

Hong Kong Aviation Requirements

HKAR-1

Airworthiness Procedures

**Issue 2 Revision 26
30 April 2024**

CAD 554

**Civil Aviation Department
Hong Kong, CHINA**

HKAR-1

Enquires on the contents of the Hong Kong Aviation Requirements should be addressed to:

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Please note that the HKAR-1 (Airworthiness Procedures) is available at CAD website:
<http://www.cad.gov.hk>

Hardcopies will not be published.

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FOREWORD

1 PURPOSE

Hong Kong Aviation Requirements (hereinafter referred to as the 'HKAR') of which HKAR-1 is a constituent part, are published by the Director-General of Civil Aviation (hereinafter referred to as the 'Director-General'). They comprise minimum requirements and constitute the basis for the issue of approvals and certificates required by the current Air Navigation (Hong Kong) Order 1995 (hereinafter referred to as 'the Order').

2 GENERAL

2.1 The Chief Executive of Hong Kong Special Administrative Region is the airworthiness authority in Hong Kong Special Administrative Region and has authorised the Director-General of Civil Aviation to exercise his powers in this respect.

Note: For the purpose of this HKAR the following definitions shall apply:-

'Chief Executive' means the Officer for the time being administering the Hong Kong Special Administrative Region Government.

'Director-General' means the Director-General of Civil Aviation who is authorised for the purpose under the Order by the Chief Executive of Hong Kong Special Administrative Region and includes any person who is delegated for that purpose.

2.2 It is the policy of the Chief Executive to exercise his various discretionary powers by reference to certain documents with a view to ensuring effective implementation of International Civil Aviation Organization (ICAO) standards. In order to ensure that all these ICAO standards are reflected in Hong Kong aviation legislation, this ICAO compliance statement to HKAR-1 (CAD 554) is issued.

This HKAR-1 (CAD 554) is published in support of the powers of the Chief Executive contained in Part III of the Order.

The document includes international standards contained in Annexes to the Chicago Convention.

It is the policy of the Director-General to have reference to this document when exercising the discretionary powers referred to above and in particular he will normally exercise those powers so as to ensure effective implementation of any such international standards.

- 2.3 Compliance with the procedures in HKAR-1 is, normally required. The Director-General may accept proposals to vary the procedures in a particular case, provided such variations give, at least, an equivalent level of safety to that intended by the HKAR.
- 2.4 HKAR-1 contains approval procedures for organisations for specific functions. The HKAR-1 approved organisation shall provide the Director-General with an exposition containing procedures defining the organisation's continuing compliance with the applicable HKAR-1 requirements. It can be a discrete document or combined with the maintenance organisation exposition if the organisation is also a HKAR-145 approved maintenance organisation. It shall be amended as necessary to remain an up-to-date description of the HKAR-1 approved organisation. The exposition and any subsequent amendments shall be approved by the Director-General.
- 2.5 HKAR-1 contains Approval procedures for aircraft and equipment for which Hong Kong Approval is required. Although the Director-General has responsibilities under the Order in relation to the operation and maintenance of aircraft on the Hong Kong Register, certain primary airworthiness responsibilities defined in ICAO Annex 8 are those of the Authority of the State of Design.
- 2.6 Major aviation products are increasingly those of collaboration between manufacturers of more than one country. Nevertheless it remains important, particularly in the context of continued airworthiness, that the primary responsibility be identified with one Authority. The Procedures of HKAR-1 are intended to cover these circumstances.
- 2.7 Reflecting the collaborative nature of manufacture, the functions of the National Authorities are often also undertaken jointly or in collaboration. The provisions of Bilateral and Multilateral Agreements and Arrangements between nations on airworthiness matters have been developed more extensively and HKAR-1 takes account of the related procedures at least in principle; the details of these procedures have so far varied significantly according to the particular arrangements within which a project is undertaken.
- 2.8 **Supply of Material to the Director-General.** Where, in compliance with the HKAR, material (e.g. manuals, documents) is required to be sent to the Director-General, the consignor shall ensure, before despatch, that he has paid, or has arranged to pay, all charges necessary to cover delivery of the material to the CAD Airworthiness Office.

3 INTERPRETATION

- 3.1 The HKAR, with or without explanatory matter, should not be regarded as constituting a text book of current aeronautical knowledge. The interpretation of the HKAR against a background of such knowledge is essential.
- 3.2 Where necessary the HKAR are supplemented by Appendices. Generally these Appendices take the form of acceptable interpretation of requirements, state recommended practices, or give supplementary information.
- 3.3 Mandatory clauses are invariably denoted by the use of 'shall' or 'must'; 'should' or 'may' are used in the text to introduce permissive or recommended clauses.
- 3.4 Imperatives such as 'ensure', 'prevent' and 'shall be designed', imply that the applicant, before claiming compliance with the requirement in question, will take all the steps that are deemed to be necessary in the light of the knowledge and techniques available at the time.
- 3.5 It is implicit in requirements expressed qualitatively (e.g. 'readily visible', 'adequately tested', etc.) that the Director-General will adjudicate in cases where doubt exists.

4 EFFECTIVE DATE

New requirements and amendments promulgated in HKAR-1 are effective from the date printed on them.

HONG KONG AVIATION REQUIREMENTS

CHECKLIST OF PAGES

AIRWORTHINESS PROCEDURES

FIRST ISSUE, DATED 1 July 1996
 ISSUE 2, DATED 31 January 2009
 ISSUE 2 Revision 1, DATED 23 February 2009
 ISSUE 2 Revision 2, DATED 30 November 2009
 ISSUE 2 Revision 3, DATED 30 November 2010
 ISSUE 2 Revision 4, DATED 31 January 2011
 ISSUE 2 Revision 5, DATED 15 August 2011
 ISSUE 2 Revision 6, DATED 1 October 2011
 ISSUE 2 Revision 7, DATED 10 December 2012
 ISSUE 2 Revision 8, DATED 31 July 2013
 ISSUE 2 Revision 9, DATED 30 January 2014
 ISSUE 2 Revision 10, DATED 27 February 2015
 ISSUE 2 Revision 11, DATED 29 January 2016
 ISSUE 2 Revision 12, DATED 31 August 2016
 ISSUE 2 Revision 13, DATED 28 February 2017
 ISSUE 2 Revision 14, DATED 29 September 2017
 ISSUE 2 Revision 15, DATED 29 March 2018
 ISSUE 2 Revision 16, DATED 31 October 2018
 ISSUE 2 Revision 17, DATED 28 June 2019
 ISSUE 2 Revision 18, DATED 2 January 2020
 ISSUE 2 Revision 19, DATED 31 March 2020
 ISSUE 2 Revision 20, DATED 30 July 2020
 ISSUE 2 Revision 21, DATED 30 July 2021
 ISSUE 2 Revision 22, DATED 31 January 2022
 ISSUE 2 Revision 23, DATED 30 September 2022
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1.7-10 A2 P.1 to 1.7-10 A2 P.6	31 January 2009
1.8-6 P.1 to 1.8-6 P.4	31 October 2018
1.8-9 P.1 to 1.8-9 P.11	31 October 2018
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PREAMBLES**HKAR-1**

This HKAR-1 was issued on 1 July 1996 and became effective on the same date. The preambles are intended to be a summarized record of the main changes introduced by each amendment of HKAR-1.

*Issue 1**1 July 1996*

- New requirements, basis and procedures for the issue of approvals and certificates required by the current Air Navigation (Hong Kong) Order 1995.

*Issue 2**31 January 2009*

- Incorporated contents of Issue 1, Revision 13 which have not been changed.
- Added a new Sub-section 1.1-3 (Non-Compliance Findings).
- Amended Sub-section 1.2-2 paragraph 2 stating that the issue of a Hong Kong Type Certificate is a pre-requisite to the issue of a Certificate of Airworthiness for an aircraft of that type has not previously been issued with a Hong Kong Certificate of Airworthiness in that Category.
- Amended Sub-section 1.2-2 sub-paragraph 4.1.2 that the design shall not have any features or characteristics that render it unsafe under the anticipated operating conditions.
- Amended Sub-section 1.2-2 Appendix No. 1:
 - Included EASA Certification Specifications (CS) and European Technical Standard Orders (ETSO)
 - Superseded the reference of 'UK Additional Requirements and Special Conditions for the Certification of Foreign Constructed Aircraft (CAP 480)' with 'Mandatory Airworthiness Requirements (CAP 747)' in sub-paragraph 5.1
 - Added new paragraph 9 'Environmental Protection Requirements and Certification Specifications'
- Added a new sub-paragraph 4.1.5 to Sub-section 1.2-2 and also amended Sub-section 1.2-5 sub-paragraph 2.1.4 stating design organisation approval holder shall ensure the aircraft is specifically guarded against dangerous features by complying with appropriate airworthiness requirements.
- Changed the titles of Sub-section 1.2-3 and its Appendix No. 1.
- Changed the title of Sub-section 1.2-4.

- Amended Sub-section 1.2-5 sub-paragraphs 1.1 and 1.2 that the design shall not have any features or characteristics that render it unsafe under the anticipated operating conditions; and also revised the definitions of major modification/repair to include reliability, operational characteristics, noise, fuel venting and exhaust emission.
- Amended Sub-section 1.2-5 sub-paragraph 2.1.2 with the criteria for classification and approval of major and minor modifications.
- Amended Sub-section 1.2-5 sub-paragraph 2.1.5 that the applicant shall have sound knowledge of the design principles embodied in the aircraft type being modified or repaired.
- Added a 'NOTE' to Sub-section 1.2-5 sub-paragraph 2.1.5 that application for major modification shall be supported by type certificate holder.
- Added a new sub-paragraph 2.1.5(c) to Sub-section 1.2-5 stating the criteria for a new Type Certificate.
- Changed the heading of sub-paragraph 2.3 of Sub-section 1.2-5 Appendix No. 1 and amended sub-paragraphs 2.6 and 2.7 to align with the relevant descriptions in sub-paragraphs 1.1 and 1.2 of Sub-section 1.2-5.
- Added a 'NOTE' to Sub-section 1.3-2 sub-paragraph 2.1 that applicant should submit all related substantiation documents and reports to the Director-General at least ten working days prior to the anticipated date of issuing the C of A.
- Added a new paragraph 11 to Sub-section 1.3-2 stating the validity of newly issued Certificate of Airworthiness.
- Added a new paragraph 8 to Sub-section 1.3-4 stating the validity of renewed Certificate of Airworthiness.
- Added new sub-paragraphs 1.2(e) and 2.4 to Sub-section 1.3-7 stating the purposes and application procedures for the issue of a Permit to Fly respectively.
- Changed the title of Sub-section 1.4-2.
- Changed the title of Sub-section 1.4-4.
- Amended Sub-section 1.6-2 sub-paragraphs 1.1 and 2.1 stating approved maintenance schedules are required for aircrafts registered in Hong Kong.
- Added new sub-paragraphs 10.2, 10.3 and 10.4 to Sub-section 1.6-2 stating the requirements and types of maintenance records to be retained.

- Amended Sub-section 1.6-5 sub-paragraphs 1.1 to 1.3 stating the requirements of AN(HK)O 1995 Article 14A and the terms of a permission granted under this Article.
- Amended Sub-section 1.6-5 paragraph 5 with the word “acceptance” renamed as “approval”.
- Amended Sub-section 1.7-5 sub-paragraph 2.1 stating an aircraft registered in Hong Kong in respect of which a certificate of airworthiness is in force shall not fly unless the aircraft (including in particular its engines), together with its equipment and radio station, is maintained in accordance with a maintenance schedule approved by the Director-General in relation to that aircraft.
- Amended Sub-section 1.7-5 Appendix No. 1 sub-paragraphs 1.1 and 1.2 (renumbered as new sub-paragraphs 2.1 and 2.2) providing supplementary information with respect to Maintenance Schedule requirements. In addition, a new paragraph 3 (Human Factors Consideration) is also incorporated.
- Deleted Sub-section 1.8-1.
- Relocated the three appendices of original Sub-section 1.8-1 to Sub-section 1.8-2, with Appendix No. 1 renamed as ‘Exposition Guidance’.
- Amended Sub-section 1.8-2 sub-paragraph 3.11 to establish the requirements for all materials used in those parts of an aircraft which are essential for its operation to conform to approved specifications.
- Changed the reference ‘Sub-section 1.8-1 Appendix No.1’ to ‘Sub-section 1.8-2 Appendix No.1’ in Sub-section 1.8-4 sub-paragraph 3.2 and also Sub-section 1.8-5 sub-paragraph 3.2.
- Added a new sub-paragraph 3.7 to Sub-section 1.8-5 stating the applicant shall demonstrate that the organisation has established and is able to maintain a quality system; and renumbered the original sub-paragraphs 3.7, 3.8 and 3.9 to 3.8, 3.9 and 3.10 respectively. Similarly for Sub-section 1.8-6 and renumbered the original sub-paragraphs 3.7 and 3.8 to 3.8 and 3.9 respectively.
- Added a new sub-paragraph 3.10 to Sub-section 1.8-8 stating that approved E2 organisations shall have a system for collecting, investigating, and analyzing reports of and information related to failures, malfunctions, defects or other occurrences which cause or might cause adverse effects on the continuing airworthiness of the product, part or appliance covered by the modification design approval.; and renumbered the original sub-paragraph 3.10 to 3.11.
- Amended Sub-section 1.8-8 sub-paragraph 4.7 stating that with respect to sub-paragraph 3.10, the E2 organisation shall investigate the reason for the deficiency, if any, and report to the Director-General the results of its investigation and any action it is taking or proposes to take to correct that deficiency.

- Deleted description/reference of ‘Sub-section 1.8-1’ from:
 - Sub-section 1.3-8, sub-paragraph 2.4(b)
 - Sub-section 1.6-2, sub-paragraph 9.4.2(a)
 - Sub-section 1.8-2 Appendix No. 1, paragraph 1 (originally as Sub-section 1.8-1 Appendix No.1)
 - Sub-section 1.8-2 Appendix No. 3, paragraph 1 and sub-paragraph 2.3 (originally as Sub-section 1.8-1 Appendix No. 3)

- Deleted all descriptions of ‘E1 approval’ in:
 - Sub-section 1.8-8
 - Sub-section 1.8-8 A1
 - Sub-section 1.8-9

- Deleted Sub-section 1.8-19.

- Deleted ‘as amended’ from the following paragraphs/sub-paragraphs indicating ‘Air Navigation (Hong Kong) Order 1995’ instead of ‘Air Navigation (Hong Kong) Order 1995, as amended’:
 - Foreword, sub-paragraph 2.2
 - Sub-section 1.1-2, sub-paragraphs 2.1.2 and 2.2(f)
 - Sub-section 1.2-2, sub-paragraphs 4.1.1, 4.2.1, 4.3.2, 4.4.1, 4.4.3, 5.1, 5.3, 7.2.2
 - Sub-section 1.2-2 A1, paragraphs 4 and 8
 - Sub-section 1.2-3 A1, paragraph 2
 - Sub-section 1.3-2, paragraph 9
 - Sub-section 1.3-3, sub-paragraph 1.5
 - Sub-section 1.3-3 A1, paragraph 2
 - Sub-section 1.3-4, sub-paragraph 6.1
 - Sub-section 1.3-5, sub-paragraph 1.4
 - Sub-section 1.3-6, sub-paragraphs 1.2, 3.3.1 and 4.1(d)
 - Sub-section 1.3-7, sub-paragraph 1.1
 - Sub-section 1.3-8, sub-paragraphs 1.1 and 1.2
 - Sub-section 1.3-9, sub-paragraphs 1.1 and 1.2
 - Sub-section 1.5-4, paragraph 1
 - Sub-section 1.5-6, sub-paragraph 1.2
 - Sub-section 1.5-7, sub-paragraph 1.1
 - Sub-section 1.6-2, sub-paragraphs 1.1, 6.1(a) & (b), 7.1(b)(ii), 8.2(a) & (b), 8.3, 9.3.8 and 10.1(c)
 - Sub-section 1.6-4, paragraph 1
 - Sub-section 1.6-5, sub-paragraph 1.1
 - Sub-section 1.6-6, sub-paragraph 1.4
 - Sub-section 1.6-7, paragraph 1
 - Sub-section 1.6-8, sub-paragraph 1.4
 - Sub-section 1.7-2, sub-paragraphs 1.1, 2.1.1(b)
 - Sub-section 1.7-5, sub-paragraphs 1.1 and 2.1
 - Sub-section 1.7-8, paragraph 1

Sub-section 1.7-10, sub-paragraphs 1.2, 2.10 and 3.1.7

Sub-section 1.8-8 A1, sub-paragraph 3(d)

Sub-section 1.8-9, sub-paragraphs 1.1, 3.5.2(b), 3.5.3, 3.9.1, 3.9.2, 3.10.1, 3.10.2 and 4.7

Sub-section 1.8-11, paragraph 1(1)

Sub-section 1.8-12, paragraph 1

Issue 2 Revision 1

23 February 2009

- Amended Sub-section 1.5-7 sub-paragraph 1.1 to replace the information related to “exemptions” with an introduction of Master Minimum Equipment List.
- Added sub-paragraph 2.2.3 in Sub-section 1.7-2 to require procedures shall be established by the applicant to ensure that the flight manual is updated by incorporating the amendments, including changes classified as mandatory by the Director-General; or in case of an aircraft leased to a Hong Kong operator, classified as mandatory by the State of Registry.

Issue 2 Revision 2

30 November 2009

- Amended Sub-section 1.8-2 Appendix No. 3 to refer HKAR-2 Chapter 31 for use and instructions for the completion of the Authorised Release Certificate (CAD Form One).

Issue 2 Revision 3

30 November 2010

- Amend Sub-section 1.3-3 to accept production flight test conducted by Type Design Organisation on subsequent delivery aircraft.

Issue 2 Revision 4

31 January 2011

- Amend Sub-section 1.2-5 to accept repair designs prepared by the type certificate holder of aircraft or engine and approved by the State of Design.
- Amend Sub-section 1.3-2 to specify the timeline for the submission of CAD Form DCA46D and related substantiated documents when applying for Certificate of Airworthiness. The requirement for the specification of the Maximum Approved Passenger Seating Configuration (MAPSC) in Aircraft Flight Manual or its supplement is also introduced.
- Amend Sub-section 1.3-5 to revise the general requirements on flight testing for the renewal of Certificates of Airworthiness or Permit to Fly.
- Amend Sub-section 1.3-8 to reword the requirements for flights under A Conditions.
- Amend Sub-section 1.3-9 to introduce Flight Test Risk Assessment for flights under B Conditions.

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- Amend Sub-section 1.6-6 to revise the requirements on mandatory modifications, inspections and changes to approved documentation: procedure for implementation.
- Amend Sub-section 1.8-2 to specify the timeline for the phase-out of Suppliers Group A2.
- Amend Sub-section 1.8-8 to specify the timeline for the phase-out of Group E2 Design Organisation.

Issue 2 Revision 5

15 August 2011

- Delete Sub-section 1.2-5 as the requirement is published in HKAR-21.
- Amend Sub-section 1.3-2 to inform the additional time required for the processing of certificate of airworthiness applications for aircraft equipped with peculiar interior.

Issue 2 Revision 6

1 October 2011

- Amend Sub-section 1.3-4 on documents to be provided for examination when renewing Certificate of Airworthiness.
- Amend Appendix 3 of Sub-section 1.8-13 on minimum requirements for persons authorized to issue Certificates of Maintenance Review.

Issue 2 Revision 7

10 December 2012

- Amend page ii and Forward page on address and telephone number of CAD.

Issue 2 Revision 8

31 July 2013

- Amend Sub-section 1.3-4 to allow coincident annual inspection to take place outside the premises of an organisation approved for the purpose.
- Some editorial changes are included.

Issue 2 Revision 9

30 January 2014

- Amend Sub-section 1.8-13 Appendix 3 to update requirements for the authorization of personnel.

Issue 2 Revision 10

27 February 2015

- Amend Sub-section 1.8-10 to update requirements for approval of welders.
- Add Sub-section 1.8-10 Appendix 2 to recognize test laboratory holding certain

Issue 2 Revision 26

P-6

30 April 2024

accreditations.

Issue 2 Revision 11

29 January 2016

- Amend Sub-section 1.3-9 to update the FAA referencing document for Flight Test Risk Assessment (FTRA).
- The page number on all the ‘Internationally Left Blank’ pages are removed and the ‘Checklist of Pages’ are updated accordingly.

Issue 2 Revision 12

31 August 2016

- Amended Sub-section 1.5-2 to include the ‘Maintenance Type Board’ and update the procedures
- Deleted Sub-section 1.8-2. Manufacture, test, inspection and certification of aeronautical components, assemblies and items of equipment are covered in HKAR-21. (also refer to Airworthiness Notice No. 18 Issue 3 for phase-out of respective HKAR-1 requirement)
- Deleted Sub-section 1.8-3. Approval of organisations to amend maintenance, overhaul and repair manuals is covered in HKAR-21. (also refer to Airworthiness Notice No. 18 Issue 3 for phase-out of respective HKAR-1 requirement)
- Deleted Sub-section 1.8-4. Manufacture, test, inspection and certification of aeronautical materials are covered in HKAR-21. (also refer to Airworthiness Notice No. 18 Issue 3 for phase-out of respective HKAR-1 requirement)
- Deleted Sub-section 1.8-8. E2 and E3 certification activities are covered in HKAR-21. (also refer to Airworthiness Notice No. 18 Issue 3 for phase-out of respective HKAR-1 requirement)

Issue 2 Revision 13

28 February 2017

- Deleted Sub-section 1.3-7 and its Appendices titled ‘Issue and Renewal of Permits to Fly’. Guidance is covered in Airworthiness Notice No. 110 and its Appendix 1.

Issue 2 Revision 14

29 September 2017

- Amended Sub-section 1.6-6 to define product and equipment; to simplify the CAD policy on adoption of non-Hong Kong airworthiness directives; to add owners/operators’ responsibility to monitor airworthiness directives and emergency directives; to add ‘risk assessment analysis’ as part of required data to support AMOC application; and to allow delegation to DOA for approval of equipment serial number specific AMOC.

Issue 2 Revision 15

29 March 2018

- Editorial changes in Sub-section 1.6-7 paragraphs 2.1.2, 2.2.4, 2.2.6, 3.1, 4.1(f) and 6.1.
- Added Sub-section 1.6-7 paragraph 2.2.7 to specify the requirement for issuing Certificate of Conformity after performing special processes such as heat and protective treatment.
- Deleted Sub-section 1.8-5.

Issue 2 Revision 16

31 October 2018

- Revised Sub-section 1.6-2 to incorporate the new Standards 6.4.4 (Section II) and 6.2.4 (Section III) and associated Notes 1 and 2 of the Amendment 22 to ICAO Annex 6, Part III.
- Revised Sub-section 1.8-6 to delete 'Supplier Group A2' and incorporated some editorial changes.
- Revised Sub-section 1.8-9 and its Appendices No. 1, 3 and 4 and deleted its Appendix No. 2 in response to the deletion of Group category G1 (Flight Testing) of BCAR Section A, Chapter A8-9.

Issue 2 Revision 17

28 June 2019

- Amended the 'Foreword':
 - Paragraph 2.4 – Removed the mention of certification procedures which have been covered under HKAR-21.
 - Paragraph 4.2 – Removed Sections 1.2 and 1.4, which are both related to certification issues and have been covered under HKAR-21.
 - Some editorial changes are also included.
- Deleted Sub-section 1.3-2 as issue of Certificate of Airworthiness has already been covered under Subpart H of HKAR-21.
- Amended Sub-section 1.3-5 paragraph 1.7(a) and added new paragraph 1.7(c) to provide an option for Hong Kong operators to further reduce/eliminate flight testing for renewal of Certificate of Airworthiness based on a satisfactory performance of its historical flight tests on the fleet.
- Amended Sub-section 1.3-11:
 - Paragraphs 2.2 and 2.3 – Revised with regard to application for approval of aircraft radio installation after embodiment of modification.

- Renumbered the original paragraph ‘4’ as paragraph ‘3’ and paragraphs ‘3.1.1 to 3.1.3’ as paragraphs ‘3.3 to 3.4’ respectively, and also paragraph ‘4.3’ as paragraph ‘3.2(c)’.
 - Renumbered the original paragraph ‘3’ as paragraph ‘4’ and then relocated the content of the original paragraph ‘3.5’ to under paragraph ‘4’.
 - Renamed the ‘Office of the Telecommunications Authority’ to ‘Office of the Communications Authority’.
- Amended Sub-section 1.5-3 paragraphs 2.2 and 4.3(c) due to the deletion of Sections 1.4 and 1.2 respectively.
- Amended Sub-section 1.5-3 paragraphs 6.2 and 6.3 due to the introduction of ‘independent inspection’ concept and requirement. Some editorial changes are also included.
- Amended Sub-section 1.5-7 paragraphs 5 due to the deletion of Section 1.2. Some editorial changes are also included.
- Amended Sub-section 1.6-2:
- Renumbered the sub-paragraphs of paragraph 6 from ‘(i) to (iv)’ to ‘(a) to (d)’.
 - Renamed the heading of paragraph 9 from ‘Duplicate Inspection’ to ‘Duplicate Inspection / Independent Inspection’.
 - Added new paragraph 9.2.3 and revised paragraph 9.3.1 with regard to the introduction of ‘independent inspection’ concept and requirement.
 - Added a new paragraph number ‘9.4’ titled ‘Duplicate Inspection’ and relocated the contents of original paragraphs ‘9.3.2 to 9.3.9 (except paragraph 9.3.5)’ to under the new paragraphs ‘9.4.1 to 9.4.7’.
 - Added new content with regard to ‘independent inspection’ under the original paragraph number 9.3.2.
 - Revised the content of the original paragraph 9.3.5 and then relocated it to under paragraph number 9.3.2.
 - Added a new paragraph 9.4.8 stating ‘Duplicate inspection’ will be phased out with effect from 1 January 2020.
 - Added a new paragraph 9.5 stating the qualifications of the authorised and competent persons for performing independent inspection.
 - Some editorial changes are also included.
- Amended Sub-section 1.6-8 paragraph 2.2 due to the deletion of Section 1.2. Some editorial changes are also included.
- Amended Sub-section 1.7-3:
- Paragraph 2.3 – Revised due to the deletion of Section 1.4.
 - Paragraph 4.5 – Revised due to the deletion of Section 1.2.
 - Replaced the UKCAA document CAP 450 in paragraph 3 by document SRG1844

‘EASA Operations Manual Template’.

- Amended Sub-section 1.8-15:
 - Paragraph 1 – Revised to indicate the Group M3 Approval is applicable to Hong Kong registered aircraft.
 - Paragraph 2 – Revised to indicate the use of CAD form DCA 61A which, together with the form DCA 61, can be downloaded from the CAD website.
 - Paragraph 3.1 – Revised to further clarify the personnel requirements for obtaining the approval.
 - Paragraph 3.2 – Revised to further clarify the organization and procedures requirements for obtaining the approval.
 - Deleted paragraphs 3.3 to 3.5.
 - Renamed the heading of paragraph 4 from ‘Continuation of Approval’ to ‘Requirements for the Continuation of Approval’ and also further clarifying the requirements.

- Amended Sub-section 1.8-15 Appendix No. 1:
 - Paragraph 1 – Revised to indicate the Group M3 Approval is applicable to Hong Kong registered aircraft.
 - Paragraph 2 – Revised to indicate the use of CAD form DCA 61A which, together with the form DCA 61, can be downloaded from the CAD website.

Issue 2 Revision 18

2 January 2020

- Revised Sub-section 1.3-4 to add paragraph 1.2.2 which requires aircraft with C of A expired for more than 12 months to apply for C of A issue except as stated.

- Revised Sub-section 1.5-3 to remove the term ‘duplicate inspection’ in paragraphs 6.2, 6.3 and 6.3.2 as ‘duplicate inspection’ would be replaced by ‘independent inspection’ with effect from 1 January 2020.

- Amended Sub-section 1.6-2:
 - Paragraph 9: Deleted ‘duplicate inspection’ from the subheading.
 - Paragraphs 9.2.2: Deleted the whole paragraph.
 - Paragraph 9.2.3: Revised the term ‘a second independent competent person’ as ‘an independent qualified person’ of the first sentence; revised ‘The second independent competent person... if they were not...’ as ‘The independent qualified person... if such person was not...’ of the last sentence; re-numbered the paragraph number to 9.2.2.
 - Paragraphs 9.3.1, Note of 9.3.1, 9.3.2 & 9.3.3: Deleted the term ‘duplicate inspection’.
 - Paragraph 9.3.2: Deleted the term ‘second qualified person’.
 - Paragraph 9.4: Deleted the whole paragraph.

- Paragraph 9.5.2: Changed ‘independent competent person’ as ‘independent qualified person’
- Paragraph 9.5: Re-numbered the paragraph number to 9.4

Issue 2 Revision 19

31 March 2020

- Amended Sub-section 1.3-9:
 - Paragraph 3.1: Revised to state the new procedures for applying low risk flights under ‘B’ conditions.
 - Paragraph 4: Added to indicate the use of new CAD form DCA 569 and to clarify the details for applying low risk flights under ‘B’ conditions.

Issue 2 Revision 20

30 July 2020

- Amended Sub-section 1.8-9 Appendix No. 1:
 - Paragraph 2: Revised to change the form reference number of Certificate of Clearance from DCA F401 to DCA 195 and incorporate some editorial changes.
 - Paragraph 3: Revised to incorporate some minor editorial changes.
 - Replaced the image of the old form DCA F401 with the image of the new form DCA 195.

Issue 2 Revision 21

30 July 2021

- Amended Sub-section 1.6-5:
 - Paragraph 1.1: Revised to adopt full description “Air Navigation (Hong Kong) Order 1995” instead of AN(HK)O.
 - Paragraph 1.2: Added a new sentence for the need to comply with the conditions contained in the MEL.
 - Paragraph 1.3, 1.4 and 5: Revised to update the name of CAD guidance document from “CAD 549 HKAR-MMEL/MEL” to “CAD 549 MMEL/MEL”.
 - Paragraph 2: Revised to add full description of MTWA as “Maximum Total Weight Authorised”.
- Amended Sub-section 1.7-6:
 - Paragraph 1: Revised to update the name of CAD guidance document from “CAD 549 HKAR-MMEL/MEL” to “CAD 549 MMEL/MEL” and made minor editorial changes.

*Issue 2 Revision 22**31 January 2022*

- Amended Foreword:
 - Paragraph 2.4: Added this new paragraph to provide the provisions for approval of the HKAR-1 approved organisation exposition.
- Amended Sub-section 1.3-4:
 - Paragraph 1.1.2(b): Revised to update the definition of Group II aircraft.

*Issue 2 Revision 23**30 September 2022*

- Amended Foreword:
 - Paragraph 4: Deleted this paragraph regarding the editorial presentation information.
- Deleted Sub-section 1.1-3 as the applicable contents have been incorporated into Appendix No. 1 to Airworthiness Notice No. 28.
- Amended Sub-section 1.3-3:
 - Paragraph 2.2.2(a): Deleted the Fleet Testing Programme requirement as a result of abolition of Airworthiness Flight Test (AFT) requirement for C of A renewal.
 - Paragraph 3.1: Deleted the reference to Appendix No. 1 to this Sub-section as a result of removal of this Appendix.
- Deleted Appendix No. 1 to Sub-section 1.3-3 as reference to the AFT schedule of other Authorities is no longer required.
- Amended Sub-section 1.3-4:
 - Paragraph 1.1.3: Added an alternative means to renew C of A by following HKAR-181.
 - Paragraph 2.2(c): Deleted the requirement of submitting flight test report as a result of abolition of AFT requirement for C of A renewal.
 - Paragraph 3.6: Deleted this paragraph as a result of abolition of AFT requirement for C of A renewal.
 - Paragraph 4.10: Deleted this paragraph as a result of abolition of AFT requirement for C of A renewal.
 - Incorporated various editorial changes.
- Deleted Sub-section 1.3-5 as a result of abolition of AFT requirement for C of A renewal.

- Deleted Sub-section 1.5-7 as the applicable contents have been incorporated into CAD 549.
- Deleted Sub-section 1.6-5 as the applicable contents have been incorporated into CAD 549.
- Deleted Sub-section 1.8-14 as equivalent approval is now under HKAR-181.

Issue 2 Revision 24

1 February 2023

- Amended Sub-section 1.3-4:
 - Paragraph 5: Deleted this paragraph as the requirements are relocated to Airworthiness Notice No. 32.
- Deleted Sub-section 1.3-6 as the requirements for Statement of Conformity are replaced by the requirements for Export Certificate of Airworthiness in Airworthiness Notice No. 9B.
- Amended Sub-section 1.3-8:
 - Paragraph 3.4: Adopted the requirements for Certificate of Fitness for Flight signatory from Appendix No.3 to Sub-section 1.8-13.
- Deleted Sub-section 1.5-4 as the requirements are relocated to Airworthiness Notice No. 32.
- Amended Sub-section 1.6-2 to improve the requirements for Airworthiness Directives compliance.
- Deleted Sub-section 1.6-4 and Appendix No. 1 to this sub-section as the requirements are relocated to Airworthiness Notice No. 32.
- Amended Sub-section 1.6-6:
 - Paragraph 1.1: Deleted this paragraph and replaced by the new paragraph 1.
 - Paragraph 1.3: Deleted this paragraph as the requirements are covered by the new paragraph 3.
 - Paragraph 2: Deleted this paragraph as the requirements are covered by the new paragraph 3 and the new paragraph 4.
 - Paragraphs 3, 4, 5.2 and 6.2: Deleted these paragraphs as the requirements are irrelevant to the subject of this sub-section.
 - Paragraph 6.1: Deleted this paragraph as the requirements are relocated to Sub-section 1.7-2.

- Amended Sub-section 1.7-2 to add requirements for situations when Airworthiness Directives affect Aircraft Flight Manuals.
- Deleted Sub-section 1.7-10 and Appendixes No. 1 and No. 2 to this sub-section as the requirements are relocated to Airworthiness Notice No. 32.
- Deleted Sub-section 1.8-10 and Appendixes No. 1 and No. 2 to this sub-section as the requirements are updated and relocated to HKAR-145.
- Deleted Sub-section 1.8-13 and Appendixes No. 1, No. 2 and No. 3 to this sub-section as the requirements are relocated to HKAR-145, Sub-section 1.3-8 and Sub-section 1.6-2 as appropriate.

Issue 2 Revision 25

31 July 2023

- Deleted Sub-section 1.1-2 as the contents are duplicated with AN(HK)O, C of A Application Form and Permit to Fly Application Form.
- Deleted Sub-section 1.5-6 as the information becomes obsolete.
- Amended Sub-section 1.6-2 to remove the contents associated with maintenance schedules which are covered under CAD 452.
- Deleted Sub-section 1.6-2 Appendix 1 as the contents are covered under CAD 418.
- Deleted Sub-section 1.7-4 Appendix 1 as the contents become obsolete.
- Deleted Sub-section 1.7-5 as the contents are covered under CAD 452.
- Deleted Supplement to 1.7-5 due to no organisation holding this Approval.
- Deleted Sub-section 1.7-6 as detailed requirements in compiling a Minimum Equipment List (MEL) and the acceptance of the MEL are contained in CAD 549 MMEL/MEL.
- Deleted Sub-section 1.8-11 as HKAR-145 has D1 rating for nondestructive testing.
- Deleted Sub-section 1.8-11 Appendix 1 as HKAR-145 has D1 rating for nondestructive testing.
- Deleted Sub-section 1.8-12 as HKAR-145 has D1 rating for nondestructive testing.
- Deleted Sub-section 1.8-12 Appendix 1 as HKAR-145 has D1 rating for nondestructive testing.

Issue 2 Revision 26

30 April 2024

- Deleted Section 1.1 as all the contents have already been removed in Issue 2 Revision 25.
- Deleted Sub-section 1.3-11 as the contents are updated and relocated to AN 31.
- Deleted Sub-section 1.7-5 Appendix 1 as the contents are covered by CAD 452.

Section 1.3

Certificates of Airworthiness and other Provisions for Legal Flight

SECTION 1.3

SUB-SECTION 1.3-3

**FLIGHT TESTING FOR ISSUE OF A CERTIFICATE
OF AIRWORTHINESS OR A PERMIT TO FLY**

1 GENERAL

- 1.1 The flight testing of Series aircraft under investigation for the issue of a Certificate of Airworthiness or a Permit to Fly shall comply with the procedures set out in this Sub-section 1.3-3.

NOTE: Owners are required to arrange adequate insurance to cover damage to the aircraft and to third parties.

- 1.2 All owners of aircraft to be flown by a CAD Approved Test Pilot for any test purposes are required to ensure that insurance policies covering damage to the aircraft and third parties are suitably endorsed to provide appropriate cover against any claims which may be made against the Director-General or the test pilot, arising out of the test flight.

- 1.3 In order that the Director-General may accept reports on flight test matters, the qualifications and experience of personnel involved in flight testing under the provisions of this Sub-section shall be acceptable to the Director-General. The pilots or flight crew shall be appropriately licensed for the particular type of aircraft concerned and competent to conduct the test laid down in the Airworthiness Flight Test Schedule.

- 1.4 Except where the Director-General requires additional pilots or flight crew to be carried out for a particular Airworthiness Flight Test, the number of persons conducting the test should be confined to the crew specified in the Certificate of Airworthiness (flight manual).

- 1.5 Flight test personnel shall be provided with adequate facilities and equipment for the effective performance of their duties.

NOTE: Organisations approved in accordance with Sub-section 1.8-9 to fly aircraft under 'B' Conditions of the Air Navigation (Hong Kong) Order 1995 comply with this requirement.

2 APPLICATION

- 2.1 The following requirements and procedures are applicable where first application is made for the issue of a Hong Kong Certificate of Airworthiness

or a Permit to Fly in respect of a Series aircraft.

2.2 General

2.2.1 Flight tests shall be completed to establish that:-

- (a) Handling characteristics are satisfactory and typical of the type.
- (b) Climb performance equals or exceeds the scheduled data.

NOTE: Data is necessary in order to assess any future deterioration of performance in service.

- (c) The aircraft and its equipment function satisfactorily.
- (d) Additional Requirements and Special Conditions, where applicable, have been complied with.

2.2.2 Series aircraft shall be tested in accordance with (a) or (b), as appropriate.

(a) **New Aircraft**

The flight tests shall be conducted by the Approved Test Pilots under the supervision of the aircraft Type Design Organisation.

Upon completion of five satisfactory flight tests since the first delivery of the new series aircraft, compliance can also be achieved by means of a production flight test conducted by the Type Design Organisation on the subsequent delivery aircraft.

(b) **Used Aircraft**

Where the aircraft type and origin are well known to the Director-General, the flight testing may be conducted by the Approved Test Pilots. However, the Director-General may notify the applicant of his intention to carry out, or participate in, flight tests.

Where the Director-General has notified the applicant of his intention to carry out, or participate in, flight tests, the applicant shall, when requested, provide adequate opportunities for the Director-General to become re-familiar with the aircraft type.

- 2.2.3 A flight test report, in a form acceptable to the Director-General, shall be provided. The Director-General may require any of the tests to be repeated, either by the applicant or by the Director-General.

3 FLIGHT TEST SCHEDULE

3.1 The flight tests shall be made to an Airworthiness Flight Test Schedule acceptable to the Director-General. Such a schedule shall contain details of the aircraft type to which it refers, shall be marked with a reference number, issue number, and date, and shall include the following:-

- (a) Tests to check the aircraft performance.
- (b) Tests to check such handling qualities of the aircraft as have been agreed in consultation with the Director-General.

NOTE: It is convenient for the flight test schedule to contain the following handling tests, as these combine, in a brief form, checks on various flight characteristics.

- (i) A qualitative assessment of the take-off.
 - (ii) An assessment of the trim of the aircraft and the effectiveness of primary flight controls and trimmers in steady flight.
 - (iii) Hover manoeuvres for helicopters.
 - (iv) Flight at maximum speed.
 - (v) Stalls in the take-off and landing configurations.
 - (vi) A qualitative assessment of the landing.
- (c) Tests to check functioning of the aircraft equipment in flight.
 - (d) Such other tests as are requested by the Director-General.

NOTE: Controls, systems and equipment which are used regularly may be considered, for the purpose of this schedule, to have been checked on the basis of normal usage.

3.2 Flight Test Results

- 3.2.1 The flight test results, in a form acceptable to the Director-General, shall be submitted to the Director-General for acceptance.
- 3.2.2 The flight test result shall include a certificate, in the following form, which shall be signed by the pilot who conducted the test.

FLIGHT TEST CERTIFICATE

Aircraft Type:

Registration:

Manufacturer's No.:

I CERTIFY that I have tested the above aircraft to Airworthiness Flight Test Schedule reference

The following deficiencies and unsatisfactory features were revealed by the flight tests or noted at other times during the flight(s) and I CONSIDER that those annotated 'R' and/or 'FT' should be dealt with as follows:-

- (a) Those annotated 'R' should be rectified prior to the issue of the Certificate of Airworthiness or flight for hire or reward, whichever occurs first.
- (b) Those annotated 'FT' re-assessed in flight, following remedial action, before the defect can be considered to be rectified.

- 1
- 2
- 3
- 4 (etc.)

The above have been transcribed tofor rectification and clearance.

Pilot Signed

Date Licence No.

SECTION 1.3

SUB-SECTION 1.3-4

RENEWAL OF CERTIFICATE OF AIRWORTHINESS

1 INTRODUCTION

1.1 General

1.1.1 The renewal of a Certificate of Airworthiness shall be subject to compliance with the procedures set out in this Sub-section.

1.1.2 For the purpose of this Sub-section, aircraft are grouped in accordance with Maximum Total Weight Authorised (MTWA), type of design and Certificate of Airworthiness Category, as follows:

(a) Group I

All aircraft not included in Group II.

(b) Group II

Piston-engined aeroplanes and rotorcraft having a MTWA not exceeding 2730kg and in respect of which Certificate of Airworthiness issued in the Transport Category (Passenger) or Transport Category (Cargo) or Aerial Work Category or Private Category.

1.1.3 An aircraft operator may elect to follow the procedures set out in HKAR-181 as appropriate for the renewal of Certificate of Airworthiness in lieu of following the procedures set out in this Sub-section.

1.2 Applicability

1.2.1 For each Group, compliance shall be shown with the requirements, as follows:

(a) Group I

The requirements of paragraphs 2, 3, 5, 6 and 7.

(b) **Group II**

The requirements of paragraphs 2, 4, 5, 6 and 7.

- 1.2.2 For aircraft with Certificate of Airworthiness expired for more than 12 months the C of A issue procedures set out in HKAR-21 Subpart H should be followed. However if the applicant can demonstrate that the aircraft has been preserved within Hong Kong and/or under a controlled environment, the renewal procedures set out in this Sub-section should be applied.

NOTE: Under a controlled environment is defined as the aircraft was managed during the Certificate of Airworthiness expired period by a unique organisation and was kept at a place with sufficient protection from weather elements.

2 APPLICATION

- 2.1 CAD Form DCA 46C, copies of which can be obtained from the CAD website <http://www.cad.gov.hk>, shall be completed and returned to the same address at least 14 days but within 30 days before the expiry date of the Certificate of Airworthiness. The charge is prescribed in the Hong Kong Air Navigation (Fees) Regulations.
- 2.2 The applicant should provide the following documents for examination by the Director-General:
- (a) A copy of an inspection report giving brief details of the work done since the last renewal of the Certificate of Airworthiness. This report should include the following documents:
- (i) A record of the work accomplished since the last renewal of the Certificate of Airworthiness.
 - (ii) A record showing details of major checks carried out since the last renewal of the Certificate of Airworthiness.
 - (iii) A record of airframe, engine and propeller flying hours as follows:
 - The total flying hours/cycles for the airframe since new and the flying hours since the last renewal of the Certificate of Airworthiness.

- The total flying hours/cycles for the engine(s) since new and the flying hours since the last overhaul.
 - The total flying hours for the propeller(s) since new and the flying hours since the last overhaul.
- (iv) A record showing compliance with Service Bulletins, modifications and Airworthiness Directives. Unless otherwise agreed, the record should include the Modification Record Book when required. (See HKAR-1 Sub-section 1.7-9.)
- (v) A record of major component changes.
- (b) A weight and balance report, which should include a copy of the weight determination record, the weight and centre of gravity schedule and a list of the basic equipment. (See HKAR-1 Sub-section 1.6-4.)
- (c) A copy of the Certificate of Maintenance Review issued for the review of maintenance accomplished since the last renewal of Certificate of Airworthiness. (See HKAR-1 Sub-section 1.6-2.)

NOTE: Certificate of Maintenance Review is not required for aircraft certificated in the Private Category.

- (d) A summary of compliance status of the Definitive List of Hong Kong Airworthiness Notices.

2.3 If, for the investigation, travel outside Hong Kong is necessitated, the applicant will be required to meet the additional costs.

3 PROCEDURE NO. 1 FOR GROUP I AIRCRAFT

- 3.1 The aircraft and its records shall be in a condition acceptable to the Director-General, for such inspections that are considered necessary.
- 3.2 The aircraft inspection and the review of the records shall be carried out by an appropriately licensed aircraft maintenance engineer and a holder of CMR signatory respectively to determine the work to be undertaken to maintain the airworthiness of the aircraft.
- 3.2.1 The physical inspection of the aircraft for the purpose of making a recommendation for the renewal of the Certificate of Airworthiness shall be completed in the 30 days prior to making the renewal recommendation.

3.2.2 Where an inspection is carried out on an aircraft, for the purpose of the renewal recommendation of the Certificate of Airworthiness, the inspection shall be carried out at a premises where access to the parts of the aircraft necessary to be inspected is feasible. A report and renewal recommendation shall be prepared by the operator. A copy of the report detailing the work required shall be retained by the operator and made available to the Director-General upon request.

NOTE:(1) It shall be the responsibility of the operator to determine the extent of any inspection required in order to be satisfied the aircraft remains in compliance with applicable certification and airworthiness requirements.

(2) In the case of the renewal being completed abroad, the renewal process is to be predicated upon an inspection report prepared by an appropriately type rated licensed aircraft maintenance engineer. A copy of the report detailing the work required shall be sent to the Director-General. In such cases, the Director-General may decide that Airworthiness Officer involvement is necessary (see paragraph 2.3).

3.2.3 In determining the work to be undertaken on the aircraft, due account shall be taken of the following:

- (a) The age, storage conditions, total hours/cycles, areas and type of operation of the aircraft.
- (b) Compliance with the requirements of the Approved Maintenance Schedule (see HKAR-1 Sub-sections 1.6-2 and 1.7-5).
- (c) Work certified in the relevant records.
- (d) The periods between overhauls and any finite or service life limits, prescribed or approved by the Director-General, in respect of the aircraft and its parts.
- (e) Such other requirements or instructions, approved by the Director-General relating to the maintenance of airworthiness.
- (f) Mandatory modifications and inspections prescribed by the Director-General (see HKAR-1 Sub-section 1.6-6), where appropriate, in respect of the aircraft and its parts.

- (g) The manufacturer's recommendations in Service Bulletins, Maintenance Manuals, Maintenance Planning Documents (MPD) or equivalent documents.
- (h) Compliance with the Type Certificate Data Sheet (TCDS).

NOTE: Items (b) to (g) may be covered by a Condition Monitored Maintenance Programme approved by the Director-General (see Appendix No. 1 to HKAR-1 Sub-section 1.6-2).

- 3.2.4 The Director-General may determine the work required to be carried out on the aircraft.
- 3.3 All work undertaken in connection with the renewal of the Certificate of Airworthiness of the aircraft shall be monitored by the operator. Before the work is finally certified, the operator shall be satisfied that the work has been carried out, inspected, and tested where necessary, for conformity with the specifications, drawings and instructions relating to the approved design and with the requirements for the continuing airworthiness of the aircraft and its equipment.
- 3.4 The recommendation for the renewal of the Certificate of Airworthiness shall be made on a form acceptable to the Director-General by the operator. When completed, one copy shall be forwarded to the Director-General. A copy of the form shall be included in the aircraft records and an additional copy shall be retained by the operator.
- 3.5 The Certificate of Airworthiness renewal recommendation may be anticipated by a maximum of 30 days before the date of expiry without loss of validity. If the Certificate of Airworthiness has expired, the validity will take effect from the date the submission is received and accepted by the Director-General.

4 PROCEDURE NO. 2 FOR GROUP II AIRCRAFT

- 4.1 The aircraft and its records shall be in a condition acceptable to the Director-General for such inspections as are considered necessary.
- 4.2 A coincident annual inspection shall be carried out at the premises of an organisation approved for the purpose in accordance with HKAR-1 Sub-section 1.8-15 and certified by holders of Hong Kong Aircraft Maintenance Licences with Type Ratings valid for the particular aircraft type.

NOTE: The Director-General may accept a holder of Hong Kong Aircraft Maintenance License with Type Rating valid for the particular aircraft

type to carry out the coincident annual inspection and not necessarily at the premises of an organisation approved for the purpose in accordance with HKAR-1 Sub-section 1.8-15.

- 4.3 For aircraft operated for public transport, the coincident annual inspection shall be carried out at the premises of a suitably approved HKAR-145 organisation and certified by persons holding appropriate company authorisations valid for the particular aircraft type.

NOTE: (1) In the case of the renewal being completed abroad at a place where an organisation is not specifically approved for the purpose, the overseas organisation shall be one that is acceptable to the Director-General. The renewal process is to be predicated upon an inspection report prepared at the agreed site by the HKAR-1 Sub-section 1.8-15 organisation's nominated person. A copy of the report detailing the work required shall be sent to the Director-General. In such cases, the Director-General may decide that Airworthiness Officer involvement is necessary (see paragraph 2.3).

(2) The Director-General may accept a holder of Hong Kong Aircraft Maintenance License with Type Rating valid for the particular aircraft type to carry out the coincident annual inspection and not necessarily at the premises of an organisation approved for the purpose in accordance with HKAR-145.

- 4.4 In deciding the depth of the inspection and the extent of the work to be undertaken to maintain the airworthiness of the aircraft and to enable the recommendation for the renewal of the Certificate of Airworthiness to be made, the approved organisation shall take account of the following:
- (a) The age, storage conditions, total hours/cycles, areas and type of operation of the aircraft.
 - (b) Compliance with the requirements of the Approved Maintenance Schedule.
 - (c) Work certified in the relevant records.
 - (d) The periods between overhaul and any finite or service life limits, prescribed or approved by the Director-General, in respect of the aircraft and its parts.
 - (e) Such other requirements or instructions, approved by the Director-General relating to the maintenance of airworthiness.

- (f) Mandatory modifications and inspections prescribed by the Director-General, where appropriate, in respect of the aircraft and its parts (see HKAR-1 Sub-section 1.6-6).
 - (g) The manufacturer's recommendations in Service Bulletins, Maintenance Manuals, or equivalent documents.
 - (h) Compliance with the Type Certificate Data Sheet (TCDS).
- 4.5 Following the coincident annual inspection, an inspection report, in which any work which has been undertaken is detailed, shall be prepared, certified, and included in the aircraft records.
- 4.6 All work undertaken in connection with the renewal of the Certificate of Airworthiness of the aircraft shall be supervised by an organisation approved in accordance with HKAR-1 Sub-section 1.8-15. Before the work is finally certified, the approved organisation shall be satisfied that the work has been carried out, inspected, and tested where necessary, for conformity with the specifications, drawings and instructions relating to the approved design, and with the requirements for the continuing airworthiness of the aircraft and its equipment.
- NOTE: The Director-General may accept a holder of Hong Kong Aircraft Maintenance License with Type Rating valid for the particular aircraft type in lieu of the required supervision by the HKAR-1 Sub-section 1.8-15 approved organisation.
- 4.7 The recommendation for the renewal of the Certificate of Airworthiness shall be made on a form acceptable to the Director-General by the organisation. When completed, one copy shall be forwarded to the Director-General. A copy of the form shall be included in the aircraft records and an additional copy shall be retained by the organisation.
- 4.8 The Director-General may survey an aircraft during the coincident annual inspection. The Director-General may then decide on the extent of the investigation and on any additional work required to permit renewal of the Certificate of Airworthiness. The cost of any such additional survey shall be met by the applicant.
- 4.9 The Certificate of Airworthiness renewal recommendation may be anticipated by a maximum of 62 days from the date of expiry without loss of validity. If the Certificate of Airworthiness has expired the validity shall take effect from the date the submission is received and accepted by the Director-General.

5 **RECORDS AND LOG BOOKS**

- 5.1 Aircraft records in the form of log books, separate maintenance records forming part of log books, or maintenance records kept by any other method approved by the Director-General, shall be made available to the Director-General, if specifically requested by the Director-General.

NOTE: The Air Navigation (Hong Kong) Order 1995 requires that log books, and other documents which are identified and referred to in the log books (therefore, forming part of the log books), shall be preserved until a date two years after the aircraft, engine or variable pitch propeller has been destroyed or permanently withdrawn from use.

- 5.2 All relevant inspection records shall be made available to the Director-General, if specifically requested by the Director-General.

5.2.1 Inspection records shall not be destroyed without authorisation from the Director-General.

- 5.3 Full particulars of the work done relating to the renewal of the Certificate of Airworthiness shall be entered in the appropriate log book(s) or other approved maintenance records, and a Certificate of Release to Service shall be completed and attached or included, as appropriate (see HKAR-1 Sub-section 1.6-7).

5.3.1 When it is more convenient, particulars of the work done may be entered in a separate maintenance record which shall be certified in the same manner as that required for entries in the log books. The reference number of this record, and the place where it may be examined, shall be entered in the log books under a brief description of the particular work. The record thereafter forms part of the log book and a copy should be supplied to the owner.

NOTE: Compliance with Airworthiness Directives, Service Bulletins, modifications, component replacements and scheduled checks carried out at the time, must be individually referenced in the aircraft, engine or propeller log book as appropriate.

6 MANUALS

6.1 A check shall be made by the approved organisation or an appropriately licensed aircraft maintenance engineer to ensure that the Flight Manual is up to date, and any necessary action to bring it up to date shall be taken. Confirmation of the correct Flight Manual amendment status shall be provided to the Director-General. The Flight Manual shall be made available to the Director-General, if specifically requested by the Director-General.

NOTE: The term 'Flight Manual' includes any document accepted in place of a Flight Manual.

6.2 Maintenance, Overhaul and Repair Manuals used shall be up to date, and they shall be amended in accordance with the procedures set out in HKAR-1 Sub-section 1.7-4 to incorporate such amendments necessary to cover the physical state of the aircraft.

7 VALIDITY

Certificate of Airworthiness is normally renewed with a validity of 12 months.

SECTION 1.3

SUB-SECTION 1.3-8

‘A CONDITIONS’

1 INTRODUCTION

‘A Conditions’ for flight are prescribed in Schedule 2 of the Air Navigation (Hong Kong) Order 1995.

2 REQUIREMENTS

Before an aircraft flies under ‘A Conditions’, the aircraft and its engine(s) shall be certified as fit for flight. A certificate of fitness for flight shall be issued before flight in accordance with paragraph 3 of this Sub-section.

3 CERTIFICATE OF FITNESS FOR FLIGHT

3.1 The Certificate shall be as follows:

Nationality and Aircraft Serial
Registration Marks _____ Number _____ Engine _____ Engine S/N(s) _____

It is hereby certified that the aircraft defined hereon has been inspected and is fit for flight provided it is properly loaded.

This Certificate is valid until..... or until the airworthiness condition of the aircraft is altered, whichever is earlier.

Signed AML Licence No

Signed..... CAD Approval No

3.2 The period of validity shall be stated but shall not exceed 7 days.

3.3 The Certificate shall be issued in duplicate and one copy kept elsewhere than in the aircraft.

- 3.4 A Certificate of Fitness for Flight shall be issued only by the following:
- (a) The holder of an appropriately type rated HKAR-66 Aircraft Maintenance Licence which entitles him to issue that certificate; or
 - (b) An organisation approved by the Director-General under HKAR-145 where the Schedule of Approval refers to particular types of aircraft. The certifying staff who issues the certificate shall be a holder of an appropriately type rated HKAR-66 Aircraft Maintenance Licence in Category B1 or C.
 - i) Have completed a course of training which complies with HKAR-145 Section 4 Appendix 9 and relevant to the scope of the Authorisation with satisfactory examination results, and
 - ii) Have been trained and have passed an examination on relevant company procedures, or
- 3.5 If the original airworthiness condition of the aircraft is affected during the period of validity, the Certificate shall be re-issued.

SECTION 1.3

SUB-SECTION 1.3-9

‘B CONDITIONS’

1 INTRODUCTION

‘B Conditions’ for flight are prescribed in Schedule 2 of the Air Navigation (Hong Kong) Order 1995.

2 FLIGHT TEST RISK ASSESSMENT (FTRA)

2.1 The Director-General has adopted the technical contents of the FAA Order 4040.26B for FTRA.

2.2 FTRA shall be conducted and submitted to the Director-General for application for flights under ‘B Conditions’

2.3 Risk category shall be determined for the proposed flights in accordance with the FAA Order 4040.26B.

2.4 The risk category is classified as Low Risk, Medium Risk or High Risk.

3 REQUIREMENTS

3.1 Low Risk Flights

Flights under ‘B Conditions’ in low risk category shall be operated by an organisation approved by the Director-General. An application shall be made in writing to the CAD Airworthiness Office in accordance with paragraph 4 of this sub-Section.

3.2 Medium or High Risk Flights

Flights under ‘B Conditions’ in medium risk and high risk category may only be undertaken by organisations approved in accordance with HKAR-1 Sub-section 1.8-9.

4 FLIGHTS UNDER ‘B CONDITIONS’ IN LOW RISK CATEGORY

4.1 Application for approval for conducting flights under ‘B Conditions’ in low risk category shall be made by letter to the Director-General at least one month prior to the anticipated date of the intended flight(s).

4.2 Personnel

The applicant should nominate for acceptance by the Director-General, personnel specifically for the purposes of paragraph 4.1 in accordance with this paragraph 4.2:

- (a) Pilot In Command who should be rated in the type of aircraft in relation to the application; and
- (b) Signatory for the CAD Form DCA 569 who should hold a position within the applicant’s organisation compatible with the responsibilities involved.

4.3 Information required for the application:

NOTES: (1) The application package shall contain original or copies of the following documents, except item (a) which shall be original.

(2) The names of the documents are generic terms only. Documents have different names but serving the same purposes are acceptable.

(a) Flight Test Risk Assessment (FTRA) report

NOTE: The report shall contain a statement which declares that the FTRA is done in accordance with the latest revision of the FAA Order 4040.26 as published on the FAA website on the date the FTRA was conducted.

(b) Aircraft Radio Station Certificate

(c) Insurance policy

NOTE: The “insured” party shall be the operator.

(d) Flight Crew License of the Nominated Pilot In Command

(e) Relevant part of the Flight Manual

(f) Flight Plan

- (g) Photos of the Registration Marks if the aircraft is not registered in Hong Kong

NOTE: The aircraft shall not bear any marks which purport to indicate that it is registered in a country in which it is not in fact registered.

- (h) Form DCA 569 – Low Risk Flight under AN(HK)O B Conditions with Section 1 completed.
- (i) An applicant's procedure or commitment for ensuring the nominated signatory to complete and submit CAD Form DCA 569 to the Director-General within three working days, upon the completion of the flight(s).
- (i) Any other documents upon request by the Director-General.

Section 1.5

Continued Airworthiness – Responsibilities of the Type Design Organisation

SECTION 1.5

SUB-SECTION 1.5-2

MAINTENANCE REVIEW BOARD / MAINTENANCE TYPE BOARD

1 INTRODUCTION

1.1 This Sub-section 1.5-2 gives guidance on the procedures of conducting a Maintenance Review Board (MRB) or Maintenance Type Board (MTB) for a new aircraft type or type variant, as part of the Instructions for Continued Airworthiness (ICA). The MRB Report or MTB Report contains the minimum set of tasks, developed under the Maintenance Steering Group (MSG) logic process where applicable, required for an aircraft's maintenance schedule / programme.

2 PROCEDURES

- 2.1 The Director-General will inform the Type Design Organisation whether an MRB or MTB is to be established for a new aircraft type or type variant.
- 2.2 If an aircraft which has been subject to the MRB/MTB process is modified by a Supplementary Type Certificate (STC), the relevant systems, powerplant and structure must be reviewed to determine the maintenance requirements as part of the ICA, as a result of the modification.
- 2.3 The Director-General accepts the International MRB/MTB Process Standard (IMPS) document (Document No. IMPS), published by the International Maintenance Review Board Policy Board (IMRBPB), as the procedures for use in the MRB/MTB process.
- 2.4 The IMPS document can be located in the IMRBPB web site www.easa.europa.eu/easa-and-you/aircraft-products/international-maintenance-review-board-policy-board-IMRBPB.

SECTION 1.5

SUB-SECTION 1.5-3

MAINTENANCE, OVERHAUL AND REPAIR MANUALS

1 INTRODUCTION

- 1.1 Manuals containing information and recommendations necessary for the maintenance, overhaul and repair of aircraft, including engines and auxiliary power units, propellers, components, accessories, instruments, electrical and radio apparatus and their associated systems, and radio station fixed fittings, shall be provided by the constructor/manufacturer/Type Design Organisation to comply with the procedures outlined in this Sub-section for aircraft to be granted a Hong Kong Certificate of Airworthiness.
- 1.2 All relevant manuals must be available, unless otherwise agreed by the Director-General, for issue to a standard of completion acceptable to the Director-General at the time of issue of the Certificate of Airworthiness.

2 GENERAL

- 2.1 Except as otherwise agreed by the Director-General, manuals, produced in accordance with this Sub-section, shall be certificated and published under the authority of the appropriate Type Design Organisation and shall accurately reflect the design and production standard of the item concerned (see paragraph 1.1).
 - 2.1.1 The Director-General reserves the right to investigate the content of any certified manual and to require the embodiment of any revision or amendment which is considered necessary to satisfy the Requirements.
- 2.2 Engine, auxiliary power unit and propeller constructors and manufacturers of other components shall provide the aircraft Type Design Organisation with certified manuals which relate to those of their products installed in the aircraft.
- 2.3 All manuals shall be adequately illustrated and include such instructions and information considered necessary to meet the requirements of this Sub-section. Manuals complying with the applicable recommendations in Sub-section 1.7-4 would fulfil the requirements or other methods would be acceptable with the agreement of the Director-General.
- 2.4 Manuals conforming with the Specification for Manufacturers' Technical Data

- Air Transport Association of America - Specification No. 100, would also be acceptable as a basis for complying with this Sub-section, subject to the inclusion of any variations from the Specifications which may be required by the Director-General and which are defined to the applicant.

3 MANDATORY LIFE LIMITATIONS

- 3.1 The certification of aircraft, engines, propellers and auxiliary power units, often depends on safe lives being established for certain parts, failure of which could hazard the aircraft. They have previously been described in a number of ways; e.g. retirement, ultimate, or scrap lives, but are hereafter referred to as Mandatory Life Limitations.
- 3.2 There is no universal international convention for the location of an authoritative source of Mandatory Life Limitations in the aircraft publications. Because it is important for users of the equipment to be able positively to locate the information, the Director-General will make a statement in respect of each aircraft on Hong Kong register in an agreed document by incorporation of amendments or change sheets, giving a reference for each aircraft, engine, propeller and auxiliary power unit to the publications in accordance with paragraphs 3.3, 3.4 and 3.5 in which this information is promulgated.
- 3.3 For new certifications the Mandatory Life Limitations required under paragraph 3.1 shall be located in accordance with paragraphs 3.3.1 to 3.3.4 as applicable.
- 3.3.1 In the 'Airworthiness Limitations' section of the Maintenance Manual or other agreed document which forms part of the Instructions for Continued Airworthiness where such a document is required by the regulations under which certification is awarded.
- 3.3.2 Where an approved 'Airworthiness Limitations' section (or equivalent) does not exist, in agreed document(s)* which will be identified in accordance with paragraph 3.2.
- 3.3.3 Where the aircraft, or other product is of origin other than Hong Kong and the Director-General wishes to impose limitations which are in addition to, or different from, those approved by the certificating authority of the country of origin, then these changes shall be promulgated by:-

* In the case of engines, propellers and auxiliary power units it is recommended that these limitations are stated in either the Overhaul Manual or the Maintenance Manual (see Sub-section 1.7-4), with a suitable cross reference to the other. Additionally, the definition of a 'typical cycle' shall be stated in the Maintenance Manual and a cross reference included in the Overhaul Manual.

- (a) in the case of aircraft having an approved 'Airworthiness Limitations' section (or equivalent) in an agreed document by incorporation of amendments or change sheets which are approved by the Director-General;
 - (b) in the case of aircraft which do not have an approved 'Airworthiness Limitations' section (or equivalent), in an agreed document identified as in paragraph 3.2.
- 3.3.4 For any component for which a Mandatory Life Limitation has been established (engines, propellers, helicopter rotor head, airframe structure etc.) the definition of a 'typical cycle' or 'typical flight' (engine/propeller parameters, aircraft weight, forward speed, altitude, duration, etc.), in terms of the relevant parameters on which this life determination has been based, shall be stated in the document required under paragraph 3.3.1 or 3.3.2. The definition of a typical cycle of flight should be based on the best information (e.g. from development and certification flight testing) at the time of certification, and updated, as necessary, following service experience.
- 3.4 Where these Mandatory Life Limitations have been established in units other than flying hours or landings (e.g. cycles) and published in accordance with paragraphs 3.1, 3.2 and 3.3, the procedure for converting flying hours or landings, as applicable, into these units shall be given in the same documents.
- 3.5 Whatever the source, each Mandatory Life Limitation must be approved by the Director-General or by the responsible Authority of the country of origin. No alteration or deletion shall be made to any of the published Mandatory Life Limitations without prior approval of the Director-General.
- 3.6 Where any alterations in the published Mandatory Life Limitations are required by the Director-General, these shall be promulgated as follows:-

3.6.1 Normal Amendments to Mandatory Lives

- (a) In the case of aircraft or products having an approved 'Airworthiness Limitations' document, by incorporation of an amendment approved by the Director-General to that document.
- (b) In the case of products which do not have an approved 'Airworthiness Limitations' section or equivalent, by means of an amendment to the documents specified in accordance with paragraph 3.3.3(b).

3.6.2 Reductions in Mandatory Lives.

Immediate attention must be drawn to any reduction in a Mandatory Life Limitation.

4 REVIEW AND AMENDMENT OF MANUALS

4.1 Certified manuals shall be reviewed by the originator and where changes have been made affecting maintenance, overhaul and repair, permanent revisions or amendments shall be published. A copy of each revision or amendment shall be forwarded to the Director-General.

4.2 Permanent revisions or amendments or temporary revisions or amendments shall be distributed by the Type Design Organisation or manufacturer to registered holders of the manuals, together with the necessary instructions for embodiment and recording in the manuals. Each manual shall contain a statement which will indicate that the changing of data by uncertified revisions or amendments or temporary revisions or amendments invalidates the initial certification of the manual relative to the part revised.

4.3 Operators with appropriate approval may amend manuals without reference to the Type Design Organisation, provided that the technical substance of the change is within the terms of their approval. In this case the operator shall proceed as follows:-

- (a) Prepare a temporary or permanent revision or amendment in compliance with this Sub-section.
- (b) Provide the Director-General with a copy.
- (c) Incorporate the revision or amendment in the manuals and record the embodiment in a revision or amendment record, which is separate from that provided by the Type Design Organisation.

NOTE: Where operators wish to amend manuals, co-operation with the Type Design Organisation is recommended. This also applies where amendments to manuals are necessary due to the incorporation of Minor modifications (see HKAR-21).

4.4 The registered holder will be responsible for making the necessary arrangements with Type Design Organisations or manufacturers to ensure receipt of revisions or amendments to manuals and any Service Bulletins, or similar documents that may be issued from time to time.

5 MAINTENANCE PROGRAMMES

- 5.1 The Type Design Organisation (see Sub-section 1.6-2), shall be responsible for:-
- (a) The compilation of a list of the Maintenance Significant Items from an evaluation of the functions, failure modes and failure effects of the engine/APU and related systems.
 - (b) Taking account of (a), the establishment of a list of maintenance actions together with recommended frequencies and sampling points.
 - (c) The establishment of a programme for monitoring engine critical parts (see JAR-E) at the prescribed intervals.
 - (d) The evaluation of the effect of the operator's flight profile on engine/APU rotating parts or the provision of information on which such evaluation can be based (see Airworthiness Notice No. 44).
 - (e) The preparation of a submission for the aircraft Type Design Organisation's Minimum Equipment List (MEL) and co-operation in subsequent changes (see Sub-section 1.7-6).
- 5.2 When establishing the list of maintenance actions with recommended frequencies which should be carried out on the engine and APU, the total evidence available should be assessed, account being taken of:-
- (a) The evaluation required by paragraph 5.1(a).
 - (b) Any similarity of the design to existing types.
 - (c) The experience already gained, either as a result of flight testing or from route proving under conditions reasonably similar to those which will exist in service, or from previous service experience.
 - (d) The experience gained during simulated flight plan testing (e.g. durability bench tests).
 - (e) The experience gained on components during engine and rig testing.
 - (f) The extent of the provisions made for Engine Health Monitoring, and
 - (g) the submitted Minimum Equipment List.

6 VITAL POINTS

6.1 Vital Point

Any point on an aircraft at which single mal-assembly could lead to catastrophe, i.e. result in loss of aircraft and/or in fatalities.

6.2 Certain parts in an aircraft's structure or system (including controls and control systems) which are vital to the safety of the aircraft, are not only designed to achieve the appropriate high integrity but are also dependent upon specified maintenance actions to safeguard their integrity throughout the life of the aircraft. Maintenance tasks that involve the assembly or any disturbance of a vital point that, if errors occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft should be considered as flight safety sensitive maintenance tasks needing independent inspections in accordance with Sub-section 1.6-2.

6.3 For some aircraft, the vital points are identified and listed in the maintenance documents. For those aircraft where no such identification and listing of vital points has been provided, an operator with the necessary Design Approval or otherwise in consultation with a competent design organisation, may identify and list such points and apply to the Director-General to have the list incorporated in the aircraft maintenance documents. Provided such a list is accepted by the Director-General the operator need then carry out independent inspections following disturbance of the listed points only.

6.3.1 For rotorcraft, vital points shall be identified and the list shall be incorporated in the aircraft maintenance documents as described in paragraph 6.3.

6.3.2 For fixed wing aircraft, if no arrangement such as described in paragraph 6.3 has been agreed by the Director-General, the need for independent inspection of all control systems will remain.

SECTION 1.5

SUB-SECTION 1.5-8

**MANDATORY ACTION ON AIRCRAFT OPERATING IN
ACCORDANCE WITH A PERMIT TO FLY**

1 INTRODUCTION

- 1.1 This sub-section 1.5-8 prescribes the requirements and procedure for reporting, promulgating and implementing action declared as mandatory by the Director in respect of aircraft registered in Hong Kong and operating in accordance with a Permit to Fly.
- 1.2 The Permit to Fly for an aircraft registered in Hong Kong will cease to be in force if any required action, compliance end date or flying time limitations specified by the Manufacturers Alert Service Bulletin or UKCAA Mandatory Permit Directives (MPD) where applicable have not been complied with.

2 WORK AND CERTIFICATIONS

- 2.1 Work undertaken in incorporating a Mandatory Permit Directive or an Alert Service Bulletin shall be supervised by an Organisation approved by the Director for the purpose (see Section 1.8) or by a person appropriately authorised by the Director.
- 2.2 Full particulars of the work undertaken to incorporate the modification, or details results and work arising from the mandatory inspection, shall be entered in the appropriate log book, quoting the reference number of the appropriate document, e.g. Airworthiness Approval Note for a Major modification, Service Bulletin for a mandatory inspection.
- 2.3 All relevant records of modifications and mandatory inspection shall be made available to the Director for examination on request, and these shall not be destroyed without authorisation from the Director.

NOTE : The Air Navigation (Hong Kong) Order requires that log books, and other documents which are identified and referred to in the log books (therefore forming part of the log books) shall be preserved until a date two years after the aircraft, the engine or the variable pitch propeller, as the case may be, has been destroyed, or permanently withdrawn from use.

- 2.4 Where an owner or operator wishes to develop an alternative means of

compliance, the written agreement of the Director will be required. The aircraft technical records and where applicable the organisation's modification system shall reflect the change from the MPD or the Manufacturers Alert Service Bulletin.

3 PROMULGATION

- 3.1 A collated volume of UK MPDs will be available from UKCAA Printing and Publications, Cheltenham. Individual MPDs of an emergency nature will be distributed to all registered owners of the type of aircraft concerned through the CAD Airworthiness Office.

4 REPORTING

- 4.1 The Director should be notified of any unsafe condition that has occurred, whether or not this was identified from an incident or an occurrence.

The following organisations, will need to notify the Director of incidents of airworthiness significance.

- (a) A CAD approved design organisation or manufacturer of an aircraft type (including microlights).
 - (b) Any maintenance organisation or nominated person(s) engaged in the maintenance of such aircraft.
 - (c) In the case of military aircraft, organisations holding approval for a type where, through their liaison with the responsible design organisation (where such an organisation still provides design support) they have knowledge of newly promulgated mandatory action (e.g. Special Flying Instructions, Special Technical Instructions).
- 4.2 The purveyor or manufacturer of an aircraft kit should notify the Director of any unsafe condition of which he has knowledge.
- 4.3 The owner, pilot or operator of an aircraft operating on a Permit to Fly should notify the appropriate organisation in 4.1 or 4.2 above of an unsafe condition but may also voluntarily notify the Director directly via the CAD Occurrence Reporting Scheme or other appropriate means.
- 4.4 All incidents should be reported to the Director as soon as possible, and not more than 96 hours to the CAD Airworthiness Office.

Section 1.6

Continued Airworthiness – Responsibilities of the Operator

SECTION 1.6

SUB-SECTION 1.6-2

MAINTENANCE OF AIRCRAFT

1 INTRODUCTION

1.1 In accordance with the Air Navigation (Hong Kong) Order 1995 an aircraft registered in Hong Kong in respect of which a Certificate of Airworthiness in the Transport Category (Passenger), Transport Category (Cargo) or Aerial Work Category is in force, shall not fly unless it has been maintained in accordance with a Maintenance Schedule approved by the Director-General and a Certificate of Maintenance Review issued, certifying that maintenance reviews have been carried out. Approved Maintenance Schedules are also required for any other aircraft registered in Hong Kong.

1.2 Reserved.

2 GENERAL

2.1 Reserved.

2.2 Reserved.

3 MAINTENANCE SCHEDULE

3.1 CAD 452, Aircraft Maintenance Schedules and Programmes Information and Guidance, provides the information and guidance for the compilation of Maintenance Schedule.

3.2 Reserved.

4 CERTIFICATE OF MAINTENANCE REVIEW

4.1 An aircraft registered in Hong Kong in respect of which a Certificate of Airworthiness in the Transport Category (Passenger), Transport Category (Cargo) or Aerial Work Category is in force, shall be subject to a maintenance review at intervals specified in the Approved Maintenance Schedule or the relevant Approval Document of the Maintenance Schedule, as appropriate. At the completion of a review, a Certificate of Maintenance Review shall be issued.

4.2 The Signatory shall only issue a Certificate of Maintenance Review when satisfied, at the time of the review, that the following aspects of maintenance have been carried out:

- (a) All maintenance specified in the Approved Maintenance Schedule has been carried out within the prescribed time periods and any extension to limiting periods is in accordance with procedures approved by the Director-General.
- (b) All modifications and inspections deemed mandatory by the Director-General have been carried out within the prescribed time periods and any extension to limiting periods has been authorised by the Director-General. Due account must be taken of any repetitive inspections.
- (c) All defects entered in the Technical Log have been rectified or deferred in accordance with procedures approved by the Director-General.
- (d) All Certificate of Release to Service required have been issued in accordance with the procedures of Sub-section 1.6-7 or HKAR-145 as necessary.

- NOTES:
- (1) The time intervals for the Certificate of Maintenance Review will be specified on a calendar 'not exceed' basis only and therefore, it is not necessarily intended to align with any check.
 - (2) For aircraft the Maximum Total Weight Authorised of which does not exceed 2730 kg the maintenance review may coincide with the annual check, but must not exceed 12 calendar months period.
 - (3) The Certificate of Maintenance Review requires only one signature.

5 CERTIFICATE OF MAINTENANCE REVIEW FORMAT

5.1 The Certificate of Maintenance Review shall be in the following format:

CERTIFICATE OF MAINTENANCE REVIEW

Aircraft Type

Nationality & Registration Mark

Certified that a maintenance review of this aircraft and such of its equipment as

is necessary for its airworthiness has been carried out in accordance with the requirements of the Air Navigation (Hong Kong) Order 1995 for the time being in force.

The next maintenance review is due

Signed

CAD Approval/Licence

Date

Organisation

6 CERTIFICATE OF MAINTENANCE REVIEW SIGNATORIES

6.1 A Certificate of Maintenance Review shall be issued only by:

- (a) The holder of an aircraft maintenance engineer's licence granted under the Air Navigation (Hong Kong) Order 1995 being a licence which entitles the holder to issue that certificate; or
- (b) The holder of an aircraft maintenance engineer's licence granted under the law of a country other than Hong Kong and rendered valid under the Air Navigation (Hong Kong) Order 1995 in accordance with the privileges endorsed on the licence; or
- (c) A person whom the Director-General has authorised to issue a Certificate of Maintenance Review in a particular case and in accordance with that authority; or
- (d) A person approved by the Director-General as being competent to issue such certificates and in accordance with that approval.

