



香港特別行政區政府
民航處

Civil Aviation Department

The Government of the Hong Kong
Special Administrative Region

CAD 549

Master Minimum Equipment List (MMEL) /
Minimum Equipment List (MEL)

Issue 2 Revision 1
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FOREWORD

Whenever aviation requirements consider aircraft design, or installation and operation of equipment, it is assumed that no known failures exist at the commencement of flight. However, with various levels of redundancy designed into aircraft, operation of certain systems or installed equipment may not be required if the remaining operative equipment can maintain an acceptable level of safety.

CAD 549 MMEL/MEL prescribes the conditions for the approval of documents called "Master Minimum Equipment Lists" (MMEL) and "Minimum Equipment Lists" (MEL).

The MMEL/MEL is an alleviating document to be used when a failure has been identified. Its purpose is not, however, to encourage the operation of aircraft with inoperative equipment, or to act as a serviceability checklist. Such operations are permitted only as a result of careful analysis of each item to ensure that an acceptable level of safety is maintained. A fundamental consideration in permitting the dispatch of aircraft with inoperative equipment is that the continued operation of an aircraft in this condition should be limited.

PREAMBLES

The preambles are intended to be a summarized record of the main changes introduced by each amendment of CAD 549 MMEL/MEL.

*Issue 1**1 May 2001*

- New requirement for dispatch with inoperative equipment.

*Revision 1**15 September 2004*

- Added the "Flight Day" terminology to HKAR MMEL/MEL.5.
- Defined the Category A Rectification Interval when the time interval is listed as Flight Day.
- Added a new Appendix 2, HKCAD MEL Policy Document, to ACJ MMEL/MEL.65.

*Revision 2**15 December 2006*

- Added/amended the terminologies "Equipment", "Rectification Interval", "RIE", "Type Certificate" and "Type Certificate Holder" to/in HKAR MMEL/MEL.5.
- Amended HKAR MMEL/MEL.20 to cover "Preparation of MMEL".
- Amended HKAR MMEL/MEL.35 to address by whom and by how the "Operational and Maintenance Procedures" should be produced and published, and later amended.
- Amended HKAR MMEL/MEL.40 to clarify that the commencement of Category A Rectification Interval in sub-paragraph (a)(ii) is for time period in calendar days.
- Amended HKAR MMEL/MEL.45 to address that MMEL is no more approved but rather accepted by the Director-General. MMEL acceptance is now used throughout HKAR-MMEL/MEL.

- Added HKAR MMEL/MEL.46 for "MMEL Revision".
- Included in HKAR MMEL/MEL.60 a sub-paragraph stating that reduced time scales for implementation may be required for safety related MMEL revisions.
- Included in HKAR MMEL/MEL.65 that MEL Preamble shall also contain guidance for maintenance personnel using the MEL.
- Added HKAR MMEL/MEL.81 "Rectification Interval Extension (RIE)" the consolidated requirements on RIE. The associated HKAR MMEL/MEL.80 is amended accordingly.
- Amended ACJ MMEL/MEL.1(d) stating that the operator's MEL should include procedures to deal with any failures which occur between the start of taxi and take-off brake release.
- Added ACJ MMEL/MEL.10(c) the interpretative material on non-safety related equipment.
- Added ACJ MMEL/MEL.55 stating that an MEL should include the dispatch conditions associated with flights conducted in accordance with the operational approvals/permissions.
- Added ACJ MMEL/MEL.75 on "Operational and Maintenance Procedures".
- Added ACJ MMEL/MEL.81 on "Rectification Interval Extension (RIE)".
- Amended Appendix 1 to ACJ MMEL/MEL.65 "Specimen MEL Preamble" in accordance with this amendment of HKAR-MMEL/MEL.
- Amended Appendix 2 to ACJ MMEL/MEL.65 "HKCAD MEL Policy Document" with reference to JAA Temporary Guidance Material and UKCAA MEL Policy Data.
- Amended throughout the text of HKAR-MMEL/MEL that MEL is accepted by the Director-General rather than approved by him.

*Revision 3**25 February 2009*

- Amended Appendix 2 to ACJ MMEL/MEL.65 to include provisions of Article 14A of the AN(HK)O and changed the term "Exemption" to "Permission", together with some minor grammatical corrections.
- Amended throughout the text of HKAR-MMEL/MEL that MMEL and MEL are approved rather than accepted by the Director-General.

*Revision 4**10 December 2012*

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

*Issue 2**15 December 2016*

- Amended the format and the content of the publication with reference to UKCAA CAP 549.
- Added the policy of adopting Certification Specifications and Guidance Material for Master Minimum Equipment List (CS-MMEL) at Chapter 2.
- Amended Appendix 2 "HKCAD MEL Policy Document" with reference to CS-MMEL.

*Revision 1**28 September 2018*

- Delete List of Effective Pