navigation (Hong Kong) Order 1995 as amended.

5.4 In addition, it may be necessary to carry out further maintenance and re-certify

all affected products dependent upon the nature of the finding.

5.5 For the variation of an existing acceptance of AOC maintenance support arrangement or HKAR-145 approval, any Level 2 finding specific to the variation means that variation will not be granted until corrective action has been completed.

6 Observation

6.1 "Observation" means an observation intended to give background information. Observation will not include information suggesting non-compliance with the CAD 360 or HKAR-145. No action will be taken by the Director-General in the case of an Observation.

CHAPTER 21

IMPLEMENTATION POLICY FOR HKAR-66 CERTIFYING STAFF

1 HKAR-66 Basic Principles

- 1.1 HKAR-66 is a requirement that addresses the qualification of staff who are required to issue an aircraft certificate of release to service on completion of maintenance.

HKAR-66 fundamentally requires maintenance certifying staff to hold a HKAR-66 aircraft maintenance licence and a HKAR-145 certification authorisation before being permitted to issue an aircraft certificate of release to service.

- 1.2 To qualify for the HKAR-66 aircraft maintenance licence, the applicant needs to demonstrate a sufficient breadth of aviation basic knowledge to an acceptable standard by examination and to provide evidence of sufficient aviation maintenance experience which proves competence. The total aviation maintenance experience required can be reduced by attending a HKAR-147 approved basic training course. Where appropriate, the total aviation maintenance experience must be certified by the HKAR-145 approved maintenance organisation(s) that provided the opportunity for experience. Experience gained at a facility which is not HKAR-145 approved must be certified by a person acceptable to the CAD.

Basic knowledge examinations may be conducted by an appropriately approved HKAR-147 organisation or the CAD except that CAD may require all such examinations to be conducted by HKAR-147 organisations. However it should be noted that HKAR-66 provides for some alleviation from examinations where it can be shown that the applicant has passed an equivalent examination on the particular subject(s). Such alleviation from examinations may only be granted by CAD.

The HKAR-66 aircraft maintenance licence may be issued without any aircraft type endorsements.

- 1.3 To qualify for an aircraft type endorsement on the HKAR-66 aircraft maintenance licence in category B1 or B2 or C, the applicant is required by HKAR-66 to attend an approved aircraft type training course for the particular aircraft type including sufficient practical maintenance experience and demonstrate by examination sufficient knowledge of the aircraft type. No aircraft type endorsement is required in the case of category A.

The aircraft type examination may be conducted by the CAD or an appropriately approved HKAR-147 organisation or an organisation accepted by the CAD to conduct such examination.

Aircraft type endorsement of the HKAR-66 aircraft maintenance licence is carried out by CAD.

- 1.4 To qualify for the HKAR-145 certification authorisation in category B1 or B2 or C, the applicant is normally required by HKAR-145 to hold an appropriate aircraft type rated HKAR-66 aircraft maintenance licence and demonstrate sufficient knowledge of relevant HKAR-145 approved maintenance organisation procedures.

Demonstrated knowledge of procedures must be to the satisfaction of the HKAR-145 approved maintenance organisation's quality department.

The HKAR-145 certification authorisation in category B1 or B2 or C is issued by the HKAR-145 approved maintenance organisation. HKAR-145 will provide more guidance on the issue of the certification authorisation.

- 1.5 To qualify for the HKAR-145 certification authorisation in category A, the applicant is normally required by HKAR-145 to hold a HKAR-66 aircraft maintenance licence in category A and receive specific task training in the tasks for which the applicant will be granted a HKAR-145 certification authorisation. The applicant must also demonstrate sufficient knowledge of relevant HKAR-145 approved maintenance organisation procedures.

The task training and the associated practical assessment may be conducted either by the HKAR-145 approved maintenance organisation or an appropriately approved HKAR-147 maintenance training organisation. Demonstrated knowledge of procedures must be to the satisfaction of the HKAR-145 approved maintenance organisation's quality department.

The HKAR-145 certification authorisation in category A is issued by the HKAR-145 approved maintenance organisation. HKAR-145 will provide more guidance on the issue of the certification authorisation.

2 HKAR-66 Implementation

- 2.1 HKAR-66 is effective on 1 April 2002 with mandatory compliance within two years on 1 April 2004 and therefore all persons who issue aircraft certificates of release to service after 1 April 2004 for a HKAR-145 approved maintenance organisation will need to be in compliance with HKAR-66 from this latter date.

This also means that any person qualified in accordance with Hong Kong aviation regulations valid before 1 April 2002 who wish or are required to add any new basic category/sub-category (as specified in HKAR-66) to such qualification after 1 April 2004 will need to convert from the Hong Kong aviation regulations to the HKAR-66 requirement standard and be issued a HKAR-66 aircraft maintenance licence.

Reference to Hong Kong aviation regulations valid before 1 April 2002 does not preclude CAD from amending such regulations during the transition period to 1 April 2004, but such amendments be limited to adopting HKAR-66 as anything less would result in unnecessary complications.

- 2.2 Persons qualified in accordance with Hong Kong aviation regulations valid before 1 April 2002 may continue to issue aircraft certificates of release to service under a HKAR-145 certification authorisation up to but not after 1 April 2004 on behalf of a HKAR-145 approved maintenance organisation. Such persons will not need to fully convert to the HKAR-66 requirement standard subject to no additional basic categories / sub-categories being added to such qualification after 1 April 2004.
- 2.3 Persons qualified in accordance with Hong Kong aviation regulations valid before 1 April 2002 who wish or are required to add new aircraft types within their existing categories / sub-categories need not be fully converted to the HKAR-66 requirement standard until 1 April 2004. This means that until 1 April 2004 new aircraft type training and examination may continue in accordance with Hong Kong aviation regulations valid before 1 April 2002.

- 2.4 Notwithstanding paragraphs 2.2 and 2.3, any person qualified in accordance with Hong Kong aviation regulations valid before 1 April 2002 is entitled to apply at any time for full conversion to the HKAR-66 requirement standard and CAD should initiate full conversion within three months of application. Actual conversion is, of course subject to demonstration of satisfactory compliance with the particular HKAR-66 conversion requirement.
- 2.5 Notwithstanding paragraphs 2.2 and 2.3, any person qualified in accordance with Hong Kong aviation regulations valid before 1 April 2002 is required by HKAR-66 to renew for a HKAR-66 aircraft maintenance licence before 1 April 2004 if the person wishes to continue to qualify, at least in part, to issue aircraft certificates of release to service after 1 April 2004. The person is not required to take any examination for this purpose but it must be understood that the HKAR-66 aircraft maintenance licence will contain limitations in relation to HKAR-66. The existing scope of the previous Hong Kong licence will be transferred to the HKAR-66 aircraft maintenance licence.
- 2.6 Any person in compliance with HKAR-66 is entitled to be issued the relevant HKAR-66 aircraft maintenance licence and it therefore follows that any HKAR-145 and/or HKAR-147 organisation involved in qualifying such a person to HKAR-66 must forward the necessary evidence of compliance in accordance with HKAR-2 Chapter 22 even if the HKAR-145 approved organisation decides not to proceed with the issue of a HKAR-145 certification authorisation.
- 2.7 Where full credit is claimed against the HKAR 66.30 maintenance experience requirement by the use of approved basic training, then such training must be carried out in a HKAR-147 maintenance training organisation approved by CAD to conduct approved basic training in accordance with the relevant CAD procedures.

3 Implementation Prioritisation

3.1 It is estimated that there could be in excess of 750 certifying staff who will need conversion to HKAR-66. In addition, the training and examination standards for new mechanics and engineers will need to be converted to the HKAR-66 standard as soon as practical. CAD need to establish a conversion standard from the present Hong Kong requirements to the HKAR-66 requirement for existing certifying staff who may need to convert. There is thus a need to prioritise the task of conversion.

CAD should be in a position to process any application for a HKAR-66 aircraft maintenance licence whether it is for a protected rights limited conversion, a full conversion or a first application by 1 April 2002.

3.2 In general, CAD should in the first place carry out the following unrelated actions in parallel;

(a) Research the difference between the present Hong Kong requirements and HKAR-66 in terms of standards and subjects covered by the HKAR-66 licence categories and declare such differences. A general guidance for the examinations required for converting the HKAR-AMEL to HKAR-66 licences is shown in Chapter 23 Appendix 1.

(b) Start the process of approving HKAR-147 training organisations to train and examine new mechanics and engineers to the HKAR-66 basic standard as a matter of priority.

(c) Assess the exemptions which may be granted to the foreign licence holders with regard to the issue of HKAR-66 licences in the cases of basis categories/sub-categories. Some of the foreign licensing systems that have been assessed and the exemptions being granted to the HKAR-66 examinations are listed in Chapter 23 Appendix 2.

3.3 Approval of aircraft type training to the HKAR-66 standard will be followed in due course unless CAD is satisfied that current training is already to the required standard, when HKAR-147 approvals may be granted for aircraft type training earlier on the basis that it will not delay the actions of paragraph 3.2 (a) and (b).

CHAPTER 22

**PROCEDURES FOR THE INITIAL ISSUE / VARIATION / RENEWAL OF
THE HKAR-66 AIRCRAFT MAINTENANCE LICENCE****Introduction**

The requirements for the issue of aircraft maintenance licences are specified in HKAR-66. This chapter specifies the procedures to be followed for the issue, variation or renewal of those licences. Supplemental information is presented in Appendix 1.

1 Procedure for the issue of a HKAR-66 aircraft maintenance licence

- 1.1 The applicant engineer/mechanic must complete CAD Form DCA35 and send it to CAD together with any required fee and any relevant para 1.2 to para 1.4 supporting documentation.
- 1.2 Maintenance experience must be written up by means of the CAD Form DCA35B in a manner that the reader has a reasonable understanding of where, when and what maintenance constitutes the experience. A task by task account is desirable but a blank statement "X years maintenance experience completed" is not acceptable. Alternatively, a CAD approved log book of maintenance experience may be used instead of filling the DCA35B. It is acceptable to cross refer in the DCA35 to other documents containing information on maintenance experience, such as log book, except that such experience must be countersigned by a person acceptable to the Director-General. A typical example of a log book page is shown in Appendix 3 of this chapter.
- 1.3 Applicants claiming the maximum reduction in HKAR 66.30(a) total experience based upon having successfully completed HKAR 147.85 approved basic training, should include the HKAR-147 certificate of recognition for approved basic training.
- 1.4 Applicants claiming the reduction in HKAR 66.30(a) total experience based upon having successfully completed technical training in an organisation or institute recognised by the Director-General as a competent organisation or

institute, should include the relevant certificate of successful completion of training.

- 1.5 Applicants claiming credit against the HKAR 66.30(a) total experience requirement by virtue of HKAR 66.30(e) non-civil aircraft maintenance experience, may only be granted such credit where the Director-General has recognised such non-civil aircraft maintenance experience. The Director-General in recognising non-civil aircraft maintenance experience will have specified who within the non-civil environment may make a statement that the applicant has met the relevant maintenance experience. The applicant should include a detailed statement of such maintenance experience signed by the non-civil maintenance authority in accordance with the conditions specified in the CAD letter of recognition.
- 1.6 On receipt of the CAD Form DCA35 and any supporting documentation submitted to the Director-General, it will be checked for completeness and ensure that the experience claimed meets the requirement of HKAR-66 and that the experience record satisfies para 1.2 in terms of content and the countersigning signature.
- 1.7 The Director-General will either conduct the examination or request that such examinations be carried out by an appropriately approved HKAR-147 maintenance training organisation.
- 1.8 When satisfied that the applicant meets the standards of knowledge and experience required by HKAR-66, the Director-General will issue the HKAR-66 aircraft maintenance licence to the applicant. The same information shall be kept on CAD file.

2 Procedure for the variation of a HKAR-66 aircraft maintenance licence to include an additional basic category

- 2.1 Application for additional basic categories, that is, HKAR-66 category A or B1 or B2 or C to the HKAR-66 aircraft maintenance licence must follow the procedure of sub-section 1 except that in addition the applicant's current original licence should be presented to the CAD with the CAD Form DCA35.
- 2.2 At the completion of the sub-section 1 procedures, the Director-General will

reissue the HKAR-66 aircraft maintenance licence to include the additional basic category. The same information shall be kept on CAD file.

3 Procedure for the variation of a HKAR-66 aircraft maintenance licence to include an aircraft type

- 3.1 Aircraft types are entered in the HKAR-66 aircraft maintenance licence category B1 or B2 or C when the applicant is qualified on the particular aircraft type as specified in HKAR-66, in terms of having completed the particular aircraft type training course conducted by an appropriately approved HKAR-147 maintenance training organisation or such an aircraft type training course approved by the Director-General and has been successfully examined on the aircraft type by either the Director-General or by an appropriately approved HKAR-147 maintenance training organisation **and** has completed the necessary type practical maintenance experience and therefore application to include an aircraft type in the HKAR-66 aircraft maintenance licence must follow the procedure of this sub-section 3.
- 3.2 The HKAR-145 approved maintenance organisation must ensure that the applicant meets the HKAR-66 requirement for the aircraft type to be entered in the HKAR-66 aircraft maintenance licence before signing the CAD Form DCA35 recommendation. The HKAR-145 organisation is used to recommend the applicant because of the need to endorse the aircraft practical experience but nothing prevents such HKAR-145 organisation from using its HKAR-147 training department, if it has one, to co-ordinate the applicant's evidence of compliance on behalf of the organisation. The recording and countersigning of aircraft practical experience gained inside or outside the HKAR-145 environment must satisfy the conditions specified in para 1.2. The aircraft type practical experience can be demonstrated by means of a personal log book as described in para 1.2.
- 3.3 The acceptance standards for applicants who hold aircraft certification qualifications or have attended aircraft type trainings that have not been accepted/approved by the Director-General, are described in Appendix 4.
- 3.4 When in compliance with HKAR-66 as summarised in para 3.1, the HKAR-66 aircraft maintenance licence holder must complete the relevant aircraft type rating parts of CAD Form DCA35, request the maintenance organisation to

endorse the DCA35 with an appropriate aircraft type recommendation and present the completed CAD Form DCA35 together with the holder's licence to the CAD.