6.2 In approving a Maintenance Schedule, the Director-General will specify who may issue a Certificate of Maintenance Review.

- (a) For an Air Operator's Certificate holder also approved in accordance with HKAR-145 requirements for the type of aircraft reviewed, the signatory will be a person in the organisation authorised in accordance with the paragraphs 6.3 to 6.7.
- (b) For an Air Operator's Certificate holder having the fleet technical management of the aircraft handled by a HKAR-145 maintenance

organisation approved for the type, the signatory will be a person in that HKAR-145 organisation authorised in accordance with the paragraphs 6.3 to 6.7.

- (c) For an Air Operator's Certificate holder carrying out its own maintenance review but not HKAR-145 approved, the signatory will be a person in the organisation holding qualification and experience prescribed in the paragraphs 6.3 to 6.7.
- (d) For an Air Operator's Certificate holder having the fleet technical management of the aircraft handled by an organisation that is not HKAR-145 approved, the signatory will be a person in the organisation holding qualification and experience prescribed in the paragraphs 6.3 to 6.7.

6.3 Authorisations to issue Certificate of Maintenance Review (CMR) shall be granted only to persons who comply with subparagraphs (a) to (e).

- (a) Have an appropriate HKAR-66 category B1, B2 or C licence in the subcategory of the aircraft reviewed.

Note 1: Subcategories of B1 mean B1.1 Aeroplanes Turbine, B1.2 Aeroplanes Piston, B1.3 Helicopters Turbine and B1.4 Helicopters Piston. For B2 and C licences where there are no subcategories, the holder should also have endorsed a type rating on an aircraft in the same group i.e. aeroplane piston engines, aeroplane turbine engines, helicopter piston engines or helicopter turbine engines.

Note 2: If the CMR signatory has obtained an aircraft type-rated HKAR-66 subcategory B1.1 or B1.3 or category B2 licence and exercised the privileges of issuing CMR, then he/she is also qualified to issue CMR for other aircraft types in the same subcategory B1.1 or B1.3 or category B2 licence, provided they have completed respective aircraft type training of at least Level I of ATA specification 104.

HKAR-145 does not require a category C certifying staff for the certification of simple light aeroplanes as category B3 or subcategory B1.2 or B1.4 covers all maintenance.

Note 3: In the case of a B1 / B2 licence with limitations, the licence must be at least dual trade as per HKAR-66. For example, a B1 licence with a limitation on electrical power but includes airframes and engines privileges is acceptable. A B1 licence that only includes engines but has no privileges on airframe and electrical power is not acceptable.

- (b) Have at least five years experience in continuing airworthiness. The experience gained should include a broad range of appropriate continuing airworthiness related activities e.g. review of the accomplishment of: pre-flight inspections, rectification or deferral

of defects in accordance with Minimum Equipment List / Configuration Deviation List, maintenance tasks per approved maintenance schedule, Airworthiness Directives, modifications, repairs and flight tests when necessary; and also analysis of the effectiveness of approved maintenance schedule etc.

Quality Department staff may gain experience through carrying out relevant audits and product samples.

Note: "Continuing airworthiness" means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation.

- (c) Hold a position within an approved organisation independent from the airworthiness management process or with overall responsibility for the airworthiness management process of complete aircraft. The following personnels are acceptable.
- (I) Accountable Manager or the Nominated post holder for continuing airworthiness.
 - (II) A person independent of the continuing airworthiness management process for the aircraft under review, such as Technical Services department staff who have airworthiness review responsibilities for a different fleet of aeroplanes or helicopters compared to the type(s) for which they are normally involved.
 - (III) The person having the overall management responsibility for the department that undertakes the continuing airworthiness management tasks, of which details can be referred to paragraph 4.2.
 - (IV) Quality Department staff may be eligible provided they do not carry out audits on any airworthiness review process that they have been involved in, and neither perform an aircraft survey nor carry out a product audit on that aircraft within the last 28 days before the date of the review.
 - (V) Maintenance personnel of a HKAR-145 approved maintenance organisations may be nominated as airworthiness review staff as long as they are not involved in the airworthiness management of the aircraft. These personnel should not have been involved in the release to

service of that particular aircraft since the last airworthiness review to avoid possible conflicts of interest.

- (d) For approved organisations with less than or equal to 10 maintenance staff and are unable to meet the requirements of Para (c), any of the following alternative arrangements is acceptable:
- (I) The person shall not have been involved in the release to service of that particular aircraft within the last 28 days before the date of review.
 - (II) Independence shall be achieved through dedicated procedural arrangement. The review can be conducted by two authorised persons so that one reviews the work involved the other but not his/her own. In such case, the Certificate of Maintenance Review shall be signed by the two authorised persons concerned and the work certified by each individual shall be clearly identified on the Certificate.
 - (III) Contract out the issue of Certificate of Maintenance Review.
- (e) (I) Have successfully completed formal aeronautical maintenance training i.e. training supported by evidence addressing the following subjects:
- (i) Relevant parts of initial and continuing airworthiness regulations;
 - (ii) Relevant parts of operational requirements and procedures, if applicable;
 - (iii) The organisation's exposition;
 - (iv) Knowledge of a relevant sample of the type(s) of aircraft gained through a formalised training course. These courses should be to at least HKAR-66 Level 1 general familiarisation standard.

Note: 'Relevant sample' means that the courses should cover typical systems embodied in those aircraft within the organisation's

scope of approval. In practical terms, as a minimum this should cover at least one aircraft type for each subcategory.

- (II) Have achieved the agreed standard in an examination e.g. oral assessment set by the organisation in conformity with HKAR-145 Section 4 Appendix 9 and based upon subparagraphs (i) to (vi).
 - (i) Legislation and requirement for the issue of Certificate of Maintenance Review and the responsibilities of a signatory of the Certificate of Maintenance Review.
 - (ii) The form and implementation of the Approved Maintenance Schedule for the type of aircraft concerned.
 - (iii) The details of the systems and procedures contained in the organisation exposition and the associated documents, together with the requirements of the organisation for their implementation.
 - (iv) The maintenance support systems which are related to continuing airworthiness, e.g. reliability programmes, defect control, production control, development engineering, training, certification authority and modification control.
 - (v) The form and use of the aircraft Technical Log, deferred defect log, fuel and instrument log, and the Minimum Equipment List.
 - (vi) The form and implementation of mandatory inspections/modifications as required by HKAR-1 Sub-section 1.6-6 for the type of aircraft reviewed.
- 6.4 Prospective Certificate of Maintenance Review signatory can only be issued with an authorisation when formally accepted by the Director-General e.g. via approval of the respective exposition after satisfactory completion of a maintenance review under supervision.
- 6.5 The approved organisation shall ensure that Certificate of Maintenance Review signatory can demonstrate appropriate recent continuing airworthiness management experience.

- 6.6 Certificate of Maintenance Review signatories shall be identified by listing each person in the organisation exposition together with their authorisation reference.
- 6.7 The approved organisation shall maintain a record of all Certificate of Maintenance Review signatories which shall include details of any appropriate qualification held together with a summary of relevant continuing airworthiness management experience and training and a copy of the authorisation. This record shall be retained until two years after the Certificate of Maintenance Review signatory have left the organisation.

7 CERTIFICATE OF RELEASE TO SERVICE

7.1 A Certificate of Release to Service shall be issued after overhauls, repairs, replacements, modifications and mandatory inspections have been carried out on an aircraft, which is registered in Hong Kong and has a Certificate of Airworthiness in force, except as follows:

- (a) A Certificate of Release to Service is not required for certain prescribed repairs or replacements carried out on an aircraft not exceeding 2730 kg Maximum Total Weight Authorised with a Certificate of Airworthiness in the Private or Special Categories, provided the work has been carried out personally by the owner or operator holding a pilot's licence. Details of the prescribed repairs or replacements permitted are contained in the Air Navigation (General) Regulations.
- (b) If a repair or replacement of a part of an aircraft is carried out when the aircraft is at such a place that it is not reasonably practicable:
- (i) to carry out the work in a manner that a Certificate of Release to Service may be issued, or
- (ii) for the Certificate to be issued at that particular place, the Commander may fly the aircraft, if, in his opinion, it is safe to do so, to the nearest place at which a Certificate may be issued.

NOTE: The Air Navigation (Hong Kong) Order 1995 prescribes that in such cases, written particulars of the flight and the reasons for making it are to be given to the Director-General within ten days thereafter.

7.2 A Certificate of Release to Service shall be issued at the completion of any Scheduled Maintenance Tasks specified by an Approved Maintenance Schedule on an aircraft which is registered in Hong Kong and has a Certificate

of Airworthiness in any category (except Special Category) except that:

- (a) A Certificate of Release to Service is not required for certain Scheduled Maintenance Tasks carried out on an aircraft not exceeding 2730 kg Maximum Total Weight Authorised with a Certificate of Airworthiness in the Private Category, provided the inspection has been carried out personally by the owner or operator holding a pilot's licence.
- (b) The Certificate of Release to Service issued at the completion of any Scheduled Maintenance Tasks shall be signed in the licence/authorisation category relevant to the work speciality of the particular Scheduled Maintenance Tasks.

7.3 A Certificate of Release to Service shall only be issued for a particular overhaul, repair, replacement, modification, mandatory inspection or Scheduled Maintenance Tasks when the signatory is (signatories are) satisfied that the work has been properly carried out, having due regard to the use of:

- (a) up-to-date and approved airworthiness data including manuals, drawings, specifications, mandatory modifications/ inspections and where applicable, company procedures;
- (b) recommended tooling and test equipment which is currently calibrated where applicable; and
- (c) a working environment appropriate to the work being carried out.

7.4 Certificate of Release to Service for aircraft with either a Transport Category (Passenger) or Transport Category (Cargo) Certificate of Airworthiness and when used for Commercial Air Transport shall be in accordance with HKAR-145.

7.5 For Non Commercial Air Transport purposes, the Certificate of Release to Service shall contain particulars of work done or the inspection completed and the organisation and place at which the work was carried out. Depending upon the application of the certificate, details of the aircraft type, registration, component type, part number and serial number shall be recorded as applicable. The certification shall be worded in the following manner:

'The work recorded above has been carried out in accordance with the requirements of the Air Navigation (Hong Kong) Order 1995 for the time being in force and in that respect the aircraft/equipment is considered fit for release to service.'

NOTE: Mandatory inspections, for the purpose of this Sub-section 1.6-2, are those inspections classified as mandatory by the Director-General, where the inspection itself is the work.

- 7.6 The Certificate of Release to Service shall be signed by a person specified in paragraph 8, except that the Director-General may direct which of these persons shall sign in a particular case. The signatory/signatories shall record licence/approval/authorisation reference number as appropriate, together with the date.

8 CERTIFICATE OF RELEASE TO SERVICE SIGNATORIES

- 8.1 For aircraft with either a Transport Category (Passenger) or Transport Category (Cargo) Certificate of Airworthiness and when used for Commercial Air Transport, a Certificate of Release to Service shall only be issued by appropriately authorised staff on behalf of the HKAR-145 Approved Maintenance Organisation, in accordance with procedures specified in the Maintenance Organisation Exposition.

- 8.2 For Non Commercial Air Transport purposes, a Certificate of Release to Service shall be issued only by one of the following:

- (a) The holder of an aircraft maintenance engineer's licence granted under the Air Navigation (Hong Kong) Order 1995, being a licence which entitles the holder to issue that certificate.
- (b) The holder of an aircraft maintenance engineer's licence granted under the law of a country other than Hong Kong and rendered valid under the Air Navigation (Hong Kong) Order 1995 in accordance with the privileges endorsed on the licence.
- (c) The holder of an aircraft maintenance engineer's licence or authorisation as such an engineer granted or issued by or under the law of any Contracting State other than Hong Kong in which the overhaul, repair, replacement, modification or inspection has been carried out, but only in respect of aircraft of which the Maximum Total Weight Authorised does not exceed 2730 kg and in accordance with the privileges endorsed on the licence.

NOTE: 'Contracting State' means any State which is a party to the Convention on International Civil Aviation at Chicago on 7th December 1944.

- (d) A person approved by the Director-General as being competent to issue such Certificates, and in accordance with that approval.

(e) A person whom the Director-General has authorised to issue the Certificate in a particular case, and in accordance with that authority.

8.3 In relation only to the adjustment and compensation of direct reading magnetic compasses, the holder of an Airline Transport Pilot's Licence (Aeroplanes), or a Flight Navigator's Licence granted or rendered valid under the Air Navigation (Hong Kong) Order 1995 may also issue a Certificate of Release to Service.

9 INDEPENDENT INSPECTION

9.1 The procedures outlined in this paragraph shall be applied after any flight safety sensitive maintenance task. Maintenance tasks that involve the assembly or any disturbance of a control system or vital point (See HKAR-1 Sub-section 1.5-3 for vital points) that, if error occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft are considered as flight safety sensitive maintenance tasks.

9.2 Definitions

9.2.1 Control System

A system by which the flight path, attitude, or propulsive force of an aircraft is changed, including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

9.2.2 Independent Inspection

An inspection first made by an authorised person signing maintenance release who assumes full responsibility for the satisfactory completion of the work, before being subsequently inspected by an independent qualified person who attests to the satisfactory completion of the work recorded and that no deficiencies have been found. The independent qualified person is independent if he/she was not involved in doing the work being inspected.

9.3 Procedures - General

9.3.1 An independent inspection should be carried out by at least two persons, to ensure correct assembly, locking and sense of operation. A technical record of the inspections should contain the signatures of both persons before a Certificate of Release to Service has been issued after overhaul, repair, replacement, modification or adjustment and, in any case, before the first flight.

NOTE: Dependent on the extent of the work it may be possible to limit the independent inspection of a control system or vital point to that part of the system which has been disturbed.

9.3.2 An independent inspection should ensure correct assembly, locking and sense of operation. When inspecting control systems that have undergone maintenance, the independent qualified person should consider the following points independently:

- (1) all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking;
- (2) the system as a whole should be inspected for full and free movement over the complete range;
- (3) cables should be tensioned correctly with adequate clearance at secondary stops;
- (4) the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense; and
- (5) if different control systems are interconnected so that they affect each other, all the interactions should be checked through the full range of the applicable controls.

9.3.3 If a control system or vital point is disturbed after completion of the independent inspection, that part which has been disturbed shall again be undergone independent inspection and a Certificate of Release to Service issued before the aircraft flies.

9.4 Independent Inspection

9.4.1 Authorised Person qualified to make the first inspection is as follows:

- (a) Aircraft engineer appropriately licensed in HKAR-66 Category B; or
- (b) Person employed by an approved organisation, who is appropriately authorised to make such inspection and to certify the task itself in accordance with company procedures.

9.4.2 Independent qualified person qualified to make the subsequent inspection is as follows:

- (a) Person holding certification privilege as an authorised person; or
- (b) Person employed by an approved organisation, who is suitably

qualified to make such inspection in accordance with company procedures; or

- (c) Commander holding a limited certification authorisation granted by the responsible HKAR-145 Approved Maintenance Organisation, if the aircraft is being used for the purpose of Commercial Air Transport; or
- (d) Pilot licensed for the type of aircraft concerned if the aircraft is not being used for the purpose of Commercial Air Transport; or
- (e) For aircraft not maintained by a HKAR-145 Approved Maintenance Organisation, the person who has been assessed by an authorised person can be a competent person to perform such inspection. In general, completion of the relevant aircraft type training, followed by documented proof (such as practical training or Record of Experience) of satisfactory participation in similar work would be acceptable.

10 RETENTION OF MAINTENANCE RECORDS

10.1 When all the relevant work has been carried out, a Certificate of Release to Service shall be entered in/attached to the appropriate log book and signed by the authorised persons.

- (a) Where it is more convenient, the required particulars may be entered in a separate record, but an entry shall be made in the appropriate log book, containing a summary of the work carried out and a cross-reference to the document containing the Certificate of Release to Service.
- (b) Where an alternative record system has been agreed, the format and location of such certificates shall be in accordance with that agreement.
- (c) Certificate of Maintenance Review shall be issued in duplicate. One copy shall be carried in the aircraft and the other copy shall be kept elsewhere than in the aircraft for a period of not less than two years from the date of issue or for such periods as may be otherwise agreed.

NOTE: (1) The Air Navigation (Hong Kong) Order 1995 requires that log books, and other documents which are identified and referred to in the log books (therefore forming part of the log books) shall be preserved until a date two years after the aircraft, the engine or the variable pitch propellers, as the case may be, has been destroyed, or permanently withdrawn from use, except that the Director-General may consider a

different retention period in a particular case.

- (2) For aircraft operated for the purpose of Commercial Air Transport in accordance with CAD 360, the operator shall ensure that maintenance records are retained in accordance with CAD 360 and/or HKAR-145 as appropriate.

10.2 The operator shall ensure that the following records are kept for the periods mentioned in paragraph 10.3:

- (a) The total time in service (hours, calendar time and cycles, as appropriate) of the aircraft and all life-limited components;
- (b) The current status of compliance with all mandatory continuing airworthiness information;
- (c) Appropriate details of modifications and repairs to the aircraft and its major components;
- (d) The time in service (hours, calendar time and cycles, as appropriate) since last overhaul of the aircraft or its components subject to a mandatory overhaul life;
- (e) The current status of the aircraft's compliance with the Approved Maintenance Schedule; and
- (f) The detailed maintenance records to show that all requirements for signing a Certificate of Release to Service have been met.

10.3 The records referred to in paragraph 10.2 (a) to (e) shall be kept until a date two years after the unit to which they refer has been permanently withdrawn from service, and the records in paragraph 10.2 (f) for a minimum period of three years after the signing of the Certificate of Release to Service.

10.4 In the event of a temporary change of operator, the records shall be made available to the new operator. In the event of any permanent change of operator, the records shall be transferred to the new operator.

10.5 Records kept and transferred in accordance with paragraph 10.4 shall be maintained in a form and format that ensures readability, security and integrity of the records at all times.

- NOTES:
- (1) The form and format of the records may include, for example, paper records, film records, electronic records or any combination thereof.
 - (2) Guidance regarding electronic aircraft continuing airworthiness records is included in the ICAO Airworthiness Manual (Doc 9760)

SECTION 1.6**SUB-SECTION 1.6-6****AIRWORTHINESS DIRECTIVES****1. PURPOSE**

The owners/operators shall comply with the procedures set out in this Sub-section 1.6-6 with respect to airworthiness directives engaged in the maintenance of aircraft or in the maintenance of aircraft components to be fitted to such aircraft.

2. INTRODUCTION

2.1 An Airworthiness Directive (AD) is a document issued or adopted by the Director-General to mandate the actions to be performed to restore an acceptable level of safety to an aircraft when an unsafe condition has been identified. The corrective action can include any of the following and be addressed against the aircraft, engine, propeller, part or appliance:

- repair;
- removal from service;
- design change;
- inspection;
- change to the limitations or procedures associated with a product or equipment (Aircraft Flight Manual, life limits, Certification Maintenance Requirements etc.).

NOTE: Where the term 'product' is used in this Sub-section it includes aircraft, engines and propellers and the term 'equipment' includes parts and appliances.

2.2 The provisions of Article 8(7) of the Air Navigation (Hong Kong) Order 1995 ('the Order') are such that a Certificate of Airworthiness (C of A) issued in respect of an aircraft registered in Hong Kong will cease to be in force until any modification or inspection, being a modification or inspection required by the Director-General, is completed.

2.3 The provisions of Article 62(4) of the Order are such that the Director-General may, on sufficient grounds being shown, vary a Flight Manual, Performance Schedule, or other document incorporated by reference in a C of A. Furthermore, under the provisions of Article 7 of the Order an aircraft shall not fly unless any conditions subject to which the C of A was issued or rendered valid are complied with.

- 2.4 For the purpose of compliance with Articles 8(7) and 62(4), a modification, inspection or change to approved documentation required by the Director-General is one which has been so classified as mandatory or issued as an AD, by the Director-General. An AD is the means by which mandatory status is conferred on any modification, inspection, repair, life limit, or approved documentation.
- 2.5 In certain instances, requirements for mandatory modifications, inspections and changes to approved documentation are issued in respect of engines, propellers and equipment manufactured by one ICAO Contracting State fitted to aircraft designed by another ICAO Contracting State on the Hong Kong register. Owners/operators are therefore reminded to ensure the total requirements for a complete aircraft including its engines, propellers and equipment have been reviewed and complied with.

3. DEFINITIONS

For the purpose of this sub-part, the following definitions shall apply:

- 3.1 “Civil Aviation Department (CAD) AD” means an AD issued by the Director-General.
- 3.2 “Non-CAD AD” means an AD issued by a civil aviation authority other than the Director-General.

4. COMPLIANCE

The AD required to be complied with on an aircraft depends upon the certification basis (airworthiness standards) of that particular aircraft, upon which the Hong Kong C of A is issued. The Hong Kong certification basis of the aircraft is prescribed in the associated CAD Type Certificate Data Sheet (TCDS).

- 4.1 The following AD are classified as mandatory by CAD and should be complied with at all times:
- (a) CAD AD.
 - (b) Non-CAD AD issued by the State of Design as prescribed in CAD TCDS.
 - (c) Non-CAD AD issued by the State of Design of equipment.

NOTE: For products designed in EU States, the AD of the States of Design issued prior to 28 September 2004 are adopted by EASA. AD issued after 28 September 2003 for products of EU design are published as AD approved directly by EASA.

**5. REPETITIVE INSPECTION REQUIRED UNDER AD FOR NON
COMMERICAL AIR TRANSPORT**

5.1 When an AD is classified as mandatory in accordance with paragraph 2, and has the following or similar clauses in the text:-

- (a) a repetitive inspection periodicity of not exceeding 24 hours elapsed time.
- (b) a clause/paragraph which allows the pilot to carry out the inspection;
the authorisation contained in paragraph 5.2 may be used.

5.2 The Director-General in exercise of his powers under Article 11(6)(d) of the Order may authorise, a pilot, as a person competent to issue a Certificate of Release to Service in respect of a mandatory inspection required by an AD where the inspection recurs at periods not exceeding 24 hours elapsed time, subject to the following conditions:-

- (a) The pilot must hold a Group or Type rated licence applicable to the type quoted in the inspection.
- (b) The pilot must have sufficient technical knowledge and have received specific training to provide that person with the competence to accomplish the inspection which may also require the use of simple visual inspection aids.
- (c) The specific training must be provided by an appropriately licensed aircraft maintenance engineer or organisation approved by the Director-General for that purpose.

5.3 When certifying an inspection in accordance with paragraph 5.2 the certifying signature will be that of the pilot followed by his or her licence number.

6. ALTERNATIVE MEANS OF COMPLIANCE (AMOC)

6.1 Application of AMOC

6.1.1 An applicant for the approval of an AMOC to that specified in an AD shall complete CAD Form (DCA 571) and submit a request to the Director-General containing at least the following information:

- (a) The make, model, and serial number of the aircraft or aircraft component to which the AD applies; and
- (b) Substantiating data to demonstrate that a level of safety equivalent to that of the AD, as the case may be, can be achieved by the proposed AMOC; and
- (c) Such further particulars as the Director-General may require relating to the aircraft or aircraft component, or the approval of an AMOC.

6.1.2 The Director-General may approve an AMOC by issuing a variation pursuant to Article 98(11)(a) of the Order if the Director-General is satisfied that the AMOC provides an equivalent level of safety to that achieved through compliance with the requirements in the AD.

6.2 Acceptance of Non-CAD AMOC

6.2.1 AMOC issued by the authority of a non-CAD AD for the product/equipment is adopted by the Director-General.

6.2.2 Product/equipment serial number specific AMOC may be issued by a Design Organisation approved under HKAR-21. The AMOC is limited to a single application to a specific repair with product/equipment serial number specific. The AMOC shall be supported by a corresponding AMOC issued by the authority of the non-CAD AD for the concerned product/equipment.

SECTION 1.6**SUB-SECTION 1.6-7****CERTIFICATION OF INSPECTIONS, OVERHAULS,
MODIFICATIONS, REPAIRS AND REPLACEMENTS****1 INTRODUCTION**

In accordance with the Air Navigation (Hong Kong) Order 1995 (AN(HK)O), an aircraft registered in Hong Kong, being an aircraft in respect of which a Certificate of Airworthiness issued or rendered valid under the AN(HK)O is in force, shall not fly unless there is in force a Certificate of Release to Service issued in respect of any overhauls, repairs, replacements, modifications, maintenance, mandatory inspections or scheduled maintenance inspections to the aircraft or any part of the aircraft or such of its equipment as is necessary for the airworthiness of the aircraft. In addition, a Certificate of Release to Service is required for all such work carried out on radio equipment and equipment specified in Schedule 6 of the AN(HK)O. Certain exclusions are identified in paragraph 3.1. This Sub-section 1.6-7 concerns inspections, overhauls, modifications, repairs and replacements applicable to aircraft and, where appropriate, to components, engines, propellers, radio apparatus, accessories, instruments, equipment, their installations and the issue of Certificates of Release to Service thereto.

NOTE: Owners, operators, and organisations undertaking overhaul/maintenance on aircraft should ensure that the constructor of each type of aircraft is informed of their names and addresses to facilitate distribution of the documents notifying mandatory modifications and inspections.

**2 INSPECTIONS, OVERHAULS, MODIFICATIONS, REPAIRS AND
REPLACEMENTS****2.1 General**

2.1.1 Inspections, overhauls, modifications, repairs, and replacements shall be carried out in accordance with the approved manuals, drawings and schedules related thereto, and any other documents required or recognised, by the Director-General.

2.1.2 Further, in the case of structural repairs to an aircraft, where the repairs are of a major nature, or not covered in the particular approved manual, the approved organisation or the appropriately licensed aircraft maintenance engineer concerned, shall advise the Director-General of the nature of the repairs before the work commences (See Hong Kong Airworthiness Notice No. 29 for address information). Repair schemes, not previously approved by the Director-General, will be investigated as modifications in accordance with the procedures in HKAR-21 Subpart D.