- 3.5 On receipt of a satisfactory CAD Form DCA35, certificate of relevant aircraft type training, records of practical experience and the accompanying HKAR-66 aircraft maintenance licence, the Director-General will reissue said licence to include the aircraft type. A copy of the reissued licence is retained on CAD file.
- 3.6 Where a HKAR-145 approved maintenance organisation qualifies an engineer or mechanic for HKAR-66 aircraft maintenance licence aircraft type endorsement but chooses not to issue the HKAR-145 certification authorisation for economic reasons, the Director-General will, on request of the applicant, still proceed with the endorsement of the HKAR-66 aircraft maintenance licence.

The purpose of this provision is to cover the case where the HKAR-145 approved maintenance organisation is attempting to qualify more personnel than it may need to issue aircraft certificates of release to service on the basis that some personnel may fail to qualify and normal unpredicted staff turnover, such as those leaving the organisation at short notice, etc.

4 Procedure for the renewal of a HKAR-66 aircraft maintenance licence

- 4.1 The HKAR-66 aircraft maintenance licence will be renewed subject to confirmation that the requirements stated in HKAR 66.40 are met, and the HKAR-66 aircraft maintenance licence held by CAD has the same endorsements as contained in the holder's copy of the document and the licence holder is not under investigation for possible revocation, suspension or variation of the HKAR-66 aircraft maintenance licence in accordance with HKAR 66.65 and HKAR-2 Chapter 24.
- 4.2 The holder of a HKAR-66 aircraft maintenance licence must complete the relevant parts of CAD Form DCA35A and submit it with the holder's licence to the CAD. A licence may be renewed provided that the holder is in compliance with the requirements specified in HKAR 66.40.

- 4.3 The Director-General will compare the holder's HKAR-66 aircraft maintenance licence with the CAD file and verify any pending revocation, suspension or variation action pursuant to HKAR 66.65. If the documents are identical and no action is pending pursuant to HKAR 66.65 action, the maintenance experience is satisfied then the licence will be renewed and the copy held on file will be updated accordingly. The Director-General will not be carrying out any investigation to ensure that the licence holder is in current **aircraft type** maintenance practice as this is a matter for the HKAR-145 approved maintenance organisation in ensuring validity of the HKAR-145 certification authorisation.
- 4.4 If the licence copy held by CAD is different to that held by the licence holder, the Director-General will investigate the reasons for such differences and act accordingly.
- 4.5 To act accordingly in the case where the Director-General is unable to establish that the different endorsements were properly obtained to the standard of HKAR-66 means that the Director-General may not renew the HKAR-66 aircraft maintenance licence and will inform both the licence holder and the affected HKAR-145 approved maintenance organisation of such fact and may need to consider to take action under HKAR 66.65 to revoke, suspend or vary the licence in question.

APPENDIX 1

HKAR-66 AIRCRAFT MAINTENANCE LICENCE

- 1 Each licence holder should have a unique licence number based upon a numeric designator.
- 2 The licence will have the original issue date, an expiry date and date of issue printed. Name, address, nationality, date of birth of the licence holder will also be stated. The licence holder should sign the document in ink after having checked the correctness of the information contained. The aircraft type rating need not be issued until the first type endorsement is included.
- 3 Aircraft type endorsement will use the standard codes contained in Appendix 2.
- 4 The HKAR-66 aircraft maintenance licence once issued is required to be kept by the person to whom it applies in good condition and who shall remain accountable for ensuring that no unauthorised entries are made.
- 5 Failure to comply with para 4 may invalidate the licence and could lead to the holder not being permitted to hold any HKAR-145 certification authorisation and may result in prosecution under the law.
- 6 It is important to understand that the existence of the HKAR-66 aircraft maintenance licence alone does not permit the holder to issue a HKAR 145.50 certificate of release to service. To issue a HKAR 145.50 certificate of release to service requires a valid HKAR-66 aircraft maintenance licence type rated for the aircraft **AND** an appropriate valid HKAR-145 certification authorisation. The HKAR-145 certification authorisation is issued by the HKAR-145 approved maintenance organisation.

A type rated HKAR-66 aircraft maintenance does not normally confer any certification privileges on the holder in their own right. Such licences must be used in conjunction with a certification authorisation.
- 7 A type rated HKAR-66 aircraft maintenance licence may only be used to make certification(s) where the licence is endorsed to permit this.

APPENDIX 2

AIRCRAFT TYPE RATINGS FOR HKAR-66 AIRCRAFT
MAINTENANCE LICENCE

Introduction: The following aircraft type ratings and codes are regularly updated to add new aircraft type ratings and to ensure common terminologies are used as in EASA Part-66 Aircraft Maintenance Licence.

Aircraft type ratings and codes that have been endorsed on the HKAR-66 Aircraft Maintenance Licence and have been revised in subsequent Revisions remain valid. They would be amended in opportunity basis.

Important: The inclusion of an aircraft type in the HKAR-66 Aircraft Maintenance Licence does **not** indicate that the aircraft type has been granted a type certificate in Hong Kong, this list being only intended for the purpose of maintenance.

1 **Aeroplanes**

Airbus A300-600 (GE CF6)
Airbus A300-600 (PW 4000)
Airbus A310 (GE CF6)
Airbus A310 (PW 4000)
Airbus A318/A319/A320/A321 (CFM 56)
Airbus A319/A320/A321 (V2500)
Airbus A330 (RR Trent 700)
Airbus A330 (GE CF6)
Airbus A330 (PW 4000)
Airbus A340 (CFM56)
Airbus A340 (RR Trent 500)
Airbus A380 (EA GP7200)
Airbus A380 (RR Trent 900)

APEX CAP10 (Lycoming)

BAE Systems Jetstream 41 (Honeywell TPE331)

Boeing 737-100/200 (PW JT8D)
Boeing 737-300/400/500 (CFM56)
Boeing 737-600/700/800/900 (CFM56)
Boeing 747-100/747SR (PW JT9D)
Boeing 747SR (GE CF6)
Boeing 747-200/300 (RR RB211)

Boeing 747-200/300 (GE CF6)
Boeing 747-200/300 (PW JT9D)
Boeing 747-400 (RR RB211)
Boeing 747-400 (GE CF6)
Boeing 747-400 (PW 4000)
Boeing 747-8 (GE GEnx)
Boeing 757-200/300 (RR RB211)
Boeing 757-200/300 (PW 2000)
Boeing 767-200/300/400ER (GE CF6)
Boeing 767-200/300 (PW JT9D)
Boeing 767-200/300 (PW 4000)
Boeing 767-300 (RR RB211)
Boeing 777-200/300 (RR Trent 800)
Boeing 777-200/300 (GE 90)
Boeing 777-200/300 (PW 4000)
Boeing DC-10/MD-10 (GE CF6)
Boeing MD-11 (GE CF6)
Boeing MD-11 (PW 4000)
Boeing MD-80 Series (PW JT8D)
Boeing MD-90 (IAE V2500)

Bombardier BD-100-1A10 (Honeywell AS907)
Bombardier BD-700 Series (RRD BR710)
Bombardier CL-600-2B16 (GE CF34)
Bombardier CL-600-2B19 (GE CF34)
Bombardier CL-600-2C10/-2D15/-2D24 (GE CF34)

Cessna 152 (Lycoming)
Cessna 172 Series (Lycoming)
Cessna 182 Series (Lycoming)

Falcon 7X (PWC PW307A)

Embraer EMB-135/145 (RR Corp AE3007A)
Embraer ERJ-170/190 (GE CF34)

Gulfstream G-IV Series (RRD Tay)
Gulfstream GIV-X Series (RRD Tay)
Gulfstream GV-SP Series (RRD BR710)
Gulfstream (IAI) 200/Galaxy (PWC PW306)

(Hawker Beechcraft) BAe 125/ Series 700/800 (Honeywell TFE731)
(Hawker Beechcraft) Beech 58 (Continental)

Slingsby T67M (Lycoming)

| Zlin Z-242 L (Lycoming)

2 Helicopters

Agusta AB139 / AW139 (PWC PT6)

Bell 206LT (RR Corp 250)

Eurocopter SA315B (Turbomeca Artouste)

Eurocopter AS 332 L2 (Turbomeca Makila 1A2)

Eurocopter AS350 (Turbomeca Arriel 1)

Eurocopter AS350 (Turbomeca Arriel 2B)

Eurocopter AS 355 (Turbomeca Arrius 1)

Eurocopter EC120 (Turbomeca Arrius 2F)

Eurocopter EC155 (Turbomeca Arriel 2)

Eurocopter EC135 (PWC PW 206)

| MD Helicopters 369 Series / SEI NH-500D (RR Corp 250)

MD Helicopters 500N / 600N / AMD500N (RR Corp 250)

Robinson R22/R44 Series (Lycoming)

Sikorsky S-70 (GE T700)

Sikorsky S-76A (Turbomeca Arriel 1)

Sikorsky S-76C (Turbomeca Arriel 1)

Sikorsky S-76C (Turbomeca Arriel 2)

APPENDIX 3

SAMPLE OF A LOG BOOK PAGE

Name: _____		ATA Chapter No. _____		Page No. _____
Aircraft Registration & Type	Item	Details of Work Undertaken	Date(s) & Place Work Undertaken	Signature, Name & Status of Person in charge & Date(s)

APPENDIX 4

**HKAR-66 AIRCRAFT MAINTENANCE LICENCE TYPE RATING ENDORSEMENT -
ACCEPTANCE OF AIRCRAFT MAINTENANCE QUALIFICATION
& TYPE TRAINING NOT ISSUED / APPROVED BY THE DIRECTOR-GENERAL****1 Introduction**

- 1.1 In accordance with the HKAR 66.45 requirement, the endorsement of a type rating to an HKAR-66 Aircraft Maintenance Licence (AML) requires the applicant to complete an approved aircraft type knowledge and practical training process.
- 1.2 Aircraft maintenance qualifications (e.g. type rated licence and maintenance authorisation), which are not issued by the Director-General, do not automatically meet the HKAR-66 requirements for the type endorsement to the HKAR-66 AML. Neither does the type training, which is not approved by the Director-General.
- 1.3 It should be reminded that, for aircraft types as listed in paragraph 14 of the Hong Kong Airworthiness Notice No. 10, the type endorsement on the HKAR-66 AML does not provide the licence holder the certification privilege on commercial air transport aircraft. As per HKAR 145.35, the HKAR-145 approved maintenance organisation (AMO) must establish the competence and qualification of all prospective certifying staff for certification authorisation. The assessment, performed by the HKAR-145 AMO, on competence and qualification may result in requiring additional training.
- 1.4 The Director-General has evaluated the situation and has defined the acceptance standards and the competence test requirements for type endorsement applications made in accordance with this Appendix 4.

2 Acceptance Standards

- 2.1 The Director-General accepts the certification authorisations issued before 1 July 2004, by maintenance organisations holding HKAR-145 approval. Competence tests are not required for such type rating endorsements.
- 2.2 Except as provided in 2.1 above, other type rating endorsement applications, which are based on an aircraft maintenance qualifications not issued by the Director-General or type training equivalent to Level 3 of ATA 104 Specification but not approved by the Director-General, the applicant must

satisfy the competence test process, as stipulated in paragraph 3 of this Appendix.

- 2.3 Type ratings will only be endorsed to an HKAR-66 AML with appropriate Basic Category / Sub-category.
- 2.4 When the privileges of the certification qualification are not equivalent to the full privileges of the HKAR-66 Category / Sub-category applied, the type rating endorsement, if granted, will have appropriate limitations on the HKAR-66 AML.
- 2.5 The Director-General will normally not consider the type rating endorsement application if the applicant's aircraft type training has been completed for more than five years and without evidence of recent certification experience on the particular aircraft / engine type.

3 Competence Test Process

- 3.1 A competence test will have 20 multiple-choice (MC) questions. Each MC question will have three choices and an allowed nominal completion time of 90 seconds. The pass mark of the examination is 75% with no penalty marking.
- 3.2 The competence test can be conducted by the CAD or by an appropriately approved HKAR-147 training organisation.
- 3.3 For aircraft / engine types of less complexity, the Director-General may waive the competence test requirement.

4 Aeroplanes below 5700 Kg MTWA and Rotorcraft below 2730 Kg MTWA

- 4.1 These aircraft are less complex than large aircraft and in view of this, the Director-General can exercise special consideration when endorsing such type ratings to the HKAR-66 AML.
- 4.2 When an application is not supported by evidence of a type-training course, the applicant must pass a competence test.
- 4.3 The competence test for aircraft types within this paragraph can be an oral examination.