2.1.3 Replacement parts shall be certified by an organisation approved by the Director-General for the purpose, or by an alternative procedure agreed by the Director-General.

2.2 Work and Certifications

2.2.1 Inspection, overhaul, modification, repair, and replacement work shall be supervised by an organisation approved by the Director-General for the purpose (see HKAR-1 Section 1.8 or HKAR-145) or by an appropriately licensed aircraft maintenance engineer.

2.2.2 Where the work is to be carried out on an aircraft registered in Hong Kong by an organisation located outside Hong Kong not approved by the Director-General, suitable arrangements shall be agreed with the Director-General (see paragraph 7).

2.2.3 Depending on the nature of the overhaul, modification, repair, or replacement made to the aircraft, the following may be required by the Director-General:-

- (a) The aircraft to be weighed, and an amended Weight and Centre-of-Gravity Schedule, or its equivalent as prescribed in HKAR-1 Sub-section 1.7-10 to be prepared.
- (b) A Certificate of Fitness for Flight issued (See HKAR-1 Sub-section 1.3-8) and the aircraft to be tested in flight to schedules approved by the Director-General in accordance with HKAR-1 Sub-section 1.6-8.

2.2.4 Before a Certificate of Release to Service or its equivalent is issued, the work shall have been inspected, and tested where necessary, in conformity with the specifications, drawings and instructions relating

to the modification or mandatory inspection. Where appropriate, the instructions shall include a copy of the approval document for the relevant modification or mandatory inspection.

2.2.5 The aircraft shall be made available to enable the Director-General to inspect it as necessary.

2.2.6 When the work has been fully inspected, and tested where necessary, for conformity with the specifications, drawings and instructions relating to the overhaul, modification, repair or replacement, the necessary certification and, where appropriate, log book entries shall be completed in accordance with paragraph 5. Where applicable the instructions shall include a copy of the relevant approval document. Where the work has been carried out by an organisation, in accordance with paragraph 2.2.2, the organisation for whom the work has been carried out shall raise a Certificate of Release to Service where such is required, using a suitable certificate supported by the Responsible Authority of the State concerned, as evidence that an acceptable standard has been achieved.

2.2.7 Certificate of Conformity may be issued to certify that aeronautical materials and/or parts have been processed (e.g. protective and heat treatment) and inspected in conformity with acceptable specifications/standards. Such arrangement shall be stated in the organisation exposition and approved by the Director-General.

3 CERTIFICATES OF RELEASE TO SERVICE

NOTE: Certificate of Release to Service for aircraft with either a Transport Category (Passenger) or Transport Category (Cargo) Certificate of Airworthiness and when used for Commercial Air Transport shall be in accordance with HKAR-145.

3.1 A Certificate of Release to Service shall be issued after overhauls, repairs, replacements, modifications and mandatory inspections have been carried out on an aircraft, which is registered in Hong Kong and has a Certificate of Airworthiness in force, except as follows:-

NOTE: Mandatory inspections are those inspections classified as mandatory by the Director-General, where the inspection itself is the work.

(a) A Certificate of Release to Service is not required for certain prescribed repairs or replacement carried out on an aircraft not exceeding 2730 kg Maximum Total Weight Authorised with a

Certificate of Airworthiness in the Private or Special Categories, provided the work has been carried out personally by the owner or operator holding a pilot's licence. Details of the prescribed repairs or replacements permitted are contained in the Air Navigation (General) Regulations.

- (b) If a repair or replacement of a part of an aircraft or its equipment is carried out when the aircraft is at such a place that it is not reasonably practicable (i) to carry out the work in a manner that a Certificate of Release to Service can be issued, or (ii) for the Certificate to be issued at that particular place, the Commander may fly the aircraft, if, in his opinion, it is safe to do so, to the nearest place at which a Certificate can be issued.

NOTE: The AN(HK)O prescribes that in such cases written particulars of the flight and the reasons for making it are to be given to the Director-General within ten days thereafter.

- (c) A Certificate of Release to Service is not required for any overhaul, repair, inspection or modification, carried out on items specified in the AN(HK)O, Schedule 5, paragraph 3.

3.2 A Certificate of Release to Service shall only be issued for a particular inspection, overhaul, modification, repair or replacement when the signatory is (signatories are) satisfied that the work has been properly carried out, having due regard to the use of:-

- (a) up-to-date and approved airworthiness data including manuals, drawings, specifications, mandatory modifications/inspections and where applicable, company procedures,
- (b) recommended tooling and test equipment which is currently calibrated where applicable, and
- (c) a working environment appropriate to the work being carried out.

3.3 The Certificate of Release to Service shall contain particulars of the work done or the inspection completed and the organisation and place at which the work was carried out. Depending upon the application of the certificate, details of the aircraft type, registration, component type, part number and serial number shall be recorded as applicable. The certification shall be worded in one of the following manners:-

For certifications made other than by Organisations approved in accordance with HKAR-145:

'The work recorded above has been carried out in accordance with the requirements of the Air Navigation (Hong Kong) Order for the time being in force and in that respect the aircraft/equipment is considered fit for release to service.'

For certifications made by Organisations approved in accordance with HKAR-145:

'Certifies that the work specified except as otherwise specified was carried out in accordance with HKAR-145 and in respect to that work the aircraft / aircraft component is considered ready for release to service.'

NOTE: The above statement means that the signatory certifies (signatories certify) the work specified in the manufacturer's or operator's instruction or the aircraft maintenance programme which itself may cross-refer to a manufacturer's/operator's instruction in a maintenance manual, service bulletin etc., except as otherwise specified in the deferred items, was carried out in accordance with HKAR-145 and in respect to that work the aircraft/aircraft component is considered ready for release to service. The above interpretative material is not exhaustive. For further details, reference should be made to HKAR-145 AMC 145.50(b).

NOTE: For organisations approved in accordance with HKAR-145, the certification may be issued in accordance with procedures specified in the Maintenance Organisation Exposition.

- 3.4 The Authorised Release Certificate identified as CAD Form One (see Appendix No. 1 to Hong Kong Airworthiness Notice No. 17) for Hong Kong constitutes the aircraft component Certificate of Release to Service when an aircraft component is maintained by one HKAR-145 organisation for another HKAR-145 organisation.
- 3.5 The Certificate of Release to Service shall be signed by a person specified in paragraph 4 except that the Director-General may direct which of these persons shall sign in a particular case. The signatory/signatories shall record licence/approval/authorisation reference number as appropriate, together with the date.

4 CERTIFICATION OF RELEASE TO SERVICE SIGNATORIES

- 4.1 A Certificate of Release to Service shall be issued only by one of the

following:-

- (a) The holder of an aircraft maintenance engineer's licence granted under the AN(HK)O, being a licence which entitles the holder to issue that certificate.
- (b) The holder of an aircraft maintenance engineer's licence granted under the law of a country other than Hong Kong and rendered valid under the AN(HK)O, in accordance with the privileges endorsed on the licence.
- (c) The holder of an aircraft maintenance engineer's licence or authorisation as such an engineer granted or issued by or under the law of any Contracting State other than Hong Kong in which the overhaul, repair, replacement, modification or inspection has been carried out, but only in respect of aircraft of which the Maximum Total Weight Authorised does not exceed 2730 kg and in accordance with the privileges endorsed on the licence.

NOTE: 'Contracting State' means any State which is a party to the Convention on International Civil Aviation at Chicago on 7th December 1944.

- (d) A person, approved by the Director-General as being competent to issue such Certificates, and in accordance with that approval.
- (e) A person whom the Director-General has authorised to issue the Certificate in a particular case, and in accordance with that authority.
- (f) In relation only to the adjustment and compensation of direct reading magnetic compasses, the holder of an Airline Transport Pilot's Licence (Aeroplanes) granted or rendered valid under the AN(HK)O may also issue a Certificate of Release to Service.

5 RETENTION OF RECORDS

5.1 When all the relevant work has been carried out, a Certificate of Release to Service shall be entered in/attached to the appropriate log book and signed by authorised persons.

- (a) Where it is more convenient, the required particulars may be entered in a separate record, but an entry shall be made in the appropriate log book, containing a summary of the work carried out and a

cross-reference to the document containing the Certificate of Release to Service.

- (b) Where an alternative record system has been agreed then the format and location of such Certificates shall be in accordance with that agreement.
 - (c) Where work has been carried out in accordance with the provision of paragraph 3.1 (b) then the details of such work together with date, pilot's licence number and signature of the person who carried out the work shall be entered in the appropriate log book.
- 5.2 Full particulars of work done to incorporate modifications shall be entered in the appropriate log book, quoting the reference number of the appropriate document, e.g. Airworthiness Approval Note for a major modification, Service Bulletin for a mandatory inspection. A Certificate of Release to Service shall be issued, where appropriate, and attached thereto (see paragraph 2.2.6).
- 5.3 When it is more convenient, the information required by paragraph 5.2 may be entered in a separate record which shall be certified in the same manner as that required for entry in the appropriate log book. The reference number of this record, and the place where it may be examined, shall be entered in the log book under a brief description of the particular modification. A similar record shall be kept when log books are not required.
- 5.4 All relevant records of mandatory inspections, overhauls, modifications, repairs and replacements shall be made available to the Director-General for examination on request, and these shall not be destroyed without authorisation from the Director-General.

NOTE: The AN(HK)O requires that log books, and other documents which are identified and referred to in the log books (therefore forming part of the log books) shall be preserved until a date two years after the aircraft, the engine or the variable pitch propeller, as the case may be, has been destroyed or has been permanently withdrawn from use.

6 MANUALS

- 6.1 Amendments to Manuals, i.e. the Flight Manual (see HKAR-1 Sub-section 1.7-2), Maintenance, Overhaul and Repair Manuals (see HKAR-1 Sub-section 1.7-4) or the Crew Manual (see HKAR-1 Sub-section 1.7-3) or

the Maintenance Schedule (see HKAR-1 Sub-section 1.7-5) arising from the incorporation of a major or minor modification in an aircraft shall be made in accordance with the requirements of the particular Sub-sections. In the case of minor modifications approved under CAD procedure the applicant shall submit details of the proposed amendments to the Director-General for approval.

- 6.2 Where it is necessary to amend the particulars in the Certificate of Airworthiness or Flight Manual, the Certificate or Manual shall, unless agreed otherwise by the Director-General, be forwarded to the CAD Airworthiness Office.

7 WORK BY ORGANISATIONS LOCATED OUTSIDE HONG KONG NOT APPROVED BY THE DIRECTOR-GENERAL

- 7.1 Where the Director-General has entered into a special arrangement with a country, the supervision and associated release documentation should follow the terms of that agreement.

- 7.2 In the absence of a special arrangement in accordance with 7.1, 7.2.1 or 7.2.2 may be applied.

7.2.1 Where the airworthiness arrangements in the country achieve a standard acceptable to the Director-General, work may be accepted from organisations within that country provided it is accompanied by a suitable certificate supported by the Responsible Authority of the State concerned. The type of work, detail arrangements and form of certification required should be agreed in consultation with the Director-General.

7.2.2 Work from other organisations not covered by 7.2.1 may be accepted on an ad hoc basis, and the arrangements should be agreed, case by case, with the Director-General.

SECTION 1.6

SUB-SECTION 1.6-8

FLIGHT TESTING AFTER MODIFICATION OR REPAIR

1 GENERAL

1.1 The flight testing of aircraft shall comply with the procedures set out in this Sub-section 1.6-8, as follows:

- (a) Modifications to aircraft and Variants under investigation for the issue of a Certificate of Airworthiness or a Permit to Fly.
- (b) Aircraft which have undergone structural repairs which could affect their flight characteristics.

NOTE: All owners are required to ensure that insurance policies covering damage to their aircraft and to third parties are suitably endorsed to cover flights by the CAD Approved Test Pilots.

1.2 In order that the Director-General may accept reports on flight test matters, the qualifications and experience of personnel involved in flight testing under the provisions of this Sub-section shall be acceptable to the Director-General. The pilots or flight crew shall be appropriately licensed for the particular type of aircraft concerned and competent to conduct the test laid down in the Airworthiness Flight Test Schedule.

1.3 Except where the Director-General requires additional pilots or flight crew to be carried out for a particular Airworthiness Flight Test, the number of persons conducting the test should be confined to the crew specified in the Certificate of Airworthiness (flight manual).

1.4 Flight test personnel shall be provided with adequate facilities and equipment for the effective performance of their duties.

NOTE: Organisations approved in accordance with Sub-section 1.8-9 to fly aircraft under 'B Conditions' of the Air Navigation (Hong Kong) Order 1995 comply with this requirement.

2 MODIFICATIONS AND REPAIRS TO AIRCRAFT AND VARIANTS

2.1 The requirements and procedures of this paragraph 2 are applicable:

- (a) In respect of modifications to aircraft.

- (b) In respect of repairs to aircraft.
- 2.2 If in the opinion of the Director-General, the design of an aircraft is so modified as to affect the flight characteristics or the functioning in flight of the aircraft, the Director-General may decide that a flight test evaluation is required. The schedule of flight testing shall include:
- (a) The flight tests necessary to re-establish compliance with the appropriate airworthiness requirements.
 - (b) The flight tests necessary to provide new or revised information for inclusion in the documents associated with the Certificate of Airworthiness (or Permit to Fly).
 - (c) Flight tests as contained in the approved Airworthiness Flight Test Schedule for an aircraft of the basic type concerned (Sub-section 1.3-3) except where these tests are covered by the tests referred to in above sub-paragraphs (a) and (b).
- 2.3 Where no specific flight test evaluation is required, the aircraft shall be flight tested as a Series aircraft in accordance with Sub-section 1.3-3.

Section 1.7

Procedures for the Approval of Documents and Manuals for Operation and Maintenance of Aircraft

SECTION 1.7

SUB-SECTION 1.7-2

FLIGHT MANUALS

1 INTRODUCTION

1.1 A Flight Manual is a document prescribed by the International Civil Aviation Organisation and is intended primarily for use by the flight crew. The Manual contains limitations, recommended procedures and information of a nature such that adherence to it will enable the level of safety which is intended by the Airworthiness Requirements and the Air Navigation legislation to be regularly achieved. The Flight Manual, by definition in the Air Navigation (Hong Kong) Order 1995 ('the Order'), forms part of the Certificate of Airworthiness. A Configuration Deviation List (CDL), is a part of Flight Manual, if compiled, should contain the contents as specified in the paragraph 4.

- NOTES:
- (1) The requirements of this Sub-section do not apply to aircraft of which the Prototype was certificated before 5th April 1949.
 - (2) In this Sub-section, the term 'Flight Manual' includes any documents accepted in place of a Flight Manual.

1.2 Flight Manuals and amendments thereto shall be approved, amended, and published in accordance with the procedures set out in this Sub-section 1.7-2.

2 AIRCRAFT FLIGHT MANUAL

2.1 Applicability

The requirements and procedures of this Sub-section 1.7-2 are applicable to AFM which are required to be provided as part of the certification documentation of a type of aircraft new to Hong Kong and to AFM for Variants or Series aircraft for which an application has been made for a Hong Kong Certificate of Airworthiness.

2.1.1 In respect of aircraft the Maximum Total Weight Authorised of which does not exceed 2730 kg, a AFM need not be supplied provided that:-

- (a) A AFM is not prescribed as a mandatory part of the Certificate of Airworthiness by the Responsible Authority of

the State of Design of the aircraft, and

- (b) The limitations, procedures and information necessary for the operation of the aircraft in accordance with the Air Navigation (Hong Kong) Order 1995 are promulgated in an acceptable document other than a Flight Manual.

2.2 General

2.2.1 AFM and all amendments thereto shall be subject to acceptance or approval, as appropriate, by the Director-General.

2.2.2 Procedures shall be established by the operator to ensure that the AFM is updated by incorporating the amendments, including changes classified as mandatory by the Director-General; or in case of an aircraft leased to a Hong Kong operator, classified as mandatory by the State of Registry.

2.2.3 The operator shall maintain a AFM Supplement Index (AFMSI) to control the manual supplement incorporation status. AFMSI should identify the supplement involved with revision status correctly. AFMSI shall be subject to approval by a Design Organisation approved under HKAR-21 or by the Director-General.

2.2.4 Where an Airworthiness Directive (AD) introduces a change to a AFM, the introduction of the change into the appropriate document shall be the responsibility of the owner/operator of the aircraft. A copy of the AD shall be attached to the AFM to denote compliance in addition to any temporary revisions complementary to the AD.

Note: In addition to introducing a copy of the AD into the AFM, owners/operators must ensure where a 'Permission' as provisioned in Schedule 12 of the Order, has been granted to carry an Operations Manual in lieu of the AFM, that the information promulgated in the AD is transmitted into the Operations Manual within the compliance time specified in the AD.

2.2.5 The operator shall be responsible for, and shall make the necessary arrangements to ensure, the supply of any amendments which are necessary to keep the AFM up to date for as long as an aircraft of the type remains registered in Hong Kong.

2.2.6 AFM provided in compliance with this paragraph shall be in the

English language.

2.3 Acceptance of Initial AFM

- 2.3.1 The AFM issued by the aircraft Type Certificate Holder (TCH) shall be identified either by a unique reference number, or by the exact designation of all the aircraft to which the Manual is to apply.
- 2.3.2 The AFM approved by the Authority of State of Design, shall be accepted by the Director-General during the CAD type certification process.
- 2.3.3 When the Director-General has completed his review of the AFM, the Authority of State of Design will be notified of the acceptance or of any alterations to it which are considered necessary prior to such acceptance.

2.4 Acceptance or Approval of AFM Amendment

- 2.4.1 Amendments which are initiated by the aircraft TCH and approved by the Authority of State of Design are accepted by the Director-General.
- 2.4.2 Amendments which are initiated by the holder of a Supplemental Type Certificate (STC), in form of a AFM Supplement, and approved by the Authority of State of Modification are accepted by the Director-General. This shall be accomplished during STC validation process.
- 2.4.3 Supplements initiated by the HKAR-21 approved organisations, if necessary, shall be approved by the Director-General.
- 2.4.4 The Operators shall, in accordance with the instructions provided in paragraph 2.2, incorporate the amendments.

SECTION 1.7

SUB-SECTION 1.7-3

CREW MANUALS

1 INTRODUCTION

Information and instructions necessary to enable the crew to acquire an understanding of the aircraft essential for its safe operation shall be provided by the Type Design Organisation of a public transport aircraft to be granted a Hong Kong Certificate of Airworthiness. The information and instructions may form part of the Operations Manual, or may be produced as a separate document, which shall be entitled 'Crew Manual'.

NOTE: In this Sub-section the word 'manual' is used to indicate 'Crew Manual', or the information and instructions to the crew which may be part of the Operations Manual.

- 1.1 The manual must be available for issue to a standard of completion acceptable to the Director-General at the time of issue of the Certificate of Airworthiness, unless otherwise agreed by the Director-General.

2 GENERAL

- 2.1 Except as otherwise agreed by the Director-General the manual shall be certified and published under the authority of the Organisation approved for design of the aircraft. The Director-General reserves the right to investigate the contents of the certified manual and to require the embodiment of any revision or amendment which he considers necessary to satisfy the requirements.

NOTE: The Director-General may accept a manual published by an Organisation other than the aircraft Type Design Organisation provided that the manual complies with HKAR-1 Sub-section 1.7-3.

- 2.2 The manual, when published by an approved Organisation, must comply with HKAR-1 Sub-section 1.7-3. One copy of the certified manual must be given to the Flight Standards and Airworthiness Division.
- 2.3 The aircraft Type Design Organisation shall obtain from the manufacturers of engines, auxiliary power units, propellers, radio and radar apparatus, and from the manufacturers of products which are approved under HKAR-21, such certified information relating to their products necessary for the completion of the manual. Should the aircraft Type Design Organisation wish to depart

from the information supplied, the agreement of the original manufacturer shall be sought. The Director-General shall be informed of disagreement and will adjudicate where necessary.

- 2.4 The manual shall be adequately illustrated and include such instructions and information considered necessary to meet the requirements of this Sub-section. Manuals complying with the applicable recommendations in paragraph 3 would fulfill the requirements.
- 2.5 The manual shall contain those parts specified under paragraph 3.15, headed 'Flight Planning Data', which are not part of the Flight Manual.
- 2.6 Any other instructions and information may be omitted from the manual only if the Flight Manual contains all (not parts) of the information specified under any item of a subject. In the event of any such omissions appropriate cross-references must be made to the Flight Manual.
- 2.7 The instructions and information in the manual must be presented in a manner suitable for use by the crew, giving sufficient detail for a proper understanding of each subject, and shall be consistent with the Flight Manual, with particular emphasis on the instruments and controls in the flight crew compartment. The manual should not contain superfluous matter regarding engineering and construction. The advice of the Director-General should be sought in cases of doubt.

3 FORMAT

Some, possible all, of the contents of the Crew Manual will be repeated in an Operations Manual. There are obvious advantages, therefore, in producing the Crew Manual in a format that will permit the contents to be incorporated in an Operations Manual without being changed or rewritten. The UKCAA has published a document, SRG1844 'EASA Operations Manual Template' giving guidelines on the preparation of operations manuals. It is recommended that this document be studied before the Crew Manual is prepared and that it is produced in conformity with those guidelines. The following information is for guidance in compiling a manual to comply with the requirements of this Sub-section 1.7-3.

3.1 TITLE PAGE

3.2 NOTE TO READERS

The conventions used in the manual (e.g. where words are in capital letters this indicates a placarded marking in the aircraft, similarly statements that all

speeds given are 'indicated airspeeds') scope and purpose of the manual and list of contents.

3.3 INDEX OF AMENDMENTS (PERMANENT) ISSUED BY TYPE DESIGN ORGANISATION

3.4 INDEX OF AMENDMENTS (TEMPORARY) ISSUED BY TYPE DESIGN ORGANISATION

3.5 INDEX OF AMENDMENTS (PERMANENT) ISSUED BY OPERATOR

3.6 INDEX OF AMENDMENTS (TEMPORARY) ISSUED BY OPERATOR

3.7 LIST OF ASSOCIATED PUBLICATIONS

3.8 INTRODUCTION

A brief introduction to the aircraft, its structure, systems, equipment and roles, including a three-view general arrangement drawing giving dimensions and such illustrations as may be necessary to cover panel coding, bulkhead numbering and nomenclature.

3.9 FLIGHT CREW COMPARTMENT

Lay-out, crew stations, controls, equipment, instruments and lights with appropriate illustrations.

3.10 SYSTEMS AND EQUIPMENT

As appropriate:- air conditioning; auto-pilot; flight systems; communications; electrical power distribution; fire protection systems including warning and extinguishing devices; flight control; fuel; hydraulic power; ice and rain protection; landing gear; navigation equipment including radio aids; instruments and radar; oxygen system including portable sets; pitot static system; fatigue meters; ice-detection, etc.; power-plant; auxiliary power units; starter pods; oil systems; emergency and survival equipment with locations and working instructions; cabin accommodation; galleys; warning lights; all of which should be covered in the following way:-

- (a) Description, consisting of location of main components in diagrammatic or table form; technical description of the system or installation; system and component functioning; controls, indicators and instruments, and power (electric, hydraulic and/or pneumatic) supplies in diagrams or table form (structural information should be given only where necessary for clarity).

- (b) Management, consisting of normal conditions before flight, in flight and after flight, and abnormal conditions (i.e. malfunctioning and abnormal external conditions which do not constitute an emergency (see paragraph 3.13)).
- (c) Ground Servicing, consisting of items of system ground servicing that the crew may be required to supervise or carry out in the event of a stop where full servicing facilities are not available; location of system ground servicing points in diagram form, and system replenishing and off-loading.

3.11 LIMITATIONS

As prescribed in the Flight Manual.

3.12 HANDLING PROCEDURES

General handling techniques applicable to all procedures; departure, starting, taxiing and take-off; flight handling, normal climb and cruise and flight in adverse weather, arrival, descent, field approach and landing; abnormal conditions, feathering, unfeathering, relighting, asymmetric flight, auto-rotation, etc., crew training, procedures outside normal operation but necessary for crew training; and ground handling, ground running and testing, ground manoeuvring, parking and mooring.

NOTE: Standard procedures, such as holding patterns and VOR procedures, which are considered to be part of basic piloting knowledge, may be omitted, except for those items of equipment which introduce new concepts.

3.13 EMERGENCIES

Essential operating procedures for emergency conditions (but excluding abnormal conditions (see paragraph 3.12)). An emergency in this context is defined as a foreseeable but unusual situation in which immediate and precise action will substantially reduce the risk of a catastrophe; those steps in which immediate action is essential to safety shall be distinguished from the steps which are taken subsequently.

3.14 CHECK LISTS

Crew check lists with transit checks where applicable.

3.15 FLIGHT PLANNING DATA

Example calculations and flight plans, performance, fuel and oil consumption, etc.

3.16 LOADING AND CG DATA

Definitions, data, example calculations and typical loading examples and instructions for using the Weight and Centre-of-Gravity Schedule (Sub-section 1.7-10) for all reasonable combinations of loading. In the case of aircraft in which provision is made for the carriage of freight, floor loading limitations and adequate information to enable the operator to position and secure freight.

4 REVIEW AND AMENDMENT OF MANUALS

- 4.1 The aircraft Type Design Organisation shall review certified manuals at periods not exceeding six months and where changes have been made by him, permanent revisions or amendments shall be published. The revisions or amendments must comply with HKAR Sub-section 1.7-3. One copy of each revision or amendment shall be forwarded to the Flight Standards and Airworthiness Division.
- 4.2 Essential information, which has to be issued in the shortest possible time, may be published by a serialised system of temporary revisions or amendments which shall be certified and printed on pages readily distinguishable from ordinary pages, and subsequently embodied in the permanent revision or amendment procedure.
- 4.3 The details of the system and the manner in which amendments are to be incorporated and recorded shall be adequately explained.
- 4.4 Permanent revisions or amendments or temporary revisions or amendments shall be distributed by the Type Design Organisation to holders of the manual, together with the necessary instructions for embodiment and recording in the manual.
- 4.5 Operators with appropriate approval may amend manuals without reference to the Type Design Organisation, provided that the technical substance of the change is within the terms of their approval. In this case the operator shall proceed as follows:-
- (a) Prepare a temporary or permanent revision or amendment in compliance with this Sub-section.
 - (b) Provide the Flight Standards and Airworthiness Division with a copy.