APPENDIX 5

LIMITATIONS ON A CONVERTED HKAR-66 LICENCE

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

Code	Limitations
1	Airframe only Excluding electrical power generation & distribution systems
2	Turbine engine only
3	Jet - turbine engines only
4	Piston engines only
5	Turbine engined rotorcraft only
6	Piston engined rotorcraft only
11	Electrical power systems only
12	Instrument systems only
13	Instrument-autopilot (aeroplanes) autoland & autothrottle systems only
14	Radio communication/navigation systems only
15	Radio communication/navigation and radar systems only
16	Compass compensation and adjustment only
17	Autopilot (helicopter) only
18	Autopilot (aeroplanes) only
21	Excluding airframe
22	Excluding engine
23	Excluding propeller-turbine engines
24	Excluding electrical systems and components
25	Excluding avionic LRUs
31	Including electrical components in mechanical systems
32	Excluding electrical power systems
33	Excluding instrument systems
34	Excluding autopilot system on aeroplanes
35	Excluding autopilot system on helicopters
36	Excluding automatic landing and autothrottle system on aeroplanes
37	Excluding radio communication/navigation and radar systems
38	Excluding radio radar systems

Code	Limitations
41	Excluding compass compensation and adjustment
42	Unpressurised aeroplanes (wood or combined wood and metal) only
43	Unpressurised aeroplanes (excluding wood and composite) only
44	Instrument system (General Aviation) An instrument system specified in sub-paragraphs 8.1* and 8.3* to 8.4* of Airworthiness Notice No. 10
45	Electrical system (General Aviation) An electrical system specified in sub-paragraphs 9.1* and 9.2* to 9.4* of Airworthiness Notice No. 10
46	Autopilot system (General Aviation) An autopilot system specified in sub-paragraphs 13.1* or 13.2* of Airworthiness Notice No. 10
47	VHF communication equipment only Replacement of VHF communication equipment for aeroplane/rotorcraft has a MTWA not exceeding 2730 kg
999	Paragraphs endorsed under the CERTIFICATION PRIVILEGES are the paragraphs of Airworthiness Notice No. 10. Limited to the PARAGRAPHS endorsed, this licence may also be used to certify within the appropriate privileges set out in Airworthiness Notices No. 3 & 10.

* Component replacements only, provided that functioning checks to prove serviceability do not require the use of test apparatus.

CHAPTER 23

**PROCEDURES AND BASIS FOR HKAR-66
AIRCRAFT MAINTENANCE LICENCE EXAMINATIONS****Introduction**

HKAR-66 specifies the examination standard to be used by the CAD when conducting all basic examinations.

This chapter specifies the basis and procedures to be used for examinations.

1 Basis for examinations

- 1.1 Examinations must be conducted under the control of the CAD.
- 1.2 All basic examinations are carried out using the multi-choice question format to ensure a reasonable consistent standard of knowledge. Questions are prepared with the use of aviation English. In addition, there will be a need to set several essay type questions to address the issues not examined under the multi-choice question format. The primary purpose of essay questions is to determine that the candidates can express themselves in a clear and concise manner and can prepare a concise technical report for the maintenance record, which is why only a few essay questions are required.

2 Conversion standards

- 2.1 Whilst HKAR-66 does not require certifying staff qualified to HKAR-AMEL requirements to convert to the full HKAR-66 requirement other than in the case of a new Basic Category or Sub-category, there will be many such certifying staff who volunteer to convert. It is therefore essential that a conversion examination standard is established.
- 2.2 The basis for any required conversion examinations for those qualified certifying staff who need to convert to the HKAR-66 standard or who volunteer to convert is specified in Appendix 1 of this Chapter.

3 Exemptions from HKAR-66 AML examinations

- 3.1 Exemptions from part of the HKAR-66 AML written examination may be granted by the Director-General based on qualifications held and the Category

for which application has been made.

- 3.2 Holder of a HKAR-66 AML in one or more Categories/Sub-categories, when applying for extension to include other Categories/Sub-categories, will be granted exemptions from those modules which form part of the examinations for the Categories/Sub-categories already held. Examinations required for extensions to include another Basic Licence Categories/Sub-categories are detailed in Appendix 3 of this Chapter.
- 3.3 Holder of a non HKAR-66 AML, when applying for the initial grant of a HKAR-66 AML in a Basic Category/Sub-category, may be granted exemptions from part or all of the HKAR-66 AML examinations. The required modules and/or subjects that have to be taken by the applicant are shown in Appendix 2 of this Chapter.
- 3.4 Holder of an aircraft maintenance licence issued by an aviation authority other than those listed in Appendix 2 can apply to the Personnel Licensing Office of CAD for exemptions. A copy of the relevant aviation requirements detailing the aircraft maintenance licensing system and its syllabus should be submitted with the application form for assessment. CAD will consider whether to proceed with the assessment and advise the applicant accordingly.

4 Format, timeframe and pass standard for basic examinations

- 4.1 As the HKAR-66 basic category modules contain varying numbers of subjects and different levels dependant upon the HKAR-66 aircraft maintenance licence category, each module will require a different number of multi-choice questions and may require an essay question to be answered. A module is defined as any one of the 19 subject modules specified in HKAR-66 Section 2 Appendix 1.
- 4.2 The basic examination is divided into two parts, multi-choice and essay.
- 4.3 The multi-choice part of the basic examination is further divided into modular examination papers. Each modular examination paper consists of multi-choice questions from the respective module. The pass mark for each multi-choice examination modular paper is 75% with no penalty marking.
- 4.4 Each multi-choice question has 3 alternative answers of which only one of them is the correct answer and the candidate is allowed the time specified in paragraph 5 per module which is based upon a nominal average of 75 seconds per question.

- 4.5 The essay part of the basic examination is a single examination paper consists of all required essay questions from the respective modules. The pass mark for essay paper is 75%. The candidate is allowed the time specified in paragraph 6 which is based upon 20 minutes for each question.
- 4.6 Answer to an essay question must be presented in a technical report style. For each essay question, 60% of the full mark is allocated to the technical content whilst 40% of the full mark is allocated to the presentation skill. The answer must contain the required key points addressed by the question and no significant error related to any required key points.
- 4.7 For pass mark purpose, the essay part examination is considered as separate to the multi-choice part examination. If either the multi-choice part only or the essay part only is failed, then it is only necessary to retake the multi-choice or essay part, as appropriate.
- 4.8 All HKAR-66 modules that make up a complete HKAR-66 aircraft maintenance licence Category or Sub-category must be passed within a 5 year time period of passing the first module except in the case specified in paragraph 4.9. A failed module may not be retaken for at least 90 days following the date of the failed module examination, except in the case of a HKAR-147 approved training organisation which conducts a course of re-training tailored to the failed module and the failed module may be retaken after 30 days.
- 4.9 The 5 year time period specified in paragraph 4.8 does not apply to those modules which are common to more than one HKAR-66 aircraft maintenance licence Category or Sub-category and which were previously passed as part of another such Category or Sub-category.

5 Number of multi-choice questions and time allowed for the HKAR-66 Section 2 Appendix 1 Modules

- 5.1 Subject: Module 1 Mathematics :-
A - 16 multi-choice questions. Time allowed 20 minutes.
B1 - 30 multi-choice questions. Time allowed 40 minutes.
B2 - 30 multi-choice questions. Time allowed 40 minutes.
B3 - 30 multi-choice questions. Time allowed 40 minutes.
- 5.2 Subject: Module 2 Physics :-
A - 30 multi-choice questions. Time allowed 40 minutes.
B1 - 50 multi-choice questions. Time allowed 65 minutes.
B2 - 50 multi-choice questions. Time allowed 65 minutes.
B3 - 40 multi-choice questions. Time allowed 50 minutes.

- 5.3 Subject: Module 3 Electrical Fundamentals :-
A - 20 multi-choice questions. Time allowed 25 minutes.
B1 - 50 multi-choice questions. Time allowed 65 minutes.
B2 - 50 multi-choice questions. Time allowed 65 minutes.
B3 - 36 multi-choice questions. Time allowed 50 minutes.
- 5.4 Subject: Module 4 Electronic Fundamentals :-
A - None.
B1 - 20 multi-choice questions. Time allowed 25 minutes.
B2 - 40 multi-choice questions. Time allowed 50 minutes.
B3 - None
- 5.5 Subject: Module 5 Digital Techniques /Electronic Instrument Systems :-
A - 16 multi-choice questions. Time allowed 20 minutes.
B1 - 40 multi-choice questions. Time allowed 50 minutes.
B2 - 70 multi-choice questions. Time allowed 90 minutes.
B3 - None
- 5.6 Subject: Module 6 Materials and Hardware :-
A - 50 multi-choice questions. Time allowed 65 minutes.
B1 - 70 multi-choice questions. Time allowed 90 minutes.
B2 - 60 multi-choice questions. Time allowed 75 minutes.
B3 - 50 multi-choice questions. Time allowed 65 minutes.
- 5.7 Subject: Module 7 Maintenance Practices :-
A - 70 multi-choice questions. Time allowed 90 minutes.
B1 - 80 multi-choice questions. Time allowed 100 minutes.
B2 - 60 multi-choice questions. Time allowed 75 minutes.
B3 - 80 multi-choice questions. Time allowed 100 minutes.
- 5.8 Subject: Module 8 Basic Aerodynamics :-
A - 20 multi-choice questions. Time allowed 25 minutes.
B1 - 20 multi-choice questions. Time allowed 25 minutes.
B2 - 20 multi-choice questions. Time allowed 25 minutes.
B3 - 20 multi-choice questions. Time allowed 25 minutes.
- 5.9 Subject: Module 9 Human factors :-
A - 20 multi-choice questions. Time allowed 25 minutes.
B1 - 20 multi-choice questions. Time allowed 25 minutes.
B2 - 20 multi-choice questions. Time allowed 25 minutes.
B3 - 20 multi-choice questions. Time allowed 25 minutes.
- 5.10 Subject: Module 10 Aviation Legislation :-
A - 40 multi-choice questions. Time allowed 50 minutes.
B1 - 40 multi-choice questions. Time allowed 50 minutes.
B2 - 40 multi-choice questions. Time allowed 50 minutes.
B3 - 40 multi-choice questions. Time allowed 50 minutes.

- 5.11 Subject: Module 11 Aeroplane Aerodynamics, Structures and Systems :-
A - 100 multi-choice questions. Time allowed 125 minutes.
B1 - 130 multi-choice questions. Time allowed 165 minutes.
B2 - None.
B3 - 75 multi-choice questions. Time allowed 100 minutes.
- 5.12 Subject: Module 12 Helicopter Aerodynamics, Structures and Systems :-
A - 90 multi-choice questions. Time allowed 115 minutes.
B1 - 115 multi-choice questions. Time allowed 145 minutes.
B2 - None.
B3 - None
- 5.13 Subject: Module 13 Aircraft Aerodynamics, Structures and Systems :-
A - None.
B1 - None.
B2 - 130 multi-choice questions. Time allowed 165 minutes.
B3 - None
- 5.14 Subject: Module 14 Propulsion :-
A - None.
B1 - None.
B2 - 25 multi-choice questions. Time allowed 30 minutes.
B3 - None
- 5.15 Subject: Module 15 Gas Turbine Engine :-
A - 60 multi-choice questions. Time allowed 75 minutes.
B1 - 90 multi-choice questions. Time allowed 115 minutes.
B2 - None.
B3 - None
- 5.16 Subject: Module 16 Piston Engine :-
A - 50 multi-choice questions. Time allowed 65 minutes.
B1 - 70 multi-choice questions. Time allowed 90 minutes.
B2 - None.
B3 - 70 multi-choice questions. Time allowed 90 minutes.
- 5.17 Subject: Module 17 Propeller :-
A - 20 multi-choice questions. Time allowed 25 minutes.
B1 - 30 multi-choice questions. Time allowed 40 minutes.
B2 - None.
B3 - 30 multi-choice questions. Time allowed 40 minutes.
- 5.18 Subject: Module 18 Reserved
- 5.19 Subject: Module 19 Wooden Aeroplanes :-

This examination is only necessary for category B1.2 or B3 wooden aeroplane rating.

- B1.2 - 20 multi-choice questions. Time allowed 25 minutes.
B3 - 20 multi-choice questions. Time allowed 25 minutes.

6 Number of essay questions and time allowed for the HKAR-66 Section 2 Appendix 1 Modules

- 6.1 For candidates applied for Category A, B1, B2 or B3 and do not have exemptions granted on Modules 7, 9 and 10:
2 essay questions on Module 7, plus
1 essay question on Module 9, plus
1 essay question on Module 10.
Time allowed 80 minutes.
- 6.2 For candidates applied for Category A, B1, B2 or B3 and have exemption granted on Module 7:
1 essay question on Module 9, plus
1 essay question on Module 10.
Time allowed 40 minutes.
- 6.3 For candidates applied for Category A, B1, B2 or B3 and have exemptions granted on Modules 7 and 9:
1 essay question on Module 10.
Time allowed 20 minutes.

7 Conduct of examinations

- 7.1 The Director-General appoints examiners/invigilators who will be present during all examinations to ensure the integrity of the examination.
- 7.2 All examination papers will be handed out to candidates at the start of the examination and handed back to the invigilator at the end of the examination allotted time period. All papers, including rough work papers, are not allowed to be removed from the examination room during or after the examination allotted time period.
- 7.3 Apart from specific documentation needed for specific examinations, only the examination paper may be available to the candidate during the examination.
- 7.4 Examination candidates are separated from each other so that they cannot read each other's examination papers and they may not speak to any person other than the examiner/invigilator.
- 7.5 Candidate who is proven to be cheating or breaching the examination rules will be banned from taking any CAD examination for at least 12 months after the date of the incident.