- (c) Incorporate the revision or amendment in the manuals and record the embodiment in a revision or amendment record, which is separate from that provided by the Type Design Organisation.

NOTE: Where operators wish to amend manuals, co-operation with the Type Design Organisation is recommended. This also applies where amendments to manuals are necessary due to the incorporation of minor modifications (minor change to a type design) under the HKAR-21 procedure.

SECTION 1.7

SUB-SECTION 1.7-4

MAINTENANCE, OVERHAUL AND REPAIR MANUALS

1 INTRODUCTION

Manuals containing information and recommendations necessary for the maintenance, overhaul and repair of aircraft, including engines and auxiliary power units, propellers, components, accessories, equipment, instruments, electrical and radio apparatus and their associated systems, and radio station fixed fittings, shall be provided by the constructor/manufacturer as required by Sub-section 1.5-3. This Sub-section 1.7-4 is to provide guidance in the compilation of such Manuals.

2 AIRCRAFT MAINTENANCE MANUAL

This should include the information described in paragraphs 2.1 to 2.11.

2.1 Introduction

A brief survey of the aircraft features and data of general interest.

2.2 Description

The construction of the aircraft including its control surfaces, landing gear, flying control systems and all other systems, e.g. hydraulic, pneumatic, vacuum and de-icing; all installations, e.g. engine, auxiliary power unit, propeller, instrument, electrical, and radio station fixed fittings and all equipment installations, e.g. lifebelts, dinghies, fire detection and prevention. Where necessary, the purpose of individual parts should be described.

2.3 Operation

The method whereby the components, systems and installations achieve their designed purpose.

2.4 Control

The method of operating the components, systems and installations together with any special procedures and limitations.

2.5 Servicing

Details regarding servicing points, capacities of tanks, reservoirs, etc., types of fluid to be used, with details of any anti-corrosive measures to be taken, pressures applicable to the various systems, position of access or inspection panels, walkways and drain locations, lubrication points and the lubricants to be used. Details of servicing equipment, ground handling details such as taxiing, towing, parking, mooring, jacking and levelling, and loading data including loading limitations. Details of ground de-icing fluids and other fluids where contamination could cause a dangerous deterioration in airworthiness.

NOTE: Suitable de-icing and cleaning fluids which are approved for use by the aircraft constructor may be listed, together with information concerning the means to counteract any detrimental action which might result from their use.

2.5.1 Procedures for the ground de-icing and anti-icing of aircraft should be included in the Maintenance Manual or in a separate document referred to in the Maintenance Manual.

2.6 Maintenance

2.6.1 Schedule

The recommended periods at which each part of the aircraft, engine, auxiliary power units, propellers, the accessories, instruments and equipment, should be cleaned, inspected, adjusted, tested and lubricated, and the degree of inspection recommended at the periods quoted. The recommended periods at which components and accessories should be overhauled, the Mandatory Life Limitations identified in Sub-section 1.5-3, paragraph 4.1, and a cross-reference to the section of the Overhaul Manual which lists the Mandatory Life Limitations of engine or propeller parts. A procedure for converting flying hours or landings, as applicable, into life units (e.g. cycles) together with the assumptions made with regard to the 'typical cycle' on which the lives are based.

2.6.2 Procedures

The methods to be used for implementing the recommended schedule, e.g. methods of access to specified parts, methods of inspection, including those of carrying out duplicate inspections of vital points

and control systems (see Sub-section 1.5-3).

2.6.3 Faults and Rectification

The faults which may arise during service or those which may be found as a result of inspection, together with suggested causes and recommended methods of rectification.

2.6.4 Adjustments and Testing

The methods of completing the adjustments or tests which may be required during service or to correct faults, e.g. control movements with permissible tolerances.

2.7 Removal and Assembly

The order and method of removing and refitting components and accessories, together with details of any special precautions to be observed.

2.8 Line Repairs

Repairs of a temporary or minor nature which, in the opinion of the constructor, could be applied to the aircraft whilst remote from suitable facilities.

2.9 General Procedures

The method of applying general procedures such as system testing during ground running, checks after a heavy landing, change of role, symmetry checks, weighing and determination of centre of gravity and salvage considerations, such as lifting and shoring.

2.10 Details of crating and unpacking of components, as considered necessary; conditions of storage, with recommended limiting periods, and component dimensions and weights.

2.11 Compliance

The manner of complying with the above should be such that it is primarily directed to those persons who will be responsible for maintaining a complete aircraft in a state of airworthiness.

NOTE: The aircraft Maintenance Manual should not contain data relating to the complete

overhaul of a component.

3 AIRCRAFT OVERHAUL MANUAL

This should include the information described in paragraphs 3.1 to 3.5.

3.1 Aircraft Structures and Control Surfaces

The extent of overhaul data for structures including control surfaces should be such as to ensure that owners and operators are made aware at an early stage of the recommended standard of overhaul required initially to ensure the continued airworthiness of the structures including control surfaces over a stated period of flying hours and/or elapsed calendar time, or at the termination of a specified number of flights and/or landings. Subsequent amendments should be made as necessary to acquaint owners and operators of the latest findings or experience so that the manual reflects current knowledge of the aircraft thereby enabling increases or decreases, as appropriate, to be made in the recommended periods.

3.2 Integrity of Structures

Information, as detailed below, should be provided initially for the main aircraft structures.

- 3.2.1 Illustrations which show clearly the construction of the structures, with descriptive text to clarify the illustrations and draw attention to those parts which require detailed attention during overhaul.
- 3.2.2 Diagrams showing those parts of the structure to which access cannot be gained through the normal inspection doors and panels, the diagrams being supplemented by a table defining the limits of inaccessibility.
- 3.2.3 Diagrams showing structures classified as primary and secondary.
- 3.2.4 Table showing the recommended limiting periods at which designated parts of the structure should be overhauled in compliance with the standards given in the following paragraphs.
- 3.2.5 Information giving the methods and the extent of dismantling necessary to gain access to normally inaccessible structure, e.g. whether by removal of skin, by provision of additional panels,

removal of fuel tanks, etc., and detailing any special opportunities of gaining access to normally inaccessible structure, e.g. during any component change programme.

- 3.2.6 A tabulated schedule of overhaul, relating to paragraphs 3.2.2 and 3.2.4, which defines the overhaul work and inspections and tests necessary after the normally inaccessible structure has been reached, and the method of implementing the schedule.
- 3.2.7 Details on the application of special inspection techniques, e.g. radiographic and ultrasonic testing, with a proven technique of examination where such processes are required. The limitations of such processes and limits of their applicability should be clearly defined. Any special techniques necessary for proving the serviceability of castings, forgings, tubular members, etc., should be given.
- 3.2.8 Details of the protective treatment to be used to restore the original standard of protection, the final inspection of the structure or control surfaces, and the methods of closing structure which has been opened.
- 3.2.9 Details regarding the correlation of the bolt/joint overhaul programme (see paragraph 3.3.1) with the prescribed sampling programme, and the necessity to overhaul accessories and equipment in normally inaccessible structure at the structure overhaul periods.

3.3 Integrity of Attachments and Joint Assemblies

- 3.3.1 Diagrams showing the positions of bolt and stud holes in spar booms and other primary structure, and in such secondary structure where, if failure occurs the associated primary structure may be affected. The diagrams should be annotated or marked to show the bolt or stud holes which are accessible and those normally inaccessible; the size of the holes and whether bushed; the materials forming the mating surfaces; fits and clearances and dimensional limits and a reference to identify the holes.
- 3.3.2 Using the reference identifying the holes, tables giving the total number of holes, recommended number of bolts or studs to be withdrawn from each group for operators having fleets of 2, 5, 10 and 20 aircraft, recommended number of bushes to be withdrawn, and recommended number of flying hours, flights, landings and/or

the elapsed time at which bolts, studs or bushes should be withdrawn, having regard to the possibility of fatigue, fretting and corrosion.

NOTE: Where an arrangement has been made between operators by the constructors for a shared programme of bolt and hole sampling, it is recommended that details of the programme be provided in Service Bulletins, etc.

3.3.3 Details of the methods and extent of dismantling necessary to gain access to the nominated bolts or studs where this differs from paragraph 3.2.5.

3.3.4 Details of the precautions necessary during the removal of bolts or studs, special tools or equipment necessary, the recommended inspection and crack detection procedure, e.g. penetrant or fluorescent dyes, special optical instruments, etc., salvage methods and limitations, schedule of oversize bolts, studs, and bushes available, protective treatment, methods of re-assembly and locking, including torque loading data, and details of recording schemes to identify the bolts, studs or holes examined.

3.4 Mandatory Life Limitations

A Schedule detailing those parts of the aircraft and the aircraft structure which are to be replaced by new parts and the mandatory periods of renewal.

3.5 Aircraft Systems

Details of recommended overhaul practices of aircraft systems such as flying controls, hydraulic and electrical installations.

4 AIRCRAFT REPAIR MANUAL

4.1 This manual should be confined to a description of the repairs applicable to the aircraft structure and components, and to those parts of the systems and installations which are the design responsibility of the aircraft constructor, and should include the information described in paragraphs 4.2 to 4.11.

4.2 Introduction

General notes on the contents and usage of the manual.

4.3 General Information

Details of recommended repair procedures and practices which have a general application, with diagrams showing:-

- (a) Structures classified as primary and secondary with areas or parts where repairs are not permissible clearly defined.
- (b) The construction of main structures and components with station positions which define the extent of skin panels, and the construction of primary longitudinals, frames, stringers and ribs, with details of the dimensions and materials used.
- (c) Tables of standard and special extruded sections with, where applicable, approved alternatives.
- (d) Tables of fasteners for each part of the structure, with information on the areas where oversize fasteners may be used.

4.3.1 Details of process specifications, heat treatment procedures, protective treatment requirements, precautions necessary during repairs, e.g. damage by drilling into hidden structures and building in assembly stresses, details of special processes such as metal-to-metal bonding, welding, sealing of pressurised structures, etc.

4.4. Preparation for Repair

Details of, for example, the inspection necessary before repair, damage assessment standards, methods of supporting the structure, alignment and geometry checks, material allowance for dressing of damage, and limits of wear.

4.5 Tools and Equipment

A list of tools and equipment necessary for applying repairs, with details of their purpose and method of use.

4.6 Temporary Repairs

Details of repairs of a temporary nature which would permit the aircraft to return to base for a permanent repair.

4.7 Standard Repairs

Details of repairs which can, within defined limits, be applied as applicable, to various structures, systems and installations.

4.8 Minor Repairs

Details of permanent repairs which apply only to specified parts of the structure or particular components. Each part of the aircraft structure, its systems and installations should be considered, the sub-divisions of this section following the same sequence as that used in the Maintenance Manual. Only minor repairs, which do not require extensive dismantling or the use of special jigs or equipment, should be included.

4.9 Major Repairs

Details of permanent repairs which would normally only be completed at the main base, e.g. those which would require the use of special jigs and equipment.

4.10 Checking and Testing after Repair

Details of those checks or tests necessary after repair, e.g. structure alignment checks, adjustment of control surface balance and fuselage pressure testing.

4.11 General

The repair schemes specified in paragraphs 4.6 to 4.9 should, as far as possible, be diagrammatically presented with the text adjacent, giving details of negligible damage, the limits of repairable damage, the applicability of the particular repair and the procedure involved in its embodiment.

5 ENGINE AND AUXILIARY POWER UNIT MANUALS

Engine and Auxiliary Power Unit Manuals should contain the following descriptive, servicing, maintenance and overhaul data relating to the engine, and similar data relating to those components and accessories either on the engine or in the power unit, in respect of which an application for design approval has been made by the engine constructor. Such data should conform to the recommendations of paragraph 7.

5.1 Engine and Auxiliary Power Unit Maintenance Manuals

5.1.1 Introduction

A brief description of the engine and engine systems.

5.1.2 Description

A detailed description of the construction of the engine, including the systems and, where necessary, the purpose of the individual parts. For modular engines, details of the division of the engine into modules (see JAR-E Section C, Chapter C1-2 for definition) giving the nomenclature and clearly defining the boundaries for each module.

5.1.3 Operation

The method whereby the components, systems and installations achieve their designed purpose.

5.1.4 Installation

Methods of uncrating, acceptance checking, de-inhibiting, lifting, and installing an engine into a power unit, the method of attaching accessories to an engine or power unit, and the checks necessary after such installation.

5.1.5 Control

Methods of starting, running, testing and stopping the engine and its components, systems and installations, with any special procedures and limitations.

5.1.6 Servicing

Details regarding servicing procedures, capacities of tanks, reservoirs, etc., types of fluid to be used, and the draining of collector tanks.

5.1.7 Maintenance

(a) Schedule and Procedures

Compliance with the recommendations in paragraphs 2.6.1 and 2.6.2.

(b) Faults and Rectification

Compliance with the recommendations in paragraph 2.6.3, together with inspections necessary after abnormal circumstances, such as shock loading, sudden stoppage, excessive out of balance, fire, over-speed, over-temperature, or any other excursions outside approved limitations.

(c) Adjustments, Component Removals and Testing

The methods of completing those adjustments, tests or removal of components, e.g. cylinders or combustion chambers, which may be required during service or to correct faults.

(d) Modular Engines

In respect of modular engines, in addition to (a), (b) and (c):-

- (i) In carrying out a module change, the means of checking the serviceability of the other modules fitted to the engine (e.g. establishing that they have not been adversely affected by blade damage, oil contamination, internal air system contamination).
- (ii) The compatible modification standards for the interchange of modules.
- (iii) Details of the methods, tests and equipment by means of which adequate engine performance, functioning and mechanical integrity (e.g. freedom from leaks, oil consumption, oil pressure, run down time) may be established following a module change on an installed engine.

5.1.8 Removal

The order and method of removing the engine from a power unit, and the removal of accessories from either the engine or the power unit, with the methods of engine lifting, inhibiting and crating for return to manufacturer or base.

5.1.9 Tools and Equipment

Tools and equipment necessary for maintenance with details of their purpose and method of use.

5.1.10 Mandatory Life Limitations

A procedure for converting flying hours, or landings, as applicable, into life units (e.g. cycles) together with the assumptions made with regard to the 'typical cycle' on which the lives are based.

5.2 Engine and Auxiliary Power Unit Overhaul Manuals

5.2.1 Tools and Equipment

Tools and equipment necessary for overhaul and testing, with details of their purpose and method of use.

5.2.2 Dismantling

The order and method of dismantling for overhaul.

5.2.3 Cleaning and Inspection

The materials, equipment and methods to be used for cleaning. The materials and equipment to be used, and the standards and methods of inspection to be applied, during overhaul, and also after abnormal circumstances such as shock loading, sudden stoppage, excessive out of balance, fire, overspeed, over-temperature or any other excursions outside approved limitations.

5.2.4 Fits and Clearances

Details of all relevant fits and clearances.

5.2.5 Repair and Salvage Schemes

Details of all applicable repair and salvage schemes.

5.2.6 Re-assembly

Description of the order and method of assembly at overhaul.

5.2.7 Testing

Details of the standards to be observed, the method of completing tests, and a list of faults which may occur during testing, together with possible causes and methods of rectification.

5.2.8 Storage Conditions and Limiting Period

Details of the conditions of storage and the recommended limiting storage periods.

5.2.9 Mandatory Life Limitations

A list of the relevant parts, with details of the Mandatory Life Limitations, with a cross reference to the Maintenance Manual for the procedure for converting flying hours or landings, as applicable, into life units (e.g. cycles) together with the assumptions made with regard to the 'typical cycle' on which the lives are based.

6 PROPELLER MANUALS

Propeller manuals should contain descriptive, servicing maintenance and overhaul data relating to the propeller and similar data relating to those accessories concerned with the functioning and control of the propeller in respect of which an application for design approval has been made, as outlined in paragraphs 6.1 and 6.2; such accessory data should conform to the recommendations of paragraph 7.

6.1 Propeller Maintenance Manual

6.1.1 Introduction

A brief description of the propeller and propeller systems.

6.1.2 Description

A detailed description of the construction of the propeller.

6.1.3 Operation

The method whereby the propeller and the propeller systems achieve their designed purpose.

6.1.4 Installation

The method of uncrating, acceptance checking, lifting and installing the propeller.

6.1.5 Control

The method of checking the operation of the propeller during engine running, with details of any special procedures and limitations.

6.1.6 Maintenance

(a) Schedule and Procedures

Compliance with the recommendations in paragraphs 2.6.1 and 2.6.2.

(b) Faults and Rectification

Compliance with the recommendations in paragraph 2.6.3.

(c) Adjustments

The methods of completing those adjustments which are necessary during service or to correct faults.

6.1.7 Removal

The order and method of removing the propeller from the engine.

6.1.8 Mandatory Life Limitations

A procedure for converting flying hours or landings, as applicable, into life units (e.g. cycles) together with the assumptions made with regard to the 'typical cycle' on which the lives are based.

6.2 Propeller Overhaul Manual

Compliance to the standards recommended in paragraph 5.2.

7 ACCESSORY, INSTRUMENT AND ELECTRICAL EQUIPMENT MANUALS

Separate manuals should normally be provided by the accessory, instrument or equipment manufacturer for (a) Maintenance and (b) Overhaul, the manuals containing data which conforms to the standard indicated by the subjects detailed below, where applicable.

7.1 Maintenance Manuals

7.1.1 Description, Operation and Data

7.1.2 Unpacking

7.1.3 Acceptance Checks

7.1.4 Storage Instructions

Conditions

Limiting Periods (recommended)

7.1.5 Checks/Tests Before Installation

7.1.6 Installation

7.1.7 Checks/Tests After Installation

7.1.8 Operation Instructions

7.1.9 Maintenance Schedule

To include recommendations in respect of overhaul periods and/or Mandatory Life Limitations, as appropriate.

NOTE: In certain circumstances life limitations may become mandatory; in such cases these must be indicated.

7.1.10 Trouble Shooting Procedures

7.1.11 Removal

7.1.12 Bench Checks

7.1.13 Return to Manufacturer or Base

7.2 Overhaul Manuals

7.2.1 Description, Operation and Data

7.2.2 Disassembly

To include any checks or tests considered necessary before disassembly, and a list of items which are to be discarded and replaced by new parts at overhaul.

7.2.3 Cleaning

7.2.4 Inspection/Check

7.2.5 Repair

7.2.6 Assembly

7.2.7 Fits and Clearances

7.2.8 Testing

7.2.9 Trouble Shooting Procedures

7.2.10 Storage Instructions

Conditions

Limiting Periods (recommended)

7.2.11 Special Tools, Fixtures and Equipment

8 REPLACEMENT PARTS

8.1 Unless Manuals include detailed part identification of all replacement parts appropriate to the work described in the Manual, a statement should be included in each appropriate Manual specifying the documents which identify these parts.

8.1.1 Each Manual should also contain a statement that all replacement parts must be either those parts detailed in the manufacturers' publications or documents, or approved alternative parts.

SECTION 1.7

SUB-SECTION 1.7-8

TECHNICAL LOGS

1 INTRODUCTION

The Air Navigation (Hong Kong) Order 1995 requires that a Technical Log shall be kept for an aircraft registered in Hong Kong in respect of which a Certificate of Airworthiness in either the Transport or Aerial Work Categories is in force. The Air Navigation (Hong Kong) Order 1995 further requires that a Technical Log shall contain details of the time the aircraft took off and landed, particulars of defects and any other information affecting the airworthiness or safe operation of the aircraft.

NOTE: In the case of an aircraft not exceeding 2730 kg Maximum Total Weight Authorised which is not operated by a person who is the holder of an Air Operator's Certificate or required to hold such a Certificate, an alternate form of record may be approved by the Director-General.

2 BASIC TECHNICAL LOG REQUIREMENTS

2.1 The Technical Log shall contain the following:-

- (a) A Title Page with the registered name and address of the operator, the aircraft type and the full international registration marks of the aircraft.
- (b) A valid Certificate of Maintenance Review as specified in Sub-section 1.6-2.
- (c) A Maintenance Statement of the next inspection due to comply with inspection cycle of the Approved Maintenance Schedule and any out of phase inspection or component change due before that time.

NOTE: CAD 360 Air Operator's Certificates Requirements Document Part Two gives an example of a Maintenance Statement which includes the Certificate of Release to Service required by Sub-section 1.6-2 and which would be acceptable to the Director-General.

- (d) A readily identifiable section containing sector record pages. Each page shall be pre-printed with the operator's name and page serial number and shall make provision for recording the following:-
- (i) The aircraft type and registration mark.
 - (ii) The date and place of take-off and landing.
 - (iii) The times at which the aircraft took off and landed.
 - (iv) Particulars of any defect in any part of the aircraft affecting the airworthiness or safe operation of the aircraft which is known to the Commander or, if no such defect is known to him, an entry to that effect.
 - (v) The date and signature of the Commander following completion of item (d)(iv).
 - (vi) The arrival fuel state.
 - (vii) A Certificate of Release to Service as required by Sub-section 1.6-2 in respect of any work carried out for the rectification of defects. This certificate shall be entered in such a position and manner as to be readily identifiable with the entry of the defect to which it relates.
 - (viii) The quantities of fuel and oil uplifted, and the quantity available in each tank, or combination of tanks, at the beginning of each flight.
 - (ix) The running total of flying hours, such that the hours to the next inspection can be readily determined.
 - (x) Provision for pre-flight and daily inspection signatures.
 - (xi) The times when ground de-icing was started and completed.

NOTES: (1) Where sector record pages are of the multi-sector 'part-removable portion' type then such 'part-removable portions' shall contain any of the above information necessary plus all relevant data from paragraph 3, if applicable, to ensure the safe operation of the aircraft.

(2) Examples of sector record pages which would be acceptable to the Director-General are shown in CAD 360 Air Operator's Certificates Requirements Document Part Two.

- (e) A readily identifiable section containing acceptable deferred defect record pages. Each page shall be pre-printed with the operator's name and page serial number and shall make provision for recording the following:-
- (i) A cross reference for each deferred defect such that the original defect can be clearly identified in the sector record page section.
 - (ii) The original date of occurrence of the defect deferred.
 - (iii) Brief details of the defect.
 - (iv) A cross reference for each deferred defect such that the action in respect of such deferred defect can be readily identified on the sector record page.

NOTE: An example of a deferred defect record page which would be acceptable to the Director-General is shown in CAD 360 Air Operator's Certificates Requirements Document Part Two.

2.2 The format of all sector record pages shall be submitted to the Director-General for acceptance, and agreement in respect of the supplementary information required (see paragraph 3).

3 SUPPLEMENTARY TECHNICAL LOG REQUIREMENTS

3.1 It will be necessary to record additional information for a specified aircraft. The following items are typical of what is required, where appropriate, but the list is not intended to be exhaustive:-

(a) **Maximum or Intermediate Contingency Power**

It is necessary to record the duration of maximum and intermediate contingency power usage, and subsequently to transfer the information to the engine log book or maintenance record. For rotorcraft the record of each use of these powers must also subsequently be transferred to the log cards or other appropriate documents applicable to those components of the transmission which

always transmit the power from a single engine only, i.e. components upstream of any combining gearbox.

(b) **Landings**

The number of landings carried out will be necessary for undercarriage component life consideration.

(c) **Flight Pressure Cycles**

The number of pressure cycles will be necessary for fuselage life considerations.

3.2 Supplementary information shall be assessed by the operator and agreed by the Director-General.

4 RETENTION OF RECORDS

4.1 All entries in the Technical Log shall be made in duplicate, with provision for one copy of each entry to be removed and retained on the ground before the next flight, except that, in the case of an aeroplane of which the maximum total weight authorised does not exceed 2730 kg, or a helicopter, if it is not reasonably practicable for the copy of the technical log to be kept on the ground it may be carried in the aeroplane or helicopter, as the case may be, in a box approved by the Director-General for that purpose. Adequate arrangements shall be made to extract information recorded in the Technical Log for use by the maintenance organisation and component overhaul organisation.

4.2 All entries in the Technical Log shall be retained by the operator for a period not less than two years after the particular aircraft has been destroyed or permanently withdrawn from service except that the Director-General may consider a different retention period in a particular case.

SECTION 1.7

SUB-SECTION 1.7-9

MODIFICATION RECORD BOOK

1 INTRODUCTION

1.1 The Modification Record Book is a statement of the modification history of the aircraft to which it relates.

1.2 A Modification Record Book must be kept for each aircraft of more than 2730 kg maximum authorised weight, registered in Hong Kong.

NOTE: The word 'aircraft' used in the context of this Sub-section, does not apply to engines and propellers where suitable modification records are maintained in appropriate log books. The Modification Record Book is considered an addition to the aircraft log book.

1.3 Modification Record Books may be purchased from the CAD Airworthiness Office.

2 CONTENTS OF THE MODIFICATION RECORD BOOK

The following shall be recorded in the Modification Record Book:-

- (a) Modifications made to those parts of the aircraft on which airworthiness depends.
- (b) Modifications made to the aircraft which affect modifications already listed in the Record Book.
- (c) Major repairs, which have significantly altered the design affecting the airworthiness of the aircraft.

3 COMMENCING AND MAINTAINING THE MODIFICATION RECORD BOOK

3.1 New Aircraft Initially Registered in Hong Kong

The applicant for issue of a Hong Kong Certificate of Airworthiness (see

Sub-section 1.3-2), shall obtain from the aircraft constructor information necessary to comply with the requirements of this Sub-section relevant to commencement for these aircraft, by stating the modification embodied, additional to the basic design, at the time of certification.

3.2 Used Aircraft

The applicant for the issue of a Hong Kong Certificate of Airworthiness (see Sub-section 1.3-2) for a used aircraft shall be responsible for starting a Modification Record Book at the time of Hong Kong registration, and shall, at that time, record such of the modification history of the aircraft as is considered necessary by the Director-General.