APPENDIX 1

**HKAR-AMEL to HKAR-66
CONVERSION EXAMINATION REQUIREMENTS**

- 1 Conversion examinations are designed for HKAR-AMEL licence holders who wish to convert to a **FULL** HKAR-66 licence. Where possible conversion examinations will cover complete HKAR-66 modules or complete topics within a module. However due to the complexity of comparing knowledge items between the HKAR-AMEL and the HKAR-66 syllabuses and the broaden scope of the Category B1 or B2 licence categories, it has been necessary to introduce specialised examinations within certain modules to cover a selected range of HKAR-66 syllabus paragraphs.
- 2 Module 9 - Human Factors of HKAR-66 is not required to be examined in all conversion examinations for those applicants who have attended an initial human factors training course approved by the Director-General. An applicant may elect to attempt the Module 9 examination if otherwise.
- 3 The conversion examination requirements for the HKAR-AMEL licences of popular combination of major categories are shown in Table 1. Applicants holding HKAR-AMEL licences with categories other than those listed should approach the CAD for details of the conversion examination requirements.

Table 1

From HKAR-AMEL with category (Note 1)	To HKAR-66 category	HKAR-66 Modules and /or Partial Modules required for conversion examination (Note 2)	No. of question
A2	B1.1	Partial Module 3 – Topics 3.9 to 3.18 Module 4 Module 5 Partial Module 7 – Topics 7.4 & 7.7 Partial Module 11 – Topics 11.5, 11.6, 11.8, 11.10 & 11.14 Module 15 Module 17	40 20 40 16 70 90 30
TE & JTE	B1.1	Partial Module 3 – Topics 3.9 to 3.18 Module 4 Module 5 Partial Module 7 – Topics 7.4, 7.7, 7.8, 7.14, 7.16 to 7.19 Module 8 Module 11 Module 17 (for JTE only)	40 20 40 40 20 130 30
E	B1.1	Module 5 Module 6 Partial Module 7 – Topics 7.6, 7.8 to 7.20 Module 8 Partial Module 11 – Topics 11.1 to 11.5, 11.7, 11.9 to 11.11, 11.13 & 11.15 to 11.17 Module 15 Module 17	40 70 50 20 110 90 30

A2/TE & A2/JTE	B1.1	Partial Module 3 – Topics 3.9 to 3.18 Module 4 Module 5 Partial Module 7 – Topics 7.4 & 7.7 Partial Module 11 – Topics 11.5, 11.6, & 11.14 Module 17 (for A2/JTE only)	40 20 40 16 50 30
A2/TE/E & A2/JTE/E	B1.1	Module 5 Partial Module 11 – Topics 11.5 Module 17 (for A2/JTE/E only)	40 16 30
TER	B1.3	Partial Module 3 – Topics 3.9 to 3.18 Module 4 Module 5 Partial Module 7 – Topics 7.4 & 7.7 Partial Module 12 – Topics 12.7, 12.8 & 12.15	40 20 40 16 50
E	B2	Module 5 Module 8 Partial Module 13 – Topics 13.1, 13.3, 13.4 & 13.6 to 13.8 Module 14	70 20 120 25
CC	B2	Partial Module 13 – Topics 13.1.3, 13.3 (SAS only), 13.4 (C&N only), 13.5, 13.6, 13.8 (CCA only) & 13.9	80
R	B2	Module 8 Partial Module 13 – Topics 13.1 to 13.3, 13.4 (FD & INS only), 13.5 & 13.7 to 13.9 Module 14	20 110 25
E/CC	B2	Partial Module 13 – Topics 13.1.3, 13.3 (SAS only), 13.4 (C&N only), 13.6 & 13.8 (CCA only)	60

E/R	B2	Module 8	20
		Partial Module 13 – Topics 13.1, 13.3, 13.4 (FD & INS only), 13.7 & 13.8	90
		Module 14	25
CC/R	B2	Partial Module 13 – Topics 13.1.3, 13.3 (SAS only), 13.5, 13.8 (CCA only) & 13.9	45
E/CC/R	B2	Partial Module 13 – Topics 13.1.3, 13.3 (SAS only) & 13.8 (CCA only)	25

Note:

1. Abbreviation for HKAR-AMEL Licence Categories:

A2	AMEL Cat. A - Aeroplanes 2
CC	AMEL Cat. X - Combined Category
E	AMEL Cat. X - Electrical
JTE	AMEL Cat. C - Jet Turbine Engine – Aeroplanes
R	AMEL Cat. R - Communication/Navigation and Radar
TE	AMEL Cat. C - Turbine Engine – Aeroplanes
TER	AMEL Cat. A&C – Turbine-engined Rotorcraft

2. Abbreviation for examination topics:

SAS	Stability Augmentation System in helicopters
C&N	Communication and Navigation Systems
CCA	Compass Compensation and Adjustment
FD	Flight Director
INS	Inertia Navigation/Reference Systems

APPENDIX 2

EXEMPTIONS FROM HKAR-66 EXAMINATIONS

- 1 **Conversion examinations to FULL HKAR-66 Licence in Basic Category/ Sub-category**
 - 1.1 Time after time applications have been received by CAD requesting exemption from HKAR-66 examinations under various circumstances using different non HKAR-66 licences. It is therefore important to state clearly that the purpose of such “relief” is to take credits of the technical knowledge and aircraft maintenance experience of certain non HKAR-66 licence holders that when they are intended to be employed by Hong Kong aviation organisations will not be required to start from scratch in the HKAR-66 licence examinations. Candidate who has applied for HKAR-66 licence examinations or has already been granted with a HKAR-66 Aircraft Maintenance Licence (AML) would not be normally considered for exemption from HKAR-66 examinations by claiming credit from a non HKAR-66 licence subsequently.
 - 1.2 Holders of non HKAR-66 licences as listed in paragraph 1.5, when applying for the initial grant of a HKAR-66 Aircraft Maintenance Licence (AML) in a Basic Category/Sub-category, may be granted exemptions from part of the written examinations on certain HKAR-66 modules. The required modules and/or partial modules to be taken by the applicant are shown in paragraph 1.5. For applicant who holds more than one non HKAR-66 licences, only one non HKAR-66 licence can be considered in the application for the initial grant of HKAR-66 AML. The applicant should clearly indicate which non HKAR-66 licence he/she prefers to use. Once the HKAR-66 AML is granted, subsequent Basic Category/Sub-category extension should follow the requirements stipulated in Appendix 3 of this Chapter.
 - 1.3 The applicant must fulfill the experience requirements stipulated in HKAR 66.30(d) and the non HKAR-66 licence being held must be valid on the date of application for the grant of a HKAR-66 AML.
 - 1.4 The applicant must demonstrate the “need” to CAD for exemptions from HKAR-66 examinations by a company letter of a Hong Kong aviation organisation or any other documents in substantiation of the application.

1.5 Required Examination on HKAR-66 Modules and/or Partial Modules:

Non HKAR-66 Licence	In Categories	Convert to HKAR-66 Categories / Sub-category	Required Examination on HKAR-66 Modules and/or Partial Modules
JAR-66	A or B	A or B in relevant Category/Sub-category	Module 10 (40 MC + 1 essay question)
EASA Part-66	A or B	A or B in relevant Category/Sub-category	Module 10 (40 MC + 1 essay question)
Australia CASA AMEL	A & C Type Rated in relevant Group/Type	B1	Module 4 (20 MC) Module 5 (40 MC) Module 9 (20 MC + 1 essay question) Module 10 (40 MC + 1 essay question) Partial Module 11 – Topics 11.5 (24 MC)
	E + I + R Type Rated in relevant Group/Type	B2	Module 9 (20 MC + 1 essay question) Module 10 (40 MC + 1 essay question)
Australia CASA 100.66	A or B	A or B in relevant Category/Sub-category	Module 10 (40 MC + 1 essay question)
New Zealand CAA AMEL	A & C Type Rated in relevant Group/Type	B1	Module 4 (20 MC) Module 5 (40 MC) Module 9 (20 MC + 1 essay question) Module 10 (40 MC + 1 essay question) Partial Module 11 – Topics 11.5 (24 MC) Note: Module 9 will be exempted if the licence is issued based on syllabus dated 1 April 1997 or later revision.

Non HKAR-66 Licence	In Categories	Convert to HKAR-66 Categories / Sub-category	Required Examination on HKAR-66 Modules and/or Partial Modules
	E + I + R Type Rated in relevant Group/Type	B2	Module 9 (20 MC + 1 essay question) Module 10 (40 MC + 1 essay question) Note: Module 9 will be exempted if the licence is issued based on syllabus dated 1 April 1997 or later revision.
FAA	Airframe & Powerplant (A & P) Mechanic Certificate	B1.1	Module 4 (20 MC) Module 5 (40 MC) Module 9 (20 MC + 1 essay question) Module 10 (40 MC + 1 essay question) Partial Module 11 – Topic 11.5 (24 MC)
		B1.3	Module 4 (20 MC) Module 5 (40 MC) Module 9 (20 MC + 1 essay question) Module 10 (40 MC + 1 essay question) Partial Module 12 – Topics 12.1 to 12.4 & 12.7 (50 MC)
		B2	Module 4 (40 MC) Module 5 (70 MC) Module 9 (20 MC + 1 essay question) Module 10 (40 MC + 1 essay question) Partial Module 13 – Topics 13.1.3, 13.3, 13.4, 13.6 & 13.8 (100 MC)

Non HKAR-66 Licence	In Categories	Convert to HKAR-66 Categories / Sub-category	Required Examination on HKAR-66 Modules and/or Partial Modules
UKCAA	AMEL -LWTR	B1 or B2 or B3	Module 10 (40 MC + 1 essay question) and Modules and topics required to be examined are the same as in Appendix 1 Table 1 of this Chapter for the relevant licence category
CAAC CCAR-66	ME Maintenance Personnel Licence	B1.1	Module 10 (40 MC + 1 essay question)
	AV Maintenance Personnel Licence	B2	Module 10 (40 MC + 1 essay question)

2 Line maintenance carried out by a non HKAR-66 aircraft maintenance licence holder under a HKAR-145 approved maintenance organisation at a location other than Hong Kong

- 2.1 For a HKAR-145 approved maintenance organisation at a location other than Hong Kong, the organisation may use certifying staff to carry out line maintenance with a valid non HKAR-66 aircraft maintenance licence, as prescribed in paragraph 2.3, considered by the Director-General as comparable with HKAR-66.
- 2.2 The above-mentioned HKAR-145 approved maintenance organisation must ensure that each individual certifying staff, qualified above, is in compliance with the conditions stipulated in HKAR 145.30 Paragraph (j)(5).
- 2.3 The holders of the non HKAR-66 aircraft maintenance licences prescribed in Paragraph 1 of this Chapter and aircraft maintenance licences issued by the following authorities with Categories/Ratings being equivalent to the HKAR-66 Category/Sub-category are acceptable to the Director-General for the purpose.

- a. South African Civil Aviation Authority
- b. Civil Aviation Authority of Singapore
- c. Department of Civil Aviation Malaysia
- d. Japanese Civil Aviation Bureau (Class 1 Licence)
- e. Transport Canada Civil Aviation

APPENDIX 3

HKAR-66 EXAMINATIONS FOR EXTENSIONS TO BASIC LICENCE CATEGORIES

1 Introduction

Because the modular syllabus of HKAR-66 often requires different levels of knowledge for the different licence categories (A, B1 and B2) within a module, there are “conversion” examinations applicable to certain modules for licence holders wishing to extend a HKAR-66 licence to include another category. The most common cases of licence extensions are set out below.

2 Extension of Category B1 to include Category B2

Note 1: Because of the impracticability of setting an examination for the single topic (avionic general test equipment) that has to be covered in Module 7, questions for that subject will be included in the Module 5 conversion examination.

Category Held	HKAR-66 Modules and / or Topics required for Conversion Examination	Number of Questions
B1.1	Partial Module 4 - Topics 4.1.1 b) all, 4.1.2 all, 4.1.3 b) all, 4.2 all, 4.3 b) all.	20
	Partial Module 5 and 7 - Topics 5.1 to 5.3 all, 5.6 b) all, 5.7 to 5.10 all, 7.4 all. (see Note 1)	40
	Partial Module 13 - Topics 13.1.3 all, 13.3 & 13.4 all, 13.6 all, 13.8 all.	100
B1.2	Partial Module 4 - Topics 4.1.1 b) all, 4.1.2 all, 4.1.3 b) all, 4.2 all, 4.3 b) all.	20
	Partial Module 5 and 7 - Topics 5.1 to 5.3 all, 5.6 b) all, 5.7 to 5.10 all, 7.4 all. (see Note 1)	40
	Partial Module 13 - Topics 13.1.3 all, 13.3 & 13.4 all, 13.6 all, 13.8 all.	100
	Module 14 all.	25

Category Held	HKAR-66 Modules and / or Topics required for Conversion Examination	Number of Questions
B1.3	Partial Module 4 - Topics 4.1.1 b) all, 4.1.2 all, 4.1.3 b) all, 4.2 all, 4.3 b) all.	20
	Partial Module 5 and 7 - Topics 5.1 to 5.3 all, 5.6 b) all, 5.7 to 5.10 all, 7.4 all. (see Note 1)	40
	Partial Module 13 - Topics 13.1 all, 13.3 & 13.4 all, 13.6 to 13.8 all.	100
B1.4	Partial Module 4 - Topics 4.1.1 b) all, 4.1.2 all, 4.1.3 b) all, 4.2 all, 4.3 b) all.	20
	Partial Module 5 and 7 - Topics 5.1 to 5.3 all, 5.6 b) all, 5.7 to 5.10 all, 7.4 all. (see Note 1)	40
	Partial Module 13 - Topics 13.1 all, 13.3 & 13.4 all, 13.6 to 13.8 all.	100
	Module 14 all.	25

3 Extension of Category B2 to include Category B1

Note 2: The following Table applies to full Category B2 AML holders only. Category B2 licence holders with any limitations must remove those limitations first by taking the appropriate conversion examinations or can qualify for B1 by following the conventional route and be examined on the complete modules required for B1.