3.3 A Modification Record Book which is valid in the exporting country, and supplied with an aircraft to be imported and registered in Hong Kong, may be acceptable in place of the Modification Record Book required by this Sub-section. Such a book shall be certified as accurate and up to date by the competent airworthiness authorities of the exporting country, and shall be acceptable to the Director-General in all other particulars.

3.4 The Modification Record Book must be up to date at the issue of the Certificate of Airworthiness for a new aircraft, at the renewal of the Certificate (see Sub-section 1.3-4), and at the time of sale or lease of the aircraft.

3.5 The Modification Record Book shall be kept by the owner or operator of the aircraft, and shall be made available for examination, when required by the Director-General.

Section 1.8

Approvals

SECTION 1.8

SUB-SECTION 1.8-6

TEST HOUSES GROUP B4

1 INTRODUCTION

An organisation may be approved to provide reports and certify that test/examination on an aircraft, engine, or related part, system, or material have been made in compliance with requirements or specifications published or accepted by the Director-General, subject to the procedures set out in this Sub-section 1.8-6. The approval, when granted, will apply to the whole organisation headed by the Accountable Manager.

2 APPLICATION

- 2.1 CAD Form DCA 61, copy of which can be obtained from the CAD website, shall be completed and returned to the same address.
- 2.2 The Accountable Manager shall submit his/her credentials on CAD Form DCA 61A to the Director-General for acceptance.

3 REQUIREMENTS FOR THE GRANT OF APPROVAL

- 3.1 The applicant for approval shall nominate, using CAD Form DCA 61A, the following persons:-
 - (a) The person in direct charge of the test house and, where applicable, a deputy.
 - (b) The technical director or senior executive to whom the person directly in charge of the test house is responsible.
 - (c) Other senior members of the test house staff and of related departments.
 - (d) Signatories to Approved Test Certificate.
- 3.2 The applicant shall provide an Exposition of the organisation, including the following information:-

- (a) The terms of reference of senior technical personnel, as applicable to activities under the Approval.
- (b) The associated chains of responsibility.
- (c) The scope of the test house facility, together with information on essential inspection and test equipment.
- (d) The procedures adopted for conducting tests/examinations, and reporting thereon.
- (e) Qualifications of Approved Test Certificate signatories.
- (f) Quality system.
- (g) Any further matters which the Director-General decides are necessary arising from initial assessment or subsequent supervisory visits.

3.2.1 One copy of the exposition and of all subsequent amendments shall be supplied to the CAD Airworthiness Office, together with a copy of the distribution list.

3.3 The organisation shall, in the opinion of the Director-General, be such as to ensure that, in all matters affecting airworthiness, full and efficient co-ordination exists within the test house, and between the test house and other departments of the company.

3.4 The applicant shall satisfy the Director-General that the person in charge of the test house and his accredited deputy are capable and responsible persons, and written evidence of their qualifications and experience shall be supplied. The Director-General shall be satisfied that the management of the organisation will be conducted with due regard to the needs of airworthiness and the character of airworthiness requirements, and that the persons nominated in accordance with paragraph 3.1 are conversant with Hong Kong aviation requirements and procedures insofar as they affect the particular matters for which they are responsible.

3.5 The test house staff shall be of sufficient number and experience as may reasonably be expected to undertake the volume of work in the class for which approval is sought.

3.6 The test house staff shall be provided with adequate accommodation, facilities and equipment for the effective performance of their duties. The

calibration of test equipment shall be checked as frequently as is necessary to maintain confidence in the accuracy of the equipment, and the laboratory or test house environmental conditions shall be controlled as necessary in relation to the work. Bonded and quarantine stores shall be provided, where appropriate.

- 3.7 The applicant shall demonstrate that the organisation has established and is able to maintain a quality system. This quality system shall be such that it enables the organisation to ensure all materials used in testing/examining the aircraft, engine or its related parts conform to approved specifications and is in condition for safe operation when the tested/examined parts are reinstalled on the aircraft, engine, or its related system.
- 3.8 An Approved Test Certificate, the form of which shall be approved by the Director-General, shall be issued to the consignee for each item tested or examined and released under the CAD approval. Approved Test Certificate shall be numbered serially at the time of bulk printing, except as otherwise agreed by the Director-General. The wording of the certification shall be as follows:-

Certified that the above mentioned specimens/parts/materials/systems* have been tested/examined in accordance with the terms of the contract/order applicable thereto and the requirements of Hong Kong relating to the testing of such specimens/parts/materials/systems*. This Certificate does not relate to the standard or quality of manufacturer of the item/material except as may be specified in the test contract/order.

Signed

for and on behalf of

Date

*Delete where inapplicable.

- 3.9 Test house records shall be maintained and shall be such that proper correlation of all work carried out is established with relevant documents including the following, as appropriate:-
 - (a) Customer's order.
 - (b) Item under Test/Examination.
 - (c) Relevant standards/specifications.

- (d) Test Report including a record of each identified (i.e. by serial number) component and item of equipment.
- (e) Outgoing Approved Test Certificate.

3.10 Suitable arrangements shall be made for checking and supervising test results and recordings. Essential records shall not be destroyed without authorisation from the Director-General.

4 REQUIREMENTS FOR THE MAINTENANCE OF APPROVAL

- 4.1 The Organisation shall be operated at the standard necessary to undertake the work for which it is approved and the Director-General shall, at all reasonable times, have access to the organisation for the purpose of assessing the standard in use.
- 4.2 A proposed change of the Accountable Manager shall be notified to the Director-General in writing. The Director-General may require the organisation to supply further information in order to satisfy itself of the suitability of the official concerned insofar as it may affect the approval of the organisation.
- 4.3 Changes in the persons nominated in accordance with paragraph 3.1 shall be notified to the Director-General in writing for acceptance.
- 4.4 The Exposition required by paragraph 3.2 shall be reviewed periodically by the organisation and any necessary amendments promulgated.
- 4.5 The organisation shall consult the Director-General if in any difficulty about the interpretation of the requirements or associated procedures.
- 4.6 The Director-General shall have the right to witness tests in any way associated with establishing airworthiness.
- 4.7 The Director-General may revoke, suspend or vary the Terms of Approval if, in the opinion of the Director-General, the conditions required for approval are not maintained.

SECTION 1.8**SUB-SECTION 1.8-9****ORGANISATIONS - APPROVAL FOR FLIGHT UNDER 'B CONDITIONS'****1 INTRODUCTION**

- 1.1 An organisation may be approved to operate aircraft under 'B Conditions' as prescribed in Schedule 2 of the Air Navigation (Hong Kong) Order 1995, subject to any conditions specified by the Director-General in such approval. The aircraft may fly without a Certificate of Airworthiness or Permit to Fly being in force. The aircraft may fly without being registered.
- 1.2 Approvals under the provision of this Sub-section 1.8-9 are granted in one or more of the following groups:
- F1** An approval granted to an organisation approved for the full management and control of flights under 'B Conditions'.
- F3** An approval granted to an organisation for the management and control of flights under 'B Conditions' for the purposes of a specified test or development programme of defined scope and specified duration.
- F4** An approval granted to an organisation for the management and control of flights under 'B Conditions' for the purposes of a specified test or development programme of defined scope and specified duration, where the applicant determines and the Director-General agrees that there are no significant flight safety implications.
- 1.3 Each approval group is discrete such that, for example, a Group F1 approval does not include Group F3 or F4 privileges. It is possible however, for an organisation to be approved in more than one group.
- 1.4 The Schedule of Approval may restrict the organisation to a limited scope, aircraft category, or specific aircraft dependent upon the flight test expertise retained and the relative complexity of the projects undertaken.

2 APPLICATION

- 2.1 Application for Group F4 approval under Sub-section 1.8-9 shall be made by letter to the Director-General.
- 2.2 Application for other Group approvals under Sub-section 1.8-9 shall be made on form DCA 61 or DCA 456, copy of which can be obtained from the CAD website.

3 REQUIREMENTS FOR GRANT OF APPROVAL

- 3.1 **Group F1** approval may only be granted to an organisation, which meets the requirements of this Sub-section 1.8-9 and holds a design organisation approval in accordance with the requirements of HKAR-21 Subpart J. Approvals granted under JAR-21, FAR-21 or EASA Part 21 may be accepted in lieu of an HKAR-21 Subpart J approval. The organisation shall provide an organisation exposition containing the particulars identified in Appendix 3 to this Sub-section 1.8-9 and, in the opinion of the Director-General, be such as to ensure that, in all matters affecting airworthiness and flight testing, full and efficient co-ordination exists within departments and between related departments.
- 3.2 **Group F3** approval may only be granted to an organisation which meets the requirements of this Sub-section 1.8-9 and holds a design organisation approval in accordance with the requirements of HKAR-21 Subpart J. Approvals granted under JAR-21, FAR-21 or EASA Part 21 may be accepted in lieu of an HKAR-21 Subpart J approval. The organisation shall provide an organisation exposition containing the particulars identified in Appendix 4 to this Sub-section 1.8-9, as necessary to the proposed task, and detailing how the interfaces between the flight test, design and quality management functions are managed by the organisation who will be the Group F3 approval holder. The duration of the approval will not normally exceed 12 months and will be cancelled on completion of the programme. The organisation shall, in the opinion of the Director-General, be such as to ensure that, in all matters affecting airworthiness and flight testing, full and efficient co-ordination exists within departments and between related departments.
- 3.3 **Group F4** approval may only be granted to an organisation which meets the requirements of this Sub-section 1.8-9. There shall be a substantiation of, and proper correlation between, all the data comprising the design; this shall be at least sufficient to allow a determination to be made that there are no significant flight safety implications. The organisation shall provide a compliance and control statement containing

the particulars identified in Appendix No. 1 to this Sub-section 1.8-9. The duration of the approval will not normally exceed 3 months and will be cancelled on completion of the programme. The organisation shall satisfy the Director-General that full and efficient co-ordination exists between the persons identified under paragraph 3.5.2 of this Sub-section 1.8-9, and that they understand their roles and responsibilities.

3.4 General Requirements

3.4.1 Elements of Approval

Any approval to conduct flights under 'B Conditions' requires the availability of suitable and appropriately approved personnel, facilities and procedures for the control of the principal aspects of flight under 'B Conditions'. These shall include the following elements:

- (a) **Flight** – to conduct safe flight operations.
- (b) **Design** – to determine the areas where flight testing has to be undertaken and provide information on the appropriate conditions and limitations and also to control the aircraft build standard or modification state. The conditions shall include specification of any additional maintenance of the aircraft arising from development or modification.
- (c) **Airworthiness and Inspection** – to ensure compliance with the requisite build standard or modification state (embracing manufacture, inspection and installation) and adequate maintenance of the aircraft whilst operating under 'B Conditions'.
- (d) **Quality Management** – an independent quality system that will by means of auditing ensure that the organisation (embracing Flight, Design, Airworthiness/Inspection) operates in accordance with established procedures and remains in compliance with this Sub-section 1.8-9.

The relative strengths of these four elements may vary according to the nature of the work undertaken. (See Appendices to this Sub-section 1.8-9). The applicant may form an association with other approved organisations to meet the requirements of the approval.

3.4.2 Essential Procedures

Procedures must be documented and agreed with the Director-General to address the following:

(a) **Airworthiness**

The holder of an approval granted under this Sub-section 1.8-9 shall not allow an aircraft to fly unless he is satisfied that the aircraft is in every way fit for flight.

(b) **Conduct of Flights**

Flights shall only be undertaken in accordance with the Air Navigation (Hong Kong) Order 1995 supplemented by such procedures as the approval holder considers necessary and which are accepted by the Director-General. Applicants shall ensure that aerodromes used for flying under 'B Conditions' are suitable for the testing proposed.

(c) **Safety Provisions for Test Flying**

For all test flying under 'B Conditions', the approval holder must consider the need for special equipment for the purposes of the safety of the trials, e.g. harnesses, parachute stowages, emergency exits, anti-spin parachutes, instrumentation and the means for disconnecting automatic devices.

(d) **Certificate of Clearance**

An aircraft shall not fly on any test flight unless an appropriate Certificate of Clearance is completed by the approval holder.

3.4.3 Optional Procedures

Where it is intended that the activities, identified in this paragraph, are to be undertaken the organisation exposition must contain procedures to address them.

Air Displays

Group F1 or F3 Approval – Before an aircraft may participate in an air display in accordance with Schedule 2 of the Air Navigation (Hong Kong) Order 1995, the approval holder shall ensure that the aircraft build standard, operating limitations and display profile have been agreed to by the Director-General.

Group F4 Approval – Display flying is not permitted under a Group F4 approval.

3.4.4 Foreign Registered Aircraft

Arrangements for flight testing by a HKAR-1 Sub-section 1.8-9 approval holder, of aircraft registered in a state/place other than Hong Kong shall be agreed in writing with the Authority of the State of Registry. The aircraft is to be maintained, operated and (if necessary) modified in a manner acceptable to the authority of the State of Registry as well as being conducted in accordance with the organisation exposition.

3.5 Nomination of Persons for Acceptance by the Director-General

For each person nominated under this paragraph, a form DCA 61A shall be submitted to the Director-General.

For the head of the flight test function and all flight test aircrew, the following additional particulars are required:

- (a) Licences held;
- (b) Particulars of flight training;
- (c) Aircraft types on which in current flying practice;
- (d) Total hours on each type;
- (e) Test flying qualifications and experience.

3.5.1 Group F1 or F3 Approval

The applicant for approval shall nominate for acceptance by the Director-General:

- (a) The individual accountable for ensuring compliance with the requirements of this Sub-section 1.8-9 whose function will include co-ordination between all organisations involved;
- (b) Signatories to certificates and schedules required by this Sub-section 1.8-9.

3.5.2 Group F4 Approval

The applicant for approval shall be satisfied that the following persons hold the appropriate licences or approvals and are otherwise suitably qualified:

- (a) The individual accountable for ensuring compliance with the requirements of this Sub-section 1.8-9 whose function will include co-ordination between all organisations involved.
- (b) Signatories to certificates and schedules required by this Sub-section 1.8-9.

Where the applicant is in doubt as to the suitability of a person, a form DCA 61A shall be submitted to the Director-General.

3.6 Flight Crew

The number and qualifications (including licences where applicable) of the minimum flight crew shall be subject to agreement between the organisation and the Director-General for each type or category of aircraft (as appropriate) concerned.

NOTE: This arrangement will not prejudice the minimum flight crew finally specified in the Flight Manual.

3.7 Certificate of Clearance

3.7.1 Group F1 or F3 Approval (see Appendix No. 3 or 4 to Sub-section 1.8-9 as applicable)

- (a) All flights under 'B Conditions' shall be covered by a Certificate of Clearance, the form of which shall be agreed to by the Director-General. There shall be procedures in place to ensure that the Certificate of Clearance is amended, or replaced by a new certificate, whenever a change is made to the aircraft design standard or to any document or action referenced by the Certificate of Clearance.

- (b) Before flight of an aircraft under 'B Conditions', the Certificate of Clearance shall be signed by approved persons from each of the following functions, as defined in paragraph 3.4.1:
 - (i) Design;
 - (ii) Airworthiness and Inspection (as applicable for build standard and maintenance);
 - (iii) Flight (aircraft commander) and test pilot, if appropriate;
 - (iv) Quality Management.

Where the organisation responsible for the control and management of the 'B Conditions' project has employed another suitably approved organisation to carry out one or more of the elements required, then the signatory to the Certificates of Clearance shall sign under the approval of their own organisation and state the applicable approval reference. It is expected that at least the signatory for the Quality Management and Design elements will be under the approval authority of the applicant.

- (c) The persons signing the Certificate of Clearance shall ensure that the information provided is adequate to enable the crew to carry out the proposed flights. Before the crew undertakes the flight, they shall be satisfied with the adequacy of the information provided, and the aircraft commander shall sign the Certificate of Clearance.

3.7.2 **Group F4 Approval** (see Appendix No. 1 to Sub-section 1.8-9)

- (a) All flights under 'B Conditions' shall be covered by a Certificate of Clearance as defined in Appendix No. 1 to this Sub-section 1.8-9.
- (b) Prior to the completion of a Certificate of Clearance the applicant shall have supplied to the Director-General for review any data, reports, or other substantiation of airworthiness that the Director-General may require, together with a flight test schedule.

- (c) The Certificate of Clearance shall:
 - (i) be signed by an approved person from the appropriate design function to certify the design standard and the flight test schedule for flight, or
 - (ii) reference a document signifying Director-General's acceptance of the design standard and the flight test schedule for flight.
- (d) The Certificate of Clearance shall be signed by a person acceptable to the Director-General to certify that all necessary actions embracing maintenance, installation and inspection have been completed prior to flight and that the aircraft is in conformance with the defined design standard. (See Appendix No. 1 sub-paragraph 2.1.2 (c)).
- (e) The Certificate of Clearance shall be signed by a person acceptable to the Director-General performing the quality management function to certify that all relevant procedures have been carried out satisfactorily, prior to flight.
- (f) The pilot in command of the aircraft for the particular flight, and the test pilot if appropriate shall sign the Certificate of Clearance, prior to flight, to certify that he has received and understood all of the information necessary to conduct the flight to the specified schedule.

3.8 Flight Data Recording

- 3.8.1 Each aircraft to be flown under 'B Conditions' shall be fitted with data and/or voice recording equipment as specified in the Air Navigation (Hong Kong) Order 1995 Schedule 5 as appropriate for the description of the aircraft. Flight testing for the issue of a Certificate of Airworthiness for series production aircraft does not require fitment of flight data recorder or voice data recorder equipment.
- 3.8.2 The equipment, when required by the Air Navigation (Hong Kong) Order 1995 Schedule 5, shall be operational throughout each flight conducted under 'B Conditions'. The data and/or voice recording systems may be unserviceable for any positioning flights associated with flights under 'B Conditions'.

3.8.3 In respect of each aircraft flown under ‘B Conditions’ and which is required to carry recording equipment, a specimen of acceptable records obtained from the equipment specified in the foregoing paragraphs 3.8.1 to 3.8.2 (inclusive) shall be preserved together with a means of identifying the flight to which the record relates. A Group F4 approval holder need only provide a specimen of the records obtained if there is any evidence that the conduct of the flight test was not satisfactory.

3.8.4 The records required by paragraph 3.8.3 above shall not be destroyed without written authorisation from the Director-General.

3.9 Aircraft Markings

3.9.1 Aircraft not registered in Hong Kong nor under the law of any state/place referred to in Article 3 of the Air Navigation (Hong Kong) Order 1995 shall be marked so as to comply with the following paragraphs 3.9.2 and 3.9.3.

3.9.2 The aircraft shall be marked with the letter B followed by three characters allocated by the Director-General. The two marks shall be separated by hyphens such that the combined marks are not those displayed currently by any other aircraft. The marks shall conform to the principles of the Air Navigation (Hong Kong) Order 1995 as to registration marks of aircraft in respect of position, size, width, spacing and colour.

NOTE: These markings are only permissible within Hong Kong airspace. Where ‘B Conditions’ controls are agreed by the Director-General for use outside Hong Kong airspace, the aircraft must be registered and display the appropriate registration marks.

3.9.3 The holder of the Approval granted under this Sub-section 1.8-9 shall maintain a register of the markings, which shall cross refer to the corresponding aircraft serial number allocated by the manufacturer.

3.10 Maintenance of Aircraft

Any aircraft flying under 'B Conditions' shall continue to be maintained in accordance with the maintenance schedule or programme approved for the said aircraft. Any aircraft flying under 'B Conditions' for which there is no approved maintenance schedule or programme shall be maintained in an airworthy condition in accordance with a programme of maintenance prepared in accordance with appropriate procedures of the 'B Conditions' approval holder. These procedures should include provisions for any additional maintenance, which may arise from development or modifications to the aircraft while operating under 'B Conditions'.

4 REQUIREMENTS FOR MAINTAINING APPROVAL

- 4.1 The organisation shall be maintained at the standard necessary to undertake the work for which it is approved and the Director-General shall, at all reasonable times, have access to the organisation for the purpose of assessing the standard in use.
- 4.2 Any changes to the information provided to the Director-General for the grant of the approval shall first be notified to the Director-General in writing. Such changes require Director-General's approval.
- 4.3 Where an organisation exposition is required, this and any associated Supplements shall be maintained up to date. All amendments must be approved by the Director-General.
- 4.4 Changes of the persons nominated in accordance with paragraph 3.5 of this Sub-section 1.8-9 shall be notified to the Director-General in writing for acceptance.
- 4.5 At all reasonable times, the Director-General shall have access to all data, reports and records relating directly or indirectly to the flight testing or airworthiness of an aircraft, engine, or any part thereof. The Director-General shall also have the right to witness tests or inspections in any way associated with establishing the airworthiness or fitness for flight of an aircraft, engine, propeller, or any part thereof.
- 4.6 The Director-General may revoke, suspend, or vary the Schedule of Approval if the conditions required for approval are not maintained or if the organisation cannot continue to demonstrate compliance with the requirements of this Sub-section 1.8-9.

- 4.7 Any ‘reportable occurrence’, meaning an incident or accident subject to the provisions of Article 86 of the Air Navigation (Hong Kong) Order 1995, shall be reported to the Director-General in accordance with the information and guidance provided in CAD 382 ‘The Mandatory Occurrence Reporting Scheme’.

APPENDIX NO. 1 TO SUB-SECTION 1.8-9**ORGANISATIONS - APPROVAL FOR FLIGHT UNDER 'B CONDITIONS'
GROUP F4**

This Appendix contains information for guidance in complying with the requirements of Sub-section 1.8-9 for Group F4 approval.

1 APPLICATION FOR GROUP F4 APPROVAL

The F4 Approval is one of specified duration and specified scope. Due to the strictly limited nature of this approval, credit will not normally be given in respect of any subsequent application for any approval under Sub-section 1.8-9.

2 INFORMATION REQUIRED FOR F4 APPROVAL APPLICATION

The information listed in this section must be provided to support an application for F4 approval.

2.1 Compliance and Control Statement

The information itemised in this section 2.1 should be provided.

2.1.1 General

- (a) Applicant (Name, Address, Contact Phone No., E-mail etc).
- (b) Justification for the application for approval (the need for the proposed flying activity, identification of modification etc).
- (c) Substantiation that there are no significant flight safety implications associated with the proposed activity.
- (d) Aircraft to be tested (Aircraft Type, Serial Number, and Registration, (if any)).
- (e) Intended start and end dates for the flight trials.

2.1.2 Personnel

- (a) Name of the person who will be accountable and has corporate authority for ensuring compliance with the terms

of the Group F4 approval and the safe conduct of the flight trials.

- (b) Name(s) of the flight crew who will conduct the flight trials.

NOTE: Carriage of passengers is not permitted.

- (c) Name of the person who will certify that the aircraft is fit for the intended flight. This person may be a licensed aircraft maintenance engineer, a person approved by an approved organisation or a person nominated under paragraph 3.5.2 and accepted by the Director-General as a signatory under Sub-section 1.8-9.
- (d) Name of any other signatories of certificates and/or schedules.
- (e) Name of the person responsible for the Quality Management ensuring that all procedures have been carried out satisfactorily.

2.1.3 Facilities

- (a) Maintenance facilities.
- (b) Facilities for the planning of flights, and pre and post flight briefings.
- (c) Administration facilities suitable for the production and storage of documents associated with 'B Conditions' activities. This should include release documentation for manufactured parts.

2.1.4 Design Clearance

- (a) Definition of aircraft standard, as defined by Type Certificate Data Sheet or other documents, plus all subsequent modifications.
- (b) Design approval of the aircraft prior to flight:
 - (i) Reference to the documents and/or drawings defining the modification or operation to be evaluated during the flight trials.

- (ii) Where applicable, the identity of any associated organisation that holds an appropriate design approval granted by the Director-General together with their statements of compliance against the applicable airworthiness standards.
 - (iii) Where applicable, reference to the Airworthiness Approval Note or other documented Director-General's acceptance of the suitability of the design for the proposed flight trials.
- (c) A statement of any aircraft limitations to be complied with during the flight trials, in addition to those contained in any Flight Manual or existing Permit to Fly.

2.1.5 Aircraft Maintenance

- (a) Identification of the aircraft maintenance schedule in use including any special procedures or inspections to be applied to the modification being evaluated.

2.1.6 Parts Manufacture

- (a) Identification of the origin of parts comprising any modifications not yet approved (e.g. CAD Form One(s) for parts comprising the modification to be assessed during the trials).

2.1.7 Quality Management

- (a) The person responsible for quality management must ensure that all of the required documentation is in place and completed correctly prior to signing form DCA 195.

2.2 Flight Test Schedule

A flight test schedule for the flight trials approved by the Director-General. The schedule must specify the test objectives, the test conditions, the manoeuvres to be flown and the measurements and observations which will be required.

2.3 Certificate of Clearance (DCA 195)

A Certificate of Clearance which must be completed prior to each flight.

3 SIGNIFICANT FLIGHT SAFETY IMPLICATIONS

Significant flight safety implications exist:

- (a) when modifications could reasonably be expected to have an effect on aircraft handling, stability or reduction in climb performance. Applicants must provide a written justification that there will be no significant flight safety implication for the intended flight trials. For modifications that affect performance, such as those for banner towing, but do not present significant flight safety risk, the flight trials for quantifying the performance change may be conducted under a Group F4 approval.
- (b) when modifications could reasonably be expected to affect other flight control systems such as primary flight control, FADEC, autopilot, etc.
- (c) when modifications on EGPWS, GPWS or TCAS are neither previously approved by the Director-General nor under STC but involve unusual manoeuvres for approving such modifications. For other avionic modifications, such as those on MMR or FMS, if there is no significant flight safety risk, the flight trials for approving such modifications may be carried out under a Group F4 approval.