To Category	HKAR-66 Modules and / or Topics required for Conversion Examination	Number of Questions
B1.1	Partial Module 6 - Topics 6.1 a) all, 6.2 a) all, 6.3 b) all, 6.4 b) all, 6.5.4 all, 6.6 b) all, 6.7 all, 6.10 all.	20
	Partial Module 7 - Topics 7.6 all, 7.8 to 7.14 all, 7.15 b) all, 7.16 b) all, 7.18 b) & c) all, 7.19 b) all.	40
	Partial Module 11 - Topics 11.1 to 11.4 all, 11.7 to 11.13 all, 11.15 to 11.17 all.	90

To Category	HKAR-66 Modules and / or Topics required for Conversion Examination	Number of Questions
B1.1 (continued)	Partial Module 15 - Topics 15.1 to 15.13 all, 15.15 to 15.22 all. Module 17 all.	70 30
B1.2	Partial Module 6 - Topics 6.1 a) all, 6.2 a) all, 6.3 b) all, 6.4 b) all, 6.5.4 all, 6.6 b) all, 6.7 all, 6.10 all. Partial Module 7 - Topics 7.6 all, 7.8 to 7.14 all, 7.15 b) all, 7.16 b) all, 7.18 b) & c) all, 7.19 b) all. Partial Module 11 - Topics 11.1 to 11.4 all, 11.7 to 11.13 all, 11.15 to 11.17 all. Partial Module 16 - Topics 16.1 to 16.9 all, 16.11 to 16.13 all. Module 17 all.	20 40 90 55 30
B1.3	Partial Module 6 - Topics 6.1 a) all, 6.2 a) all, 6.3 b) all, 6.4 b) all, 6.5.4 all, 6.6 b) all, 6.7 all, 6.10 all. Partial Module 7 - Topics 7.6 all, 7.8 to 7.14 all, 7.15 b) all, 7.16 b) all, 7.18 b) & c) all, 7.19 b) all. Partial Module 12 - Topics 12.1 to 12.6 all, 12.9 to 12.14 all, 12.16 all. Partial Module 15 - Topics 15.1 to 15.13 all, 15.15 to 15.22 all.	20 40 80 70
B1.4	Partial Module 6 - Topics 6.1 a) all, 6.2 a) all, 6.3 b) all, 6.4 b) all, 6.5.4 all, 6.6 b) all, 6.7 all, 6.10 all. Partial Module 7 - Topics 7.6 all, 7.8 to 7.14 all, 7.15 b) all, 7.16 b) all, 7.18 b) & c) all, 7.19 b) all. Partial Module 12 - Topics 12.1 to 12.6 all, 12.9 to 12.14 all, 12.16 all.	20 40 80

To Category	HKAR-66 Modules and / or Topics required for Conversion Examination	Number of Questions
B1.4 (continued)	Partial Module 16 - Topics 16.1 to 16.9 all, 16.11 to 16.13 all.	55

4 Extension of Category A1 to include Category B1.1

Category Held	HKAR-66 Modules and / or Topics required for Conversion Examination	Number of Questions
A1	Module 1 all	30
	Module 2 all	50
	Module 3 all	50
	Module 4 all	20
	Module 5 all	40
	Module 6 all	70
	Partial Module 7, topics 7.4 to 7.16, 7.18 & 7.20.	60
	Module 8 all	20
	Partial Module 10, topics 10.2, 10.3, 10.5, 10.6 & 10.8.	20
	Module 11 all	130
	Module 15 all	90
	Module 17 all	30

5 Requirements for other extensions to Basic Licence Categories

Applicants wish to apply for extensions to Basic Licence Categories other than those listed should approach the CAD for details of the conversion examination requirements.

CHAPTER 24

PROCEDURES FOR THE REVOCATION, SUSPENSION OR LIMITATION OF THE HKAR-66 AIRCRAFT MAINTENANCE LICENCE OR HKAR-145 CERTIFICATION AUTHORISATION**Introduction**

The revocation, suspension or limitation of a HKAR-66 aircraft maintenance licence or a direction regarding the HKAR-145 certification authorisation is a decision for the CAD based upon the recommendation of the supervising surveyor/officer.

The revocation, suspension or limitation of a HKAR-66 aircraft maintenance licence or a direction in regard to the HKAR-145 certification authorisation should be in accordance with the Hong Kong legal practices.

Having stated this, however, there are a number of good reasons to first ensure that all reasonable actions have been thoroughly carried out to establish the facts and circumstances of the particular issue. The reasons include the need for all parties to be given a fair hearing before confirming the CAD action. It is also common sense to ensure that every effort is made to resolve an issue without going to court.

The best assurance for a fair hearing between the affected person or organisation and the CAD is a transparent technical appeal procedure which should be followed first before court action is considered by any of the parties. It should be noted that this procedure does not cover the normal day to day validity requirements such as, but not limited to, remaining in current maintenance practice, for which failure to comply automatically invalidates the HKAR-66 aircraft maintenance licence and HKAR-145 certification authorisation during the period of non-compliance.

It should be noted that the prosecution of licence holders, in terms of fines and custodial sentences, is a separate issue for the Hong Kong legislation and not part of this procedure.

1 Notification Procedure

- 1.1 When CAD has established evidence that meets the criteria of HKAR 66.65(b) and has determined the need for revocation or limitation of the HKAR-66 aircraft maintenance licence, a letter should be sent by a means that ensures delivery to the affected person informing that person about the intended action. The letter should clearly specify the evidence on which action is being taken, identify any intermediate actions, such as correspondence or meetings, taken by the CAD to resolve the issue, and, except where stated otherwise in paragraph 1.2, give 28 days notice of intent and advise of the right to appeal in accordance with HKAR 66.65(a)(1).
- 1.2 When CAD has established evidence that meets the criteria of HKAR 66.65(b) but also determines that it affected safe operation of the aircraft or could affect safe operation of the aircraft, then CAD may issue a letter to the affected person to immediately provisionally suspend the HKAR-66 aircraft maintenance licence pending 28 days notice to revoke or limit the licence. The letter should be sent by a means that ensures delivery to the affected person and contain the information stated in paragraph 1.1.
- 1.3 In the case of the CAD needing to direct the HKAR-145 approved maintenance organisation to revoke, suspend or limit the HKAR-145 certification authorisation, the procedure of paragraph 1.1 or 1.2 should be used as appropriate except that the HKAR-145 organisation should receive the letter with a copy sent to the affected person. Both the HKAR-145 organisation and the affected person should be given the right to appeal in accordance with HKAR 66.65(a)(1).
- 1.4 If the affected person or organisation decides to appeal against the decision of the CAD, they should submit such request for appeal in writing to CAD within the 28 day period stating the reasons why they believe CAD is wrong to proceed with its proposed decision. In this case, CAD should proceed in accordance with paragraph 2.
- 1.5 If the affected person or organisation decides not to appeal, then CAD should proceed by confirming the revocation or limitation in writing and request that the original HKAR-66 aircraft maintenance licence be returned to CAD or the original HKAR-145 certification authorisation be returned to the HKAR-145 organisation, whichever is appropriate.

2 The 28 Day Appeal Procedure

- 2.1 On receipt of a written request for an appeal, CAD should form an Appeal Board consisting of at least 2 persons from the CAD to hear the arguments presented by both the affected person and/or organisation and the involved CAD staff.
- 2.2 The 2 or more persons forming the Appeal Board should be persons who were not involved in any way with the decision to proceed with revocation etc., and should hold management positions in the CAD such that their decision is accountable and binding on the CAD.
- 2.3 The Appeal Board should be prepared to meet within 28 days of receiving the written request for appeal or it may delay the appeal hearing to a later date at the request of the affected person or organisation, subject to the CAD being given not less than 14 days notice of the proposed delayed date by the affected person and the appeal process being completed within 56 days of the issue date of the original letter specifying the intent to revoke or limit the licence.
- 2.4 At the appeal hearing, the affected party and the involved staff of CAD should each present arguments to support their case to the Appeal Board and be prepared to answer questions and provide evidence to each other and the Board under the direction of the Board.
- 2.5 At the conclusion of the appeal hearing the Appeal Board should rule on the appeal in writing stating the reason for its decision.
- 2.6 If the affected person or organisation is not satisfied with the Appeal Board decision, they will need to use the legal process to proceed further to court. However, the affected person or organisation should be aware that CAD will act upon the decision of the Appeal Board until such time as the relevant court rules otherwise.

CHAPTER 26

IMPLEMENTATION POLICY FOR HKAR-147 APPROVED
MAINTENANCE TRAINING

- 1 HKAR-147 is a requirement that addresses the approval of maintenance training organisations, the approval of basic training courses and aircraft type training courses specified in HKAR-66. HKAR-147 provides the basis for training to achieve the standard specified in HKAR-66.
- 2 HKAR-147 is the standard for conducting basic training course where an applicant wishes to claim the maximum reduction in total experience as specified in HKAR 66.30 and AMC 66.30(a). Notwithstanding the fact that the HKAR-66 requirements cater for the basic category/sub-category self study candidates, it is the policy of the Director-General to actively promote the use of maintenance training to qualify aircraft maintenance personnel and that such training be conducted by an appropriately approved HKAR-147 maintenance training organisation.
- 3 A maintenance training organisation may be approved in accordance with HKAR-147 to conduct basic training only, aircraft type training only or both.
- 4 A maintenance training organisation for the above purpose may take the form of a training department in a HKAR-145 approved maintenance organisation. It will need to hold a HKAR-147 approval to be recognised.
5. A HKAR-147 approved maintenance training organisation may also be recognised by the Director-General within the scope of approval to conduct examinations to the standard of HKAR-66 using the criteria of Chapter 23 of HKAR-2.
6. Maintenance training organisations approved to HKAR-147 are listed on the CAD website: <http://cad.gov.hk> under "Publications and press release".
- 7 The Director-General may request or approve a HKAR-147 approved maintenance training organisation to conduct examinations for candidates who do not undergo training at the organisation.

CHAPTER 27

**PROCEDURES FOR THE 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 what needs to be done for HKAR-147 approval. It is not intended to establish compliance by the meeting but rather to see if the activity is a HKAR-147 activity.
- 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 an audit of the organisation's training facilities requiring HKAR-147 approval and examine the proposed maintenance training organisation exposition (hereinafter referred to as "MTOE").
- 1.5 The Director-General will determine how the audit will be conducted. For example, if the organisation is a large training organisation, it will be necessary to determine whether one large team audit or a short series of small team audits or a long series of single person audits is most appropriate for the particular situation. A further consideration in the case of a combined HKAR-145/147 organisation is the possibility to combine the audits.
- 1.6 Audit will be conducted on the basis of checking the facility for compliance, interviewing the senior personnel and sitting in on any relevant training course to sample the course for its conduct and standard.

- 1.7 The Director-General may not necessary sample all basic and type training courses that have to be approved, but it will be necessary to sample, as appropriate, one basic and one type training course for as long as is necessary to establish that training is conducted in a professional manner. 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.
- 1.8 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.
- 1.9 The examination standards will be audited to ensure compliance with Chapter 23 of HKAR-2.

Where the organisation intends to conduct basic training and examination, a sample of HKAR-66 examination questions must be submitted in accordance with Appendix 1 to this Chapter. The purpose of this submission is that the Director-General can check that the above mentioned Chapter 23 of HKAR-2 and Appendix 1 to HKAR-66 are complied with so that he can be satisfied that the HKAR-66 examination standard is understood. 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. For this purpose, an English copy of the questions must be submitted.

- 1.10 The procedures for the control of examinations will be reviewed with care to ensure that candidates are not aware of the actual questions before the examination and that the examination is conducted in a professional manner. The Director-General may not necessary to sample all examinations associated with a training course, but it will be necessary to sample, as appropriate, one basic and one type training course examination to a depth necessary to establish that examinations are conducted in a professional manner, except that the minimum

sample will consist of monitoring the start and end activities of the examination and a representative period during the examination. 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.

- 1.11 The accountable manager of the organisation has to be seen at least once during the audit for approval to ensure that he or she fully understands the significance of approval and the reason for signing the MTOE Part 1.1 commitment of the organisation to comply with the procedures specified in the MTOE. Of critical importance is the need for the accountable manager to be aware that failure to conduct examinations in a professional manner will result in loss of approval.
- 1.12 CAD Form Four are to be completed for each person nominated to hold a position required by HKAR 147.105(a) and (b) and for each examiner and practical assessor nominated in accordance with HKAR 147.105(g).
- 1.13 Apart from needing to ensure that the MTOE addresses the subject headings listed in HKAR-147, the organisation should write the exposition to reflect the actual procedures of the organisation. The Director-General will establish that the procedures specified in the MTOE are in compliance with the intent of HKAR-147 and then to establish if these are the same procedures intended for use within the organisation's training facility.
- 1.14 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 visit on the findings and as well the observations made during the audit.
- 1.15 All findings identified during an audit visit will be confirmed in writing to the organisation within two weeks of the audit visit without specifying the category of each finding.

- 1.16 Further to paragraph 1.15 there will be occasions when the Director-General may find situations in the organisation on which he is unsure about compliance. In this case, the organisation will be informed about possible non-compliance at the time of audit and the fact that the situation will be reviewed by the Director-General before a decision is made. The organisation will be informed of the decision within two weeks of the audit visit in writing if the decision is a confirmation of non-compliance. If the decision is a finding of being in compliance then a verbal confirmation will be made to the organisation.
- 1.17 All confirmed findings must be rectified by the organisation to the satisfaction of the Director-General before a HKAR-147 approval can be issued.
- 1.18 When satisfied with the above, the Director-General will issue a CAD Form Three Approval Certificate for a limited time period of two years.

2 Variation of a HKAR-147 approval

- 2.1 Variation of the HKAR-147 approval means either the need to amend the schedule of approved training courses or the need to approve or accept HKAR 147.150 changes. The following paragraphs address the different scenarios involving variation.
- 2.2 A change of name of a HKAR-147 approved maintenance training organisation requires the organisation to submit a new application, on CAD Form Twelve, as a matter of urgency stating that only the name of the organisation has changed including a copy of the MTOE with the new name. On receipt of the CAD Form Twelve and the MTOE for a name change, the Director-General will reissue the CAD Form Three Approval Certificate 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 HKAR-147 approved maintenance training organisation have changed.
- 2.3 A change of accountable manager requires the HKAR-147 approved maintenance training organisation to submit such fact to the Director-General as a matter of extreme urgency. The CAD Form Four should

be used for this purpose. The Director-General will normally accept the accountable manager and will issue a letter of acceptance to include a request for an urgent amendment to the MTOE accountable manager exposition statement. It is essential that the new accountable manager signs the MTOE statement of commitment to comply with HKAR-147 as a matter of extreme urgency as the approval is technically invalidated by a change of accountable manager until the new accountable manager has been accepted by the Director-General.

- 2.4 A change of any of the senior personnel specified in HKAR 147.105(b) or the examination staff in HKAR 147.105(g) requires the HKAR-147 approved maintenance training 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, the Director-General will indicate acceptance in writing to the HKAR-147 approved maintenance training organisation with the CAD Form Four endorsed. In addition, an authorisation certificate will be issued to the authorised examiner/practical assessor.
- 2.5 A change in the HKAR-147 approved MTOE should follow the procedure specified in the MTOE.
- 2.6 Any change of location of the HKAR-147 approved maintenance training organisation requires the organisation to make 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 CAD Form Three Approval Certificate valid for a two year period.

It should be noted that HKAR 147.145(c) provides for the conduct of training courses and associated examinations at locations other than at the HKAR-147 approved maintenance training organisation location and this aspect is covered in paragraph 1.8.

2.7 The complete or partial re-organisation of a HKAR-147 approved maintenance training organisation will require the re-audit of those elements that have changed.

2.8 Any additional basic or aircraft type training courses requires the HKAR-147 approved maintenance training 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 the Appendix 1 to this Chapter. The Director-General will follow the procedure of paragraph 1 in so far as the change affects such procedures unless the Director-General is satisfied that the HKAR-147 approved maintenance training organisation has a well controlled procedure to qualify such change when it is not necessary to conduct the audit elements of the paragraph 1 procedure.

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, three 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.

4 **HKAR-147 findings and observations**

4.1 Findings are categorised into two groups as follows of which level 1 represents major non-compliance, level 2 represents minor non-compliance

4.2 Observations represents in-compliance background information observations rather than findings.

4.3 A level 1 finding includes one or more of the following: any significant non-compliance with the examination process which would invalidate

the examination(s), including where appropriate the adequacy of question samples submitted to satisfy the examination standard in paragraphs 1.9 and 2.8; failure to give the Director-General access to the HKAR-147 approved maintenance training organisation facilities during normal operating hours after two written requests; the lack of an accountable manager; and a significant non-compliance with the training process.

4.4 In the case of a level 1 finding, the Director-General will give notice in accordance with HKAR 147.405 to revoke or vary the HKAR-147 approval in whole or in part depending upon the extent of the level 1 finding unless timely rectification action has been taken to the satisfaction of the Director-General. Failure to complete the rectification of any level 1 finding within three days of written notification means the Director-General will need to proceed with revocation of the HKAR-147 approval in whole or in part. Chapter 29 of HKAR-2 specifies the procedure associated with HKAR 147.405.

4.5 A level 2 finding is any non-compliance with the training process other than level 1 findings.

4.6 In the case of a level 2 finding, the Director-General may give up to six months notice of the need for rectification. The initial notification will be of three months duration to the HKAR-147 quality manager followed by the final three months notice to the accountable manager.

Dependant upon the seriousness of the level 2 finding(s) the Director-General may choose a notice period less than six months, but in no case less than two months. Failure to complete the rectification of a level 2 finding within the time period set by the Director-General will lead to revocation of the HKAR-147 approval in whole or in part depending upon the extent of the level 2 finding(s) using the procedure specified in Chapter 29 of HKAR-2.

4.7 An observation is a means intended to give background information. It will not include information suggesting non-compliance with HKAR-147.

Appendix 1

Number of HKAR-66 examination questions to be submitted under paragraphs 1.9 and 2.8:

Title	A	B1	B2	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	-	-	13	13
Module 14	-	-	3	3
Module 15	6	9	-	15
Module 16	5	7	-	12
Module 17	2	3	-	5
Total	61	86	60	207

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 as far as possible spread equally across the respective subjects and topics within the Module and at the relevant knowledge levels. It should be noted that additional questions may be required to be submitted should the sample be too narrow or the questions be deemed to be at an inappropriate level.

CHAPTER 28

HKAR-147 TRAINING COURSE STANDARDS

Introduction

HKAR-66 specifies the level of knowledge required to be demonstrated by examination and therefore this chapter 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 HKAR-66 Section 2 Appendix 1 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 1 to show the minimum knowledge and practical training hours for category B1, B2 and A1.1.

This chapter should be read in conjunction with HKAR-66 Section 2, Appendix 1 and HKAR 147.200 and Chapter 23 of HKAR-2.

The following pages use the HKAR-66 Section 2 Appendix 1 references for ease of use.

MODULE 1. MATHEMATICS**1.1 Arithmetic**

Level 1 - Basic knowledge of and ability to make simple calculations

Level 2 - General knowledge of and ability to make calculations

1.2 Algebra

Level 1 - Basic knowledge of and ability to give simple descriptions

Level 2 - General knowledge of and ability to make simple calculations

1.3 Geometry

Level 1 - Basic knowledge of and ability to give simple descriptions

Level 2 - General knowledge of and ability to draw graphs and read graphs/tables

MODULE 2. PHYSICS**2.0 Units**

Levels all - Detailed knowledge and ability to convert

2.1 Matter

Level 1 - Basic knowledge of and ability to give simple description

2.2 Mechanics

Level 1 - Basic knowledge of and ability to give simple description using examples

Level 2 - General knowledge of and ability to give succinct description using examples

2.3 Thermodynamics

Level 2 - General knowledge of and ability to give succinct description using examples.

2.4 Optics (Light)

Level 2 - General knowledge of and ability to give succinct description using examples.

2.5 Wave Motion and Sound

Level 2 - General knowledge of and ability to give succinct description using examples.

MODULE 3. ELECTRICAL FUNDAMENTALS

Level 1 - Basic knowledge of and ability to give a simple description

Level 2 - General knowledge of and ability to both give a succinct description and, where highlighted, calculate

MODULE 4. ELECTRONIC FUNDAMENTALS

Level 1 - Basic knowledge of and ability to give a simple description

Level 2 - General knowledge of and ability to give a succinct description

MODULE 5. DIGITAL TECHNIQUES & ELECTRONIC INSTRUMENT SYSTEMS

Level 1 - Basic knowledge of and ability to give a simple description

Level 2 - General knowledge of and ability to both give a succinct description and, where highlighted, interpret diagrams

Level 3 - Detailed knowledge of and ability to give an in depth description

MODULE 6. MATERIALS AND HARDWARE

Level 1 - Basic knowledge of and ability to give a simple description

Level 2 - General knowledge of and ability to give a succinct description

Level 3 - Detailed knowledge of and ability to give an in depth description

MODULE 7. MAINTENANCE PRACTICES

Level 1 - Basic knowledge of and ability to both give a simple description of and, where highlighted, operate, inspect, calculate or test.

Level 2 - General knowledge of and ability to both give a succinct description of and, where highlighted, operate, inspect, calculate or test.

Level 3 - Detailed knowledge of and ability to both give an in depth description of and, where highlighted, operate, inspect, calculate or test.

MODULE 8. BASIC AERODYNAMICS

- Level 1 - Basic knowledge of and ability to give a simple description
- Level 2 - General knowledge of and ability to give a succinct description.

MODULE 9. HUMAN FACTORS

- Level 1 - Basic knowledge of and ability to give a simple description using examples to illustrate significance and limitations
- Level 2 - General knowledge of and ability to give a succinct description using examples to illustrate significance and limitations.

MODULE 10. AVIATION LEGISLATION

- Level 1 - Basic knowledge of and ability to give a simple description
- Level 2 - General knowledge of and ability to give a succinct description.

MODULE 11. AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

- Level 1 - Basic knowledge of and ability to give a simple description
- Level 2 - General knowledge of and ability to give a succinct description.
- Level 3 - Detailed knowledge of and ability to give an in depth description.

MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS

- Level 1 - Basic knowledge of and ability to give a simple description
- Level 2 - General knowledge of and ability to give a succinct description.
- Level 3 - Detailed knowledge of and ability to give an in depth description.

MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS

- Level 1 - Basic knowledge of and ability to give a simple description
- Level 2 - General knowledge of and ability to give a succinct description.
- Level 3 - Detailed knowledge of and ability to give an in depth description.

MODULE 14. PROPULSION

- Level 1 - Basic knowledge of and ability to give a simple description
- Level 2 - General knowledge of and ability to give a succinct description.

MODULE 15. GAS TURBINE ENGINE

- Level 1 - Basic knowledge of and ability to give both a simple description and, where highlighted, inspect.
- Level 2 - General knowledge of and ability to give a succinct description.
- Level 3 - Detailed knowledge of and ability to give both an in depth description and, where highlighted, inspect, interpret and trend monitor.

MODULE 16. PISTON ENGINE

- Level 1 - Basic knowledge of and ability to both give a simple description and, where highlighted, inspect.
- Level 2 - General knowledge of and ability to both give a succinct description and, where highlighted, measure, calculate, interpret and inspect.
- Level 3 - Detailed knowledge of and ability to both give an in depth description and, where highlighted, measure, calculate, interpret and inspect.

MODULE 17. PROPELLER

- Level 1 - Basic knowledge of and ability to both give a simple description and, where highlighted, assess.
- Level 2 - General knowledge of and ability to give a succinct description.
- Level 3 - Detailed knowledge of and ability to both give an in depth description and, where highlighted, assess, balance and track.

MODULE 19. WOODEN AEROPLANES

- Level 2 - General knowledge of and ability to give a succinct description.

APPENDIX 1

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	370	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	1203 hr	255 hr

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

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

CHAPTER 29

**PROCEDURES FOR THE REVOCATION OR LIMITATION OF
A HKAR-147 APPROVAL****Introduction**

The revocation or limitation of a HKAR-147 maintenance training organisation approval is a decision for the Director-General.

The revocation or limitation of a HKAR-147 maintenance training organisation approval will be in accordance with the Air Navigation (Hong Kong) Order 1995 as amended and therefore follow Hong Kong legal practices.

Having stated this, however, there are a number of good reasons to first ensure that all reasonable actions have been thoroughly carried out to establish the facts and circumstances of the particular issue. The reasons include the need for all parties to be given a fair hearing before confirming the Director-General's action. It is also common sense to ensure that every effort is made to resolve an issue without going to court.

The best assurance for a fair hearing between the affected organisation and the Director-General is a transparent technical appeal procedure which should be followed first before court action is considered by any of the parties.

1 Notification Procedure

1.1 When the Director-General has established evidence that meets the criteria of HKAR 147.405 in that there are one or more level 1 findings or outstanding level 2 findings have exceeded the time period permitted for rectification and has therefore determined the need for revocation or limitation of the HKAR-147 maintenance training organisation approval, a letter will be sent by a means that ensures delivery to the affected HKAR-147 approved maintenance training organisation informing that organisation about the intended action. The letter will clearly specify the evidence on which revocation or limitation action is being taken, identify any intermediate actions, such as correspondence or meetings, taken by the Director-General to

resolve the issue, and, give 28 days notice of intent to revoke or limit the HKAR-147 approval and advise of the right to appeal in accordance with HKAR 147.405(a)(1).