4 FUNCTIONAL FLIGHT TESTS

A modification which has previously been approved by the Director-General will normally require no further action on behalf of the applicant. However, the modification may, in its instructions, require a functional flight test to be undertaken prior to formal acceptance of the modification. If the flight test involves a functionality check only, then it can be carried out under 'A Conditions' and does not require any approval for flight test under 'B Conditions'.

Test flying of modifications not previously approved by the Director-General, will normally be carried out under 'B Conditions'.



香港特別行政區政府
 民航處
Civil Aviation Department
 The Government of the Hong Kong Special Administrative Region

Certificate Number: _____

APPROVAL FOR FLIGHT UNDER “B CONDITIONS” – CERTIFICATE OF CLEARANCE

This certificate is provided to support a Group F4 approval and is valid on the day of issue only. The certificate must be amended or replaced by a new certificate whenever a change is made to the aircraft design standard or to any document or action referenced by the certificate.

SECTION 1: Organisation, Aircraft and Flight Details

(1) Name of Organisation			
(2) Approval Number			
(3) State of Registry		(4) Registration	
(5) Aircraft Type		(6) Serial Number	
(7) Date of Flight		(8) Flight Number	
(9) Maximum Weight & C.G. Limits		(10) Minimum Number of Crew	
(11) Airfield			
(12) Purpose(s) of flight (Please refer to AN(HK)O, Schedule 2, “B Conditions”, paragraph (2) for the purpose(s) of flight).			
(13) Aircraft limitations: (Flight Manual or other defined documents shall be referenced to any limitations specific to the trial or configuration).			
(14) Aircraft design standard (Identify initial build and subsequent modifications).			
(15) Flight Test Schedule or flight procedures or test plan (Document reference)			
(16) Other Restrictions			

CAD form DCA 195 – Section 1

SECTION 2: Clearance for Flight

<p>DESIGN</p> <p>I hereby declare that the design standard specified in item (14) of Section 1 complies with the requirements and standards agreed with the Director-General and is adequate to conduct the necessary flight test.</p> <p><input type="checkbox"/> Signed on behalf of _____ <div style="display: flex; justify-content: space-between; width: 100%; margin-top: 5px;"> Design Organisation Name Signature Date </div> <input type="checkbox"/> Reference of document signifying Director-General's acceptance of the design standard: _____ <input type="checkbox"/> (select the appropriate option)</p>
<p>BUILD</p> <p>I hereby declare that the build standard conforms to the design standard specified in item (14) of Section 1 and the aircraft is fit for flight.</p> <p>Signed on behalf of _____ <div style="display: flex; justify-content: space-between; width: 100%; margin-top: 5px;"> Manufacturer Name Signature Date </div></p>
<p>MAINTENANCE</p> <p>I hereby declare that the necessary maintenance actions have been completed in accordance with the maintenance requirements specified by the manufacturer and the aircraft is airworthy.</p> <p>Hours available to the next maintenance check: _____</p> <p>Signed by Maintenance Engineer _____ <div style="display: flex; justify-content: space-between; width: 100%; margin-top: 5px;"> Name Signature Date </div></p>
<p>FLIGHT</p> <p>I hereby declare that the flight crew and ground observers, if any, understand and accept the test plan and limitations for the flight and that a pre-flight briefing has been carried out. The aircraft is correctly loaded in terms of weight, centre-of-gravity and fuel sufficiency.</p> <p>Signed by the Commander of the aircraft _____ <div style="display: flex; justify-content: space-between; width: 100%; margin-top: 5px;"> Name Signature Date </div></p>
<p>QUALITY</p> <p>Reference of document signifying Director-General's acceptance of the flight test schedule: _____</p> <p>The flight test schedule referenced above has been accepted as appropriate for the purpose of the flight. The aircraft is in conformance with the design standard specified in item (14) of Section 1 and all relevant procedures have been carried out satisfactorily. All conditions stated on this certificate are adequate to conduct the necessary flight test and all of the conditions of the approval have been complied with. This form has been completed correctly and signed by the appropriate persons.</p> <p>Signed by Quality Manager _____ <div style="display: flex; justify-content: space-between; width: 100%; margin-top: 5px;"> Name Signature Date </div></p>

CAD form DCA 195 – Section 2

APPENDIX NO. 3 TO SUB-SECTION 1.8-9

**ORGANISATIONS - APPROVAL FOR FLIGHT UNDER 'B CONDITIONS'
GROUP F1**

This Appendix contains information for guidance in complying with the requirements of Sub-section 1.8-9 applicable to a Group F1 approval.

1 Management

The following information is required to be included in the organisation exposition:

- (a) Name and address of company.
- (b) A company organisation chart showing the lines of responsibility to the Accountable Manager of:
 - (i) the chief test pilot and/or the head of the flight test function (see paragraph 2 below);
 - (ii) the design function (see paragraph 3 below);
 - (iii) the quality management function (see paragraph 4 below);
 - (iv) the airworthiness and inspection, which includes the manufacturing, installation and maintenance functions (see paragraph 5 below).
- (c) Procedures detailing how the flight test function will interface with the approved design and quality management functions, for the issue of a Certificate of Clearance, including the procedures for the generation and approval of flight test schedules.
- (d) The nominated signatories for the Certificate of Clearance.
- (e) A copy of a Certificate of Clearance.
- (f) Procedures detailing the interface arrangements of any associated organisations supporting the approval for flight test under 'B Conditions'.

NOTE: The flight test schedule in (c) above must specify the test points to be examined during a specific test flight.

2 The Flight Test Function

The following should be included in the organisation exposition:

- (a) Particulars of facilities for the Flight Test function.
- (b) An organisation chart showing the lines of responsibility of the flight test personnel to the Head of the Flight Test function.
- (c) The names of the Certificate of Clearance flight test signatories (see also paragraph 6(n) of this Appendix).
- (d) The Flight Test Operations Manual, detailing the procedures for the control of flight tests.

3 The Design Function

The following information relating to the design function should be included in the organisation exposition:

- (a) Details of the design function supporting the approval for flight test under 'B Conditions'.
- (b) The names of the Certificate of Clearance design signatories (see also paragraph 6(k) of this Appendix).
- (c) The procedures for the control of the modification standard, configurations and conditions to be flight tested.

4 The Quality Management Function

The following information relating to the quality management function should be included in the organisation exposition:

- (a) Details of the quality management function supporting the approval for flight test under 'B Conditions'.
- (b) The names of the Certificate of Clearance quality management signatories (see also paragraph 6(o) of this Appendix).

5 The Airworthiness and Inspection Function

The following information relating to the airworthiness and inspection function, which includes manufacture, installation and maintenance, should be included in the

organisation exposition:

- (a) The names of the Certificate of Clearance Airworthiness and Inspection signatories (see also paragraphs 6(l) and (m) of this Appendix).
- (b) The procedures for the control of the build standard of the aircraft.
- (c) The procedure for notifying the pilot of any changes embodied on the aircraft.
- (d) The arrangements for maintaining the aircraft (see HKAR-1 Sub-section 1.8-9, sub-paragraph 3.11).

6 Certificate of Clearance

The form of the Certificate of Clearance, to be agreed with the Director-General, should normally contain at least the following information:

- (a) Organisation name and approval number.
- (b) Certificate number.
- (c) The date of issue.
- (d) Type, serial number and registration of the aircraft.
- (e) A reference to documents defining the design standard of the aircraft.
- (f) A reference to the approved flight test schedule(s).
- (g) The maximum weight and centre-of-gravity limits.
- (h) All pertinent operating limitations.
- (i) The minimum crew.
- (j) Any other restrictions considered necessary.
- (k) A statement that the design standard and conditions stated on the certificate are adequate to conduct the necessary flight tests.
- (l) A statement that the build standard of the aircraft conforms to the design standard and that the aircraft is fit for flight.
- (m) A statement of compliance with maintenance requirements specified by the

manufacturer and if appropriate, as modified by the design function in relation to the work being undertaken, including hours available to the next maintenance check.

- (n) A statement that the flight crew (and ground observers) understand and accept the test plan and limitations for the flight and that a pre-flight briefing has been carried out.
- (o) A statement by the quality management function that all relevant procedures have been carried out satisfactorily.

7 Functional Flight Tests

An aircraft conforming to a build standard, including all modifications, which has previously been approved by the Director-General will normally require no further action on behalf of the Applicant. However, the instructions for actions to be completed prior to release to service for the aircraft, or for embodiment of an approved modification may require a functional flight test to be undertaken. If the flight test involves a functionality test only, then it can be carried out under 'A Conditions' and does not require any approval for flight test under 'B Conditions'. Test flying of an aircraft of a build standard, including all modifications, not previously approved by the Director-General will normally be carried out under 'B Conditions'.

8 Categories of Aircraft

As indicated in HKAR-1 Sub-section 1.8-9 paragraph 1.4, setting out the requirements for grant of approval may restrict the organisation to a limited scope or category of aircraft. An organisation may be approved for more than one category. The following categorisation will be used in the Schedule of Approval in relation to the categories of aircraft:

- Category 1: Aeroplanes greater than 5,700 kg
- Category 2: Aeroplanes up to and including 5,700 kg
- Category 3: Rotorcraft greater than 5,700 kg
- Category 4: Rotorcraft, excluding Light Gyroplanes, up to and including 5,700 kg
- Category 5: Very Light Aeroplanes up to 750 kg
- Category 6: Microlight Aeroplanes and Small Light Aeroplanes up to 450 kg
- Category 7: Sailplanes and Powered Sailplanes
- Category 8: Gas Airships
- Category 9: Manned Free Balloons and Hot Air Airships
- Category 10: Light Gyroplanes

NOTE: These are broad categories which may cover a wide variety of types of aircraft. Further restrictions may be imposed within these categories.

APPENDIX NO. 4 TO SUB-SECTION 1.8-9

**ORGANISATIONS - APPROVAL FOR FLIGHT UNDER 'B CONDITIONS'
GROUP F3**

This Appendix contains information for guidance in complying with the requirements of Sub-section 1.8-9 for Group F3 approval.

1 Application for Group F3 Approval (see HKAR-1 Sub-section 1.8-9)

The Group F3 Approval is one of specified duration and specified scope. It is recognised that some organisations will have the need to apply for additional approval(s) within the Group F3 either after termination of the task against which the original approval was granted, or concurrently with the original task. It is not the intention of the requirements of HKAR-1 Sub-section 1.8-9 in this case to place undue burden upon organisations in the subsequent application process.

- (a) When making the initial application for the grant of a Group F3 Approval, or in the event of making a new application following a revocation or suspension of a previous Group F3 Approval, the organisation must satisfy all relevant parts of HKAR-1 Sub-section 1.8-9 including the provision of an appropriate organisation exposition (or supplement to an existing organisation exposition where an approval in another Group is held).
- (b) Where an organisation wishes to make a subsequent application for the grant of a Group F3 Approval and has previously held a Group F3 Approval which has expired having reached its specified duration, or holds a current Group F1 or F3 Approval with a different scope specification, then the Director-General may agree that a full organisation exposition, satisfying all relevant parts of HKAR-1 Sub-section 1.8-9, is not necessary and it will be sufficient for that organisation to include with the application a supplement to the original organisation exposition submitted and approved in connection with the original application.
- (c) The organisation exposition supplement, identified in sub-paragraph 1(b) of this Appendix, need only identify the items, required by HKAR-1 Sub-section 1.8-9, which have changed from that identified in the original document and should contain a statement that all other items in the original document remain unchanged. The basic procedures, which control the flight test activity, would not be expected to change. Examples of the items that may change are the modification reference, flight test schedule, aircraft registration and serial number, flight test crew, manufacture, installation or maintenance organisations etc.

- (d) Where an application is made for the grant of an additional Group F3 Approval, as defined in sub-paragraph 1(b) of this Appendix, then the Director-General's process required to investigate the application will normally consider only the changes and will be kept to a minimum. In the event that no changes have occurred, or where the changes are simple, an expeditious process resulting in the granting of the Group F3 Approval can be anticipated.
- (e) Notwithstanding any other statement contained within this Appendix, where an organisation has, or has applied for the grant of, more than one Group F3 Approval, the Director-General may wish to reassess the standards in use from time to time.
- (f) In connection with an application made for the grant of an additional Group F3 Approval, as defined in sub-paragraphs 1(b) and 1(d) of this Appendix, any charges due will be commensurate with the Director-General's work involved and may be less than that required for an initial application. In certain circumstances, particularly where no changes have occurred, it may be possible to include the charges for the additional Group F3 Approval within the overall charges for an associated modification.

2 Management

The following information is required to be included in the Organisation Exposition:

- (a) Name and address of company.
- (b) A company organisation chart showing the lines of responsibility to the Accountable Manager of:
 - (i) the Chief Test Pilot and/or the head of the flight test function (see paragraph 3 below);
 - (ii) the design function (see paragraph 4 below);
 - (iii) the quality management function (see paragraph 5 below);
 - (iv) the airworthiness and inspection function which includes the manufacturing, installation and maintenance functions (see paragraph 6 below).

- (c) Procedures detailing how the flight test function will interface with the approved design and quality management functions, for the issue of a Certificate of Clearance, including the procedures for the generation and approval of flight test schedules.
- (d) The nominated signatories for the Certificate of Clearance.
- (e) A copy of a Certificate of Clearance.
- (f) Procedures detailing the interface arrangements of any associated organisations supporting the approval for flight test under 'B Conditions'.

NOTE: The flight test schedule in paragraph (c) above must specify the test points to be examined during a specific test flight.

3 The Flight Test Function (see HKAR-1 Sub-section 1.8-9)

The following should be included in the organisation exposition or organisation exposition supplement as appropriate:

- (a) Particulars of facilities for the flight test function.
- (b) An organisation chart showing the lines of responsibility of the flight test personnel to the Head of the Flight Test function.
- (c) The names of the Certificate of Clearance flight test signatories (see also paragraph 7(n) of this Appendix).
- (d) The flight Test Operations Manual, detailing the procedures for the control of flight tests, must be referred to in the organisation exposition.

4 The Design Function

The following information relating to the design function should be included in the organisation exposition or organisation exposition supplement as appropriate:

- (a) Details of the design function supporting the approval for flight test under 'B Conditions'.
- (b) The names of the Certificate of Clearance design signatories (see also sub-paragraph 7(k) of this Appendix).
- (c) The procedures for the control of the modification standard, configurations and conditions to be flight tested.

5 The Quality Management Function

The following information relating to the quality management function should be included in the organisation exposition or organisation exposition supplement as appropriate:

- (a) Details of the quality management function supporting the approval for flight test under 'B Conditions'.
- (b) The names of the Certificate of Clearance quality management signatories (see also sub-paragraph 7(o) of this Appendix).

6 The Airworthiness and Inspection Function

The following information relating to the airworthiness and inspection function, which includes manufacture, installation and maintenance, should be included in the organisation exposition or organisation exposition supplement as appropriate:

- (a) The names of the Certificate of Clearance airworthiness and inspection signatories (see also sub-paragraphs 7(l) and 7(m) of this Appendix).
- (b) The procedures for the control of the build standard of the aircraft.
- (c) The procedure for notifying the pilot of any changes embodied on the aircraft.
- (d) The arrangements for maintaining the aircraft.

7 Certificate of Clearance

The form of the Certificate of Clearance to be agreed with the Director-General should normally contain at least the following information:

- (a) Organisation name and approval number.
- (b) Certificate number.
- (c) The date of issue.
- (d) Type, serial number and registration of the aircraft.
- (e) A reference to documents defining the design standard of the aircraft.
- (f) A reference to the approved flight test schedule(s).

- (g) The maximum weight and centre-of-gravity limits.
- (h) All pertinent operating limitations.
- (i) The minimum crew.
- (j) Any other restrictions considered necessary.
- (k) A statement that the design standard and conditions stated on the certificate are adequate to conduct the necessary flight tests.
- (l) A statement that the build standard of the aircraft conforms to the design standard and that the aircraft is fit for flight.
- (m) A statement of compliance with maintenance requirements specified by the manufacturer and if appropriate, as modified by the design function in relation to the work being undertaken, including hours available to the next maintenance check.
- (n) A statement that the flight crew (and ground observers) understand and accept the test plan and limitations for the flight and that a pre-flight briefing has been carried out.
- (o) A statement by the quality management function that all relevant procedures have been carried out satisfactorily.

8 Functional Flight Tests

An aircraft conforming to a build standard, including all modifications, which has previously been approved by the Director-General will normally require no further action on behalf of the Applicant. However, the instructions for actions to be completed prior to release to service for the aircraft, or for embodiment of an approved modification may require a functional flight test to be undertaken. If the flight test involves a functionality test only, then it can be carried out under 'A Conditions' and does not require any approval for flight test under 'B Conditions'. Test flying of an aircraft of a build standard, including all modifications, not previously approved by the Director-General will normally be carried out under 'B Conditions'.

9 Categories of Aircraft

As indicated in HKAR-1 Sub-section 1.8-9 paragraph 3, setting out the Requirements for grant of approval may restrict the organisation to a limited scope or category of

aircraft. An organisation may be approved for more than one category. The following categorisation will be used in the Schedule of Approval in relation to the categories of aircraft:

- Category 1: Aeroplanes greater than 5,700 kg.
- Category 2: Aeroplanes up to and including 5,700 kg.
- Category 3: Rotorcraft greater than 5,700 kg.
- Category 4: Rotorcraft, excluding Light Gyroplanes, up to and including 5,700 kg.
- Category 5: Very Light Aeroplanes up to 750 kg.
- Category 6: Microlight Aeroplanes and Small Light Aeroplanes up to 450 kg.
- Category 7: Sailplanes and Powered Sailplanes.
- Category 8: Gas Airships.
- Category 9: Manned Free Balloons and Hot Air Airships.
- Category 10: Light Gyroplanes.

NOTE: These are broad categories which may cover a wide variety of types of aircraft. Further restrictions may be imposed within these categories.

SECTION 1.8

SUB-SECTION 1.8-15

AEROPLANES AND ROTORCRAFT NOT EXCEEDING 2730 kg – MAINTENANCE ORGANISATIONS – GROUP M3

1 INTRODUCTION (See Appendix No. 1 to Sub-section 1.8-15)

1.1 An organisation, subject to compliance with the requirements of this Sub-section 1.8-15, may be approved for the functions specified in paragraph 1.2 in respect of aeroplane and rotorcraft:-

- (a) of which the Maximum Total Weight Authorised does not exceed 2730 kg,
- (b) is registered in Hong Kong, and
- (c) has a Certificate of Airworthiness in any category (except Special Category).

1.2 An organisation may be approved to perform and to issue certificates as appropriate, in respect of the maintenance of aircraft (see Sub-section 1.6-2), on such maintenance tasks as prescribed in the Approved Maintenance Schedule.

2 APPLICATION

2.1 CAD Form DCA 61, copy of which can be obtained from the CAD website, shall be completed and returned to the same address.

2.2 The Accountable Manager shall submit his/her credentials on CAD Form DCA 61A to the Director-General for acceptance.

3 REQUIREMENTS FOR APPROVAL

3.1 **Personnel** (See Appendix No. 1 to Sub-section 1.8-15 Paragraph 2)

3.1.1 The organisation shall appoint an accountable manager who has corporate authority for ensuring that all maintenance required by

the customer can be financed and carried out to the standard required.

3.1.2 the organisation has sufficient staff holding type rated HKAR-66 aircraft maintenance licence in Category B1, B2/B2* or B3 as appropriate and who will be responsible for issuing certificates in accordance with 1.2.

3.1.3 Where in some instances certificates may need to be issued by personnel not permanently employed by the organisation, such as Category B2/B2* certifying staff, the organisation shall satisfy the Director-General that acceptable arrangements exist between the particular person and the organisation.

3.1.4 The organisation shall satisfy the Director-General that licensed and unlicensed staff are of sufficient numbers and are so experienced that they may reasonably be expected to undertake the volume and type of work appropriate to the certificates to be issued.

3.2 Organisation and Procedures (see Sub-section 1.8-15 Appendix No. 1, Paragraph 3)

3.2.1 The organisation shall provide a maintenance organisation exposition, and any subsequent amendments, to the Director-General for approval. It should contain the following information:-

- (a) The terms of reference of senior personnel, as applicable to activities under the Approval;
- (b) the structure of the organisation and the associated chains of responsibility;
- (c) a list of licensed staff in accordance with 3.1.2 with their scope of approval;
- (d) approved maintenance organisation's scope of work relevant to the extent of approval;
- (e) maintenance facilities together with information on essential tools and equipment;

- (f) the maintenance procedures including reporting of unairworthy conditions and matters affecting continued airworthiness;
- (g) the Certificate of Release to Service statement and the qualification requirements of its signatories (see Sub-section 1.6-2);
- (h) quality and safety system;
- (i) evaluation of technical information issued by manufacturers and airworthiness authorities; and
- (j) any further matters which the Director-General decides are necessary arising from initial assessment or subsequent supervisory visits.

3.2.2 Copies of all amendments to the maintenance organisation exposition shall be furnished promptly to all organisations or persons to whom the exposition has been issued.

3.2.3 An organisation approved as a Group M3 Organisation placing orders on suppliers and unapproved organisations shall satisfy itself that the origin of each item supplied is identified and that the item is acceptable and suitable for the intended purpose.

NOTE: Approved organisations when undertaking work outside their terms of Approval are deemed to be unapproved.

4 REQUIREMENTS FOR THE CONTINUATION OF APPROVAL

- 4.1 The organisation shall be maintained to the standard necessary to undertake the work for which it is approved, and the Director-General shall have access to the organisation for the purpose of assessing this standard at any given time.
- 4.2 Changes of personnel nominated in accordance with 3.1.1 shall be notified to the Director-General in writing for acceptance.
- 4.3 The exposition required by paragraph 3.2 shall be reviewed periodically by the organisation and any necessary amendments promulgated.

- 4.4 The Director-General shall be consulted where there is any difficulty about the interpretation of the requirements, the associated procedures, or on any airworthiness matter which involves new problems or techniques.
- 4.5 The Director-General may revoke, suspend or vary the Terms of Approval if, in the opinion of the Director-General, the conditions prescribed for Approval are not maintained.

APPENDIX NO. 1 TO SUB-SECTION 1.8-15**ASSESSMENT OF SUITABILITY FOR APPROVAL****1 INTRODUCTION**

The purpose of Sub-section 1.8-15 is to ensure that, for aeroplanes or rotorcraft specified in Sub-section 1.8-15 Paragraph 1.1, any maintenance tasks specified by an Approved Maintenance Schedule will have been completed at an organisation appropriately approved by the Director-General for the purpose.

2 PERSONNEL (See Sub-section 1.8-15, Paragraph 3.1)

2.1 The organisation shall nominate an Accountable Manager whose responsibilities include ensuring that the organisation complies with HKAR-1 Sub-section 1.8-15 requirements.

2.2 As a minimum, the organisation should have sufficient maintenance personnel holding type rated HKAR-66 aircraft maintenance licence in Category B1, B2/B2* or B3 covering the aircraft types involved.

3 ORGANISATION AND PROCEDURES (See Sub-section 1.8-15, Paragraph 3.2)

3.1 The organisation will have to satisfy the Director-General that the management of the organisation will be conducted with due regard to the needs of continuing airworthiness.

3.2 The organisation will have to be such, in the opinion of the Director-General, as to ensure that in all matters affecting airworthiness full and efficient co-ordination exists between individual licensed aircraft maintenance engineers and other members of the staff.

3.3 In all areas of direct functions approved by the Director-General, e.g. the evaluation and reporting of flight tests, the applicant will have to satisfy the Director-General that the persons nominated to exercise the authority are competent and adequately experienced. Suitable procedures, including provision for verification, will have to be defined and applied to ensure the accuracy of documents prepared for such approved functions.

- 3.4 When assessing an organisation for Approval the Director-General will examine the methods used to control maintenance and this will include:-
- (a) the structure of the Organisation;
 - (b) the number of licensed aircraft maintenance personnel employed or contracted (See Sub-section 1.8-15, Paragraph 3.1.3) and the scope of the licences held by these personnel, appropriate to the Approval;
 - (c) the adequacy of the facilities, accommodation and equipment necessary to cover those types of aircraft appropriate to the Approval;
 - (d) the holding of technical publications and data for those types of aircraft appropriate to the Approval;
 - (e) the methods of assessing information promulgated by manufacturers and airworthiness authorities to ensure continued airworthiness;
 - (f) procedure for the preservation and correlation of maintenance and technical records;
 - (g) hangar accommodation, with adequate lighting and power supplies and of sufficient size to house the maximum number of aircraft expected to be worked on at any one time, shall be provided. Approval of the main premises may, for a particular case and with the agreement of the Director-General, be extended to cover other premises;
 - (h) the accommodation shall include suitable areas where publications and drawings may be studied and where aircraft maintenance documents may be prepared and stored;
 - (i) adequate storage arrangements, together with the necessary records and systems for controlling aircraft components, parts and materials shall be provided;
 - (j) adequate equipment, including general maintenance equipment and specialised tools shall be provided;

- (k) the calibration of test equipment shall be checked as frequently as is necessary to maintain confidence in the accuracy of the equipment;
- (l) a quality system shall be established and used such that it enables the organisation to ensure the maintenance of the aircraft, engine or its related parts conform to approved specifications and is in condition for safe operation. The quality system may include regular quality assurance audits performed by appropriately qualified auditors;
- (m) a safety management system shall be implemented if the organisation issues a certificate of release to service in respect of the aircraft, or of any equipment or part of the aircraft, that is registered in Hong Kong and is flown for the purposes of public transport; and
- (n) the organisation shall make available to the staff concerned the necessary technical data, e.g. CAD publications, approved manuals, specifications, data sheets and related literature appropriate to the class of work for which Approval is sought:
 - i. the technical data shall consist of that issued from the manufacturers by way of maintenance manuals, micro fiche, service bulletins and other forms of continuing airworthiness information;
 - ii. written agreements shall be made by the organisation with the appropriate manufacturers, or other recognised suppliers, for the supply of amendments and changes of the publications held. A suitable system for amending the documents shall be provided; and
 - iii. where technical data is held on loan it shall be the responsibility of the user to ensure that the documents concerned are amended up to date.