- 1.2 If the affected HKAR-147 approved maintenance training organisation decides to appeal against the decision of the Director-General, the organisation must submit such request for appeal in writing to the Director-General within the 28 day period stating the reasons why the organisation believes the Director-General is wrong to proceed with his proposed decision. In this case, the Director-General will proceed in accordance with paragraph 2.
- 1.3 If the affected HKAR-147 approved maintenance training organisation decides not to appeal, then, after the 28 days notice has expired by at least 7 days, the Director-General will proceed by confirming the revocation or limitation in writing and request that the original CAD Form Eleven HKAR-147 approval certificate, be returned.

2 The 28 Day Appeal Procedure

- 2.1 On receipt of a written request for an appeal, the Director-General will form an Appeal Board consisting of at least two persons from the Civil Aviation Department (CAD) to hear the arguments presented by both the affected HKAR-147 approved maintenance training organisation and the involved CAD staff.
- 2.2 The two or more persons forming the Appeal Board will be persons who were not involved in any way with the decision to proceed with revocation etc., and hold management positions in the CAD such that their decision is accountable and binding on the CAD.
- 2.3 The Appeal Board will be prepared to meet within 28 days of receiving the written request for appeal or it may delay the appeal hearing to a later date at the request of the affected HKAR-147 approved maintenance training organisation, subject to the Director-General being given not less than 14 days notice of the proposed delayed date by the affected party and the appeal process being completed within 56 days of the issue date of the original letter specifying the intent to revoke or limit the approval.

Where the Director-General is satisfied that the affected HKAR-147 approved maintenance training organisation, having appealed, is simply trying to delay the process rather than resolve the issues, he will complete the revocation or limitation action within 56 days of the issue date of original letter specifying the intent to revoke or limit the approval.

- 2.4 At the appeal hearing, the affected HKAR-147 approved maintenance training organisation and the involved CAD staff should each present arguments to support their case to the Appeal Board and be prepared to answer questions and provide evidence to each other and the Appeal Board under the direction of the Appeal Board.
- 2.5 At the conclusion of the appeal hearing the Appeal Board will rule on the appeal in writing stating the reason for its decision.
- 2.6 If the affected organisation is not satisfied with the Appeal Board decision, they may need to use the legal process to proceed further to court. However, the affected organisation should be aware that the Director-General will act upon the decision of the Appeal Board until such time as the relevant court rules otherwise.

CHAPTER 30**GUIDANCE FOR HKAR-147 AUTHORISED EXAMINER****1 Introduction**

- 1.1 This document is intended to provide guidance to all HKAR-147 Authorised Examiners responsible for the conduct of knowledge examination and practical assessment (examination and assessment) as required by HKAR-147 Approved Maintenance Training/Examination (HKAR-147). It outlines the roles, responsibility, selection criteria of Authorised Examiner, and stipulates procedures to be followed and standards to be applied when conducting examination and assessment in support of an application to the Civil Aviation Department (CAD) for the issue of HKAR-66 Aircraft Maintenance Licence (AML) in accordance with Article 12 of Air Navigation (Hong Kong) Order 1995 (AN(HK)O).
- 1.2 Authorised Examiners 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 An Authorised Examiner 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.
- 1.4 Throughout this document, the pronoun in the male gender shall be construed to also include the female gender.

2 The Examination and Assessment

- 2.1 Article 12 of AN(HK)O states that the Chief Executive shall grant aircraft maintenance licence, subject to such conditions as he thinks fit, upon his being satisfied that the applicant is a fit person to hold the licence and has furnished such evidence and passed such examinations and tests as the Chief Executive may require of him for the purpose of establishing that he has sufficient knowledge, experience, competence and skill in aeronautical engineering.
- 2.2 Hong Kong Aviation Requirements HKAR-66 is published to provide a standard for the grant of the licence issued under Article 12 of AN(HK)O. Furthermore, Hong Kong Aviation Requirements HKAR-147 is also published to provide a standard for the conduct of training course as a means to fulfill the requirements of HKAR-66.

- 2.3 HKAR-147 requires an AMTO to contract sufficient Knowledge Examiners to conduct knowledge examination and Practical Assessors to conduct practical assessment of its students as part of the approved training course. The Knowledge Examiners and Practical Assessors of the AMTO, collectively referred to as Authorised Examiners in this document, must be acceptable to the Director-General of Civil Aviation (Director-General).
- 2.4 An Authorised Examiner has to ensure the examinations and assessments are performed in a way that the students are competent to maintain operating aircraft with a responsible attitude in respect of flight safety and airworthiness of the aircraft if they can pass the examinations and assessments.
- 2.5 Upon satisfactory completion of the approved training course, a Certificate of Recognition will be issued to the students. Holders of this certificate who met the knowledge and experience requirements as stated in HKAR-66 can apply to the Director-General for the granting of an AML of appropriate category and/or type rating endorsement with certain privileges as specified at the time of licence application.
- 2.6 For Approved Basic Training Course, the examination and assessment must be conducted in accordance with HKAR 147.130, HKAR 147.135, HKAR 147.205, and HKAR 147.210, and to a standard as specified in HKAR 66.25 and HKAR 66.30 requirements.
- 2.7 For Approved Aircraft Type Training Course, the examination and assessment must be conducted in accordance with HKAR 147.300 and HKAR 147.305 in order to fulfill HKAR 66.45 requirement.

3 Authorised Examiners

3.1 The Role and General Consideration

An Authorised Examiner must remember that he is administering the examinations and assessments in the interest of public safety. The Authorised Examiner 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 the Authorised Examiner is satisfied that the students are competent to maintain operating aircraft with a responsible attitude in respect to flight safety and airworthiness of the aircraft, he will furnish the required documents to support the issue of the Certificate of Recognition to the students.

3.2 Authority of Authorised Examiner

The scope of authority of an Authorised Examiner to conduct examinations must be explicitly stated in the MTOE. This authority of an Authorised Examiner relates to the following examination and assessment:

- Basic knowledge examinations as required by HKAR 147.205.
- Basic practical assessment as required by HKAR 147.210.
- Aircraft type examination as required by HKAR 147.305.
- Aircraft type / task assessment as required by HKAR 147.305.

Examination and assessment must be carried out to the standards set out in respective HKAR-147 requirements and the MTOE. If an Authorised Examiner whose performance is considered not meeting the required standards, the relevant AMTO should suspend the authority of the Authorised Examiner and report to the Director-General any subsequent investigation. The Authorised Examiner authority should not be resumed until all corrective actions have been implemented and accepted by the Director-General.

3.3 Personnel Requirements of Authorised Examiner

Minimum qualifications of an Authorised Examiner relevant to the scope of authority including classes, ratings and limitations must be stated in the MTOE for the acceptance by the Director-General.

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

For practical assessment, a Practical Assessor should possess appropriate practical skill and work experience, such as AML or equivalent encompass the scope of his authority, 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 authority appropriate to the aircraft type.

Candidate to be nominated as an Authorised Examiner should be trained and assessed according to a programme as stated in the MTOE.

Authorised Examiners should be employed at a position within the AMTO compatible with the responsibilities involved and acceptable to the Director-General.

3.4 Acceptance of an Authorised Examiner

The AMTO should submit duly completed CAD Form Four together with records of training and assessment for Authorised Examiner nominee to the Director-General for acceptance.

3.5 Updating Training of Examiner Authorisation

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

A Knowledge Examiner is required to exercise the duty of managing at least one examination within the scope he is authorised in every 24 months.

A Practical Assessor is required to conduct at least one assessment within the scope he is authorised in every 24 months.

AMTO should suspend the authority of an Authorised Examiner who fails to meet the above minimum requirements. The Authorised Examiner authority should not be resumed until all corrective actions have been implemented and accepted by the Director-General.

3.6 Record of Examination and Assessment

Authorised Examiners 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 an Authorised Examiner keeps 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.

3.7 Code of Conduct

Authorised Examiners 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.

4 Knowledge Examination

4.1 Examination System

The format of the examination should follow the requirements and guidance as stipulated in HKAR-66, HKAR-147 and HKAR-2 where appropriate. An Authorised Examiner, hereby referred to as 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 a Knowledge Examiner.

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.

4.2 Responsibility of Knowledge Examiner

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 the Knowledge Examiner should have direct access to ensure their quality, standard and security fulfill the HKAR-66 and HKAR-147 requirements.

4.3 Misconduct of Personnel

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 must be disqualified from passing the examination. He should not be allowed to take any examination for at least 12 months after the date of the incident.

Any person involved in the examination system found during a knowledge examination to be providing question answers to any student being examined must be removed from any duty relevant to the examination system and the result of the examination declared void. If this person is an Authorised

Examiner, his Examiner Authorisation will be suspended or revoked.

4.4 **Records**

A Knowledge Examiner should ensure the AMTO maintain records of all examinations under his responsible area as defined in the scope of his authority in accordance with the MTOE procedure. These records will contribute to the issue of the Certificate of Recognition to students who have successfully completed the required examination of an approved training course.

5 **Practical Assessment**

5.1 **Practical Assessment System**

Practical assessment should follow the requirements and guidance as stipulated in HKAR-66, HKAR-147 and HKAR-2 where appropriate. An Authorised Examiner, hereby referred to as 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 the Practical Assessor that a student has covered the required scope of practical training, Practical Assessor 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.

5.2 **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. The Practical Assessor 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, the Practical Assessor 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.

5.3 Standard of Assessment

The Practical Assessor 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. The Practical Assessor also has 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. The Practical Assessor 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 Assessor 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.

5.4 Records

A Practical Assessor should ensure the AMTO maintain records of all assessments under his responsible area as defined in the scope of his authority in accordance with the MTOE procedure. These records will contribute to the issue of the Certificate of Recognition to students who have successfully completed the required assessment of an approved training course.

CHAPTER 31

USE AND INSTRUCTIONS FOR THE COMPLETION OF THE AUTHORISED
RELEASE CERTIFICATE (CAD FORM ONE)**1 Introduction**

This document is provided as a general guide to the Authorised Release Certificate ('CAD Form One', of form number DCA 1) (hereinafter referred as 'Certificate') required by HKAR-1, HKAR-21 and HKAR-145.

2 Purpose and Scope

2.1 This document relates to the use of the Certificate for release of:

- 'New' parts, i.e. parts which have not previously been used in operational service.
- 'Used' parts, i.e. parts which have been used in operational service.

2.2 The purpose of the Certificate is to identify the conformity or airworthiness, and eligibility status of products / appliances / parts / components / assemblies (hereafter referred to as 'item(s)') after manufacture in accordance with HKAR-1 and HKAR-21 or after maintenance in accordance with HKAR-145.

2.3 The Certificate is to be used for export/import purposes, as well as for domestic purposes, and serves as an official certificate for the release of parts from the manufacturer or maintenance organisation to users. The certificate is not a delivery or shipping note.

2.4 The Certificate may only be issued by Hong Kong Parts Manufacturer Approval (HPMA) holders, production organisations, maintenance organisations or persons approved by the Director-General within the scope of such an Approval.

2.5 Complete aircraft are not to be released using the Certificate.

2.6 The Certificate does not constitute approval to install the item on a particular aircraft, engine, or propeller but helps the end user to determine the item's airworthiness approval status.

- 2.7 A mixture of 'New' and 'Used' item(s) is not permitted on the same Certificate.
- 2.8 For new item, a mixture of certification in conformity with 'approved data' and to 'non-approved data' is not permitted on the same Certificate.

3 General

- 3.1 The Certificate shall comply with the format attached including block numbers, in that each block must be located as per the layout. The size of each block may however be varied to suit the individual application, but not to the extent that would make the Certificate unrecognisable. The overall size of the Certificate may be significantly increased or decreased so long as the Certificate remains recognisable and legible.

NOTE: The User responsibility statements are normally placed on the reverse of the Certificate, but they may be added to the front of the Certificate by reducing the depth of the form.

- 3.2 All printing shall be clear and legible to permit easy reading.
- 3.3 The Certificate shall either be pre-printed or computer generated but in either case the printing of lines and characters must be clear and legible. Pre-printed wording is permitted in accordance with the attached example but no other certification statements are permitted.
- 3.4 Completion of the Certificate shall be in English.
- 3.5 The details to be entered on the Certificate can be either machine/computer printed or hand-written using block letters and must permit easy reading.
- 3.6 Abbreviations must be restricted to a minimum.
- 3.7 The space remaining on the reverse side of the Certificate may be used by the originator for any additional information but must not include any certification statement.
- 3.8 The Certificate must accompany the item, and correlation must be established between the Certificate and the item. A copy of the Certificate must be retained by the organisation that manufactured or maintained the item. Where the Certificate format and data are entirely computer generated, subject to acceptance by the Director-General, it is permissible to retain the Certificate format and data on a secure database.

- 3.9 Where a single Certificate was used to release a number of items and those items are subsequently separated out from each other, such as through a parts distributor, then a copy of the Certificate must accompany such items and the Certificate must be retained by the organisation that received the batch of items. Failure to retain the Certificate could invalidate the release status of the items.

NOTE: There is no restriction in the number of copies of the Certificate sent to the customer or retained by the originator.

- 3.10 The Certificate that accompanies the item(s) may be attached to the item(s) by being placed in an envelope for durability.

4 Completion of the Release Certificate by the Originator

Except as otherwise stated, there must be an entry in all blocks to make the document a valid Certificate.

Block 1 Pre-printed
'CIVIL AVIATION DEPARTMENT'
HONG KONG, CHINA'.

Block 2 Pre-printed
'AUTHORISED RELEASE CERTIFICATE
CAD FORM ONE'.

Block 3 A unique number shall be pre-printed in this block for Certificate control and traceability purposes except that in the case of a computer generated document, the unique number need not be pre-printed where the computer is programmed to produce the number.

Block 4 The full name and address plus mailing address if different to the approved organisation releasing the item(s) covered by this Certificate. This block may be pre-printed. Logos, etc., are permitted if they can be contained within the block.

Block 5 Its purpose is to reference work order/contract/invoice or any other internal organisational process such that a fast traceability system can be established. If none of these are applicable, enter 'N/A'.

Block 6 The block is provided for the convenience of the organisation issuing the Certificate to permit easy cross-reference to the 'Remarks' Block 12 by the use of item numbers.

This block must be completed where there is more than one line item and reference to the items is made in other blocks.

Where a number of items are to be released on the Certificate, it is permissible to use a separate listing cross-reference to the details entered in Blocks 6 to 12 of the Certificate.

- Block 7** The name or description of the item shall be given. Preference shall be given to the term used in the Instructions for Continued Airworthiness (e.g. Illustrated Parts Catalogue, Aircraft Maintenance Manual, Service Bulletin, etc.).
- Block 8** State the Part Number. In case of multiple items, enter the Part Number for each item number listed in Block 6.
- Block 9** State the quantity of item(s) being released. In case of multiple items, enter the quantity of each item number listed in Block 6.
- Block 10** State the item Serial Number and/or Batch Number if applicable, if neither is applicable, state 'N/A'.
- Block 11** The following words in quotation marks, with their definitions, indicate the status of the item being released. One or a combination of these words shall be stated in this block:

STANDARD WORDS FOR NEW ITEMS

1 'MANUFACTURED'

- (a) The production of a new item in conformity with the applicable design data, or
- (b) Re-certification by the original manufacturer after rectification work on an item, previously released under 1(a) above, which has been found to be unserviceable prior to entry into service, e.g. defective, in need of inspection or test, or shelf life expired. Details of the original release and the rectification work are to be entered in Block 12.

2 'INSPECTED'/'TESTED'

The examination of a previously released new item;

- (a) to establish conformity with the applicable design data; or
- (b) in accordance with a customer-specified standard or specification, details of which are to be entered in Block 12; or
- (c) to establish serviceability, and condition for safe operation, prior to re-release as a spare, where the item has been obtained with a CAD Form One. An explanation of the basis of release, and details of the original release, are to be entered in Block 12.

3 'MODIFIED'

The alteration, by the original manufacturer, of a previously released item prior to entry into service. Details of the alteration and the original release are to be entered in Block 12.

NOTE: The above statements shall be supported by reference to the approved data/manual/specification. Such information shall be identified in Block 12.

STANDARD WORDS FOR USED ITEMS

1 'OVERHAULED'

The restoration of a used item by inspection, test and replacement in conformity with an approved standard* to extend the operational life.

2 'INSPECTED'/'TESTED'

The examination/test of an item to establish conformity with an approved standard*.

3 'MODIFIED'

The alteration of an item in conformity with an approved standard*.

4 'REPAIRED'

The restoration of an item to a serviceable condition in conformity with an approved standard*.

5 'RETREADED'

The restoration of a used tyre in conformity with an approved standard*.

6 'REASSEMBLED'

The reassembly of an item in conformity with an approved standard*.

Example: A propeller after transportation.

NOTE: This provision shall only be used in respect of items which were originally fully assembled by the manufacturer in accordance with manufacturing requirements.

*Approved Standard means a manufacturing/design/maintenance/quality standard approved by the Director-General.

The above statements shall be supported by reference in Block 12 to the approved data/manual/specification used during maintenance.

Block 12 It is mandatory to state any information in this block either directly or by reference to supporting documentation, that identifies particular data or limitations relating to the item(s) being released that are necessary for the User/Installer to make the final airworthiness determination of the item(s). The information shall be clear, complete, and provided in a form and manner which is adequate for the purpose of making such a determination.

Each statement must be clearly identified as to which item it relates.

If there is no statement, state 'None'.

Examples of conditions which would necessitate statements in Block 12 are:

FOR NEW ITEMS

- When the Certificate is used for Conformity purposes the following statement must be entered at the beginning of Block 12:

‘ONLY FOR CONFORMITY, NOT ELIGIBLE FOR INSTALLATION ON IN-SERVICE TYPE-CERTIFICATED AIRCRAFT/ENGINE/PROPELLER’.

- When the design data is not approved by the Director-General, then the competent authority of a third country responsible for the approval of the design data must be identified and the following statement must be entered together with a reference identifying the approval:

‘Design data approved by <identify the responsible competent authority of a third country and the approval reference>’.

- Re-certification of new items from Conformity purpose to airworthiness purpose at the time of approval of the applicable design data, provided that the items conform to the approved design data.

Provided that no change in design has occurred during the design data approval process, the manufacturer may state that the design data has been approved and that provided the specific component is still in the condition it was when it was shipped to the user/installer, the component is now eligible to be installed. The manufacturer must make this statement on a second CAD Form One where in addition to any other necessary remarks, appropriate explanatory information must be provided.

The following wording must be used:

‘RE-CERTIFICATION OF NEW PARTS FROM CONFORMITY TO AIRWORTHINESS: THIS DOCUMENT ONLY CERTIFIES THE APPROVAL OF THE DESIGN DATA TO WHICH THIS ITEM (THESE ITEMS) WERE MANUFACTURED, BUT DOES NOT COVER CONFORMITY/CONDITION AFTER RELEASE OF THE INITIAL CAD FORM ONE REF’.

CAD Form One (both for ‘Conformity purposes’ and for ‘Airworthiness purposes’) must be generated by the same organisation, i.e., the original manufacturer or prime manufacturer, whichever raised the original CAD Form One for Conformity purposes.

- For complete engines and propellers, the applicable type certificate must be referenced.
- For complete engines and propellers, any additional export statement required by the importing country, as normally defined in the type

certificate data sheet.

- For complete engines, a statement of compliance with the applicable emissions requirements current at the date of manufacture of the engine.
- For Hong Kong Technical Standard Order (HTSO) articles, state the applicable HTSO authorisation number.
- For HPMA parts, state the applicable HPMA Supplement number and state whether the HPMA parts are 'critical' or 'non-critical'.
- Usage restriction for repaired items.
- Modification standard.
- Alternative approved items supplied.
- Concessions applicable.
- Non-compliance with Certification Specification.
- Details of repair work carried out (or found carried out) or reference to a document where this is stated.
- Compliance with or non-compliance with Airworthiness Directive's or Service Bulletins.
- Information on life limited items.
- Condition of items or reference to a document detailing this information.
- Manufacturing date or cure date.
- Shelf life data.
- Shortages.
- Exceptions to the notified special requirements of the importing country.
- Specially configured to meet the notified special requirements of the importing country.

- Re-certification of previously released 'new' items.

FOR USED ITEMS

- The identity and issue of maintenance documentation used as the approved standard.
- Airworthiness Directives carried out (or found carried out).
- Repairs carried out (or found carried out).
- Modifications carried out (or found carried out).
- Replacement parts installed (or found installed).
- Life limited parts history.
- Time Since New (TSN), Time Since Overhaul (TSO), etc.
- Deviations from the customer work order.
- Identity of other regulation if not HKAR-145.
- Release statements to satisfy a foreign maintenance requirement.
- Release statements to satisfy the conditions of a national/international maintenance agreement.

NOTE: The latter two statements allow the possibility of dual release against both HKAR-145 and a foreign maintenance requirement or the single release by a HKAR-145 approved maintenance organisation against a foreign maintenance requirement. However care should be exercised to mark the relevant box(es) in Block 14a to validate the release. It should also be noted that the dual release requires the approved data to be approved/accepted by both the Director-General and the appropriate foreign State/Place and the single release requires the approved data to be approved/accepted only by the appropriate foreign State/Place.

Blocks 13a, 13b, 13c, 13d and 13e: These blocks are specifically reserved for the release/certification of newly manufactured item(s) in accordance with HKAR-1 or HKAR-21.

NOTE: Blocks 14a through 14e should be shaded, darkened, or otherwise marked to preclude inadvertent or unauthorised use.

Block 13a Mark the ‘approved design data and are in condition for safe operation’ box if the item(s) were manufactured using approved design data and found to be in a condition for safe operation.

Mark the ‘non-approved design data specified in Block 12’ box if the item(s) were manufactured using applicable non-approved design data. Identify the applicable data in Block 12.

Only one box shall be marked. Mixtures of items released for against ‘approved’ and ‘non-approved’ design data are not permitted on the same CAD Form One.

Block 13b The hand-written normal signature of a person who has written authority from an approved organisation to make certifications in respect of new item(s). Use of a stamp instead of a signature is not permitted, but the authorised person may add a stamp impression to his signature to aid recognition. This signature can be computer printed subject to the Director-General being satisfied that only the signatory can direct the computer and that a signature is not possible on a blank computer generated form.

Block 13c The HKAR-1 and/or HKAR-21 approved organisation reference number given by the Director-General.

Block 13d The name of the person signing Block 13b, printed, typed, or written in a legible form and personal authorisation reference.

Block 13e The date on which Block 13b is signed, using the format dd/mmm/yyyy (dd = 2-digit day, mmm = first 3 letters of the month, yyyy = 4-digit year).

Blocks 14a, 14b, 14c, 14d and 14e: These blocks are specifically reserved for the release/certification of maintained item(s) in accordance with HKAR-145 or other regulation specified in Block 12.

NOTE: Blocks 13a through 13e should be shaded, darkened, or otherwise marked to preclude inadvertent or unauthorised use.

Block 14a Contains the required HKAR 145.50(a) release to service statement for all maintenance by HKAR-145 approved maintenance organisations. When non HKAR-145 maintenance is being released Block 12 shall specify the particular regulation. In any case the appropriate box shall

be marked to validate the release.

The certification statement 'unless otherwise specified in Block 12' is intended to address the following situations:

- (a) The case where the maintenance could not be completed.
- (b) The case where the maintenance deviated from the standard required by HKAR-145.
- (c) The case where the maintenance was carried out in accordance with a non HKAR-145 requirement.

Whichever case or combination of cases shall be specified in Block 12.

Block 14b The hand-written normal signature of a person who has written authority from an approved organisation to make certifications in respect of new item(s). Use of a stamp instead of a signature is not permitted, but the authorised person may add a stamp impression to his signature to aid recognition. This signature can be computer printed subject to the Director-General being satisfied that only the signatory can direct the computer and that a signature is not possible on a blank computer generated form.

Signature in this Block constitutes a Release to Service pursuant to HKAR 145.50.

Block 14c The HKAR-145 approved maintenance organisation reference number given by the Director-General.

Block 14d The name of the person signing Block 14b, printed, typed, or written in a legible form and personal authorisation reference.

Block 14e The date on which Block 14b is signed, using the format dd/mmm/yyyy (dd = 2-digit day, mmm = first 3 letters of the month, yyyy = 4-digit year). The Release to Service shall be signed at the 'completion of maintenance'.

1 CIVIL AVIATION DEPARTMENT HONG KONG, CHINA		2 AUTHORISED RELEASE CERTIFICATE CAD FORM ONE			3 Certificate Ref. No.
4 Approved Organisation Name and Address:				5 Work Order/Contract/Invoice	
6 Item	7 Description	8 Part No.	9 Qty	10 Serial/Batch No.	11 Status/Work
12 Remarks					
13a Certifies that the item(s) identified above was (were) manufactured in conformity to: <input type="checkbox"/> approved design data and are in condition for safe operation <input type="checkbox"/> non-approved design data specified in Block 12 (See reverse side)			14a <input type="checkbox"/> HKAR-145.50 Release to Service <input type="checkbox"/> Other regulation specified in Block 12 Certifies that unless otherwise specified in Block 12 the work identified in Block 11 and described in Block 12, was accomplished in accordance with HKAR-145 and in respect to that work the item(s) is(are) considered ready for release to service. (See reverse side)		
13b Authorised Signature		13c Approval Reference Number		14b Authorised Signature	
13d Name		13e Date (dd/mmm/yyyy)		14c Approval Reference Number	
13d Name		13e Date (dd/mmm/yyyy)		14e Date (dd/mmm/yyyy)	

DCA 1 (04/2011)

(Instructions for completion refer to HKAR-2 Chapter 31)

<p>CAD Form One (reverse side)</p> <p align="center">AUTHORISED RELEASE CERTIFICATE - CAD FORM ONE</p> <p align="center">USER/INSTALLER RESPONSIBILITIES</p> <p>NOTE:</p> <p>1 It is important to understand that the existence of the Document alone does not automatically constitute authority to install the item(s).</p> <p>2 Where the user/installer works in accordance with the national regulations of an Airworthiness Authority different from the Airworthiness Authority specified in Block 1 it is essential that the user/installer ensures that his/her Airworthiness Authority accepts item(s) from the Airworthiness Authority specified in Block 1.</p> <p>3 Statements in Blocks 13a and 14a do not constitute installation certification. In all cases the aircraft maintenance record must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.</p>	
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5. Effectivity

CAD Form One, revision (04/2011), shall be used for the release of all items from 1 June 2011 but may be used if available prior to 1 June 2011. CAD Form One, revision (09/2009) may only be used for the period up to 30 September 2011.

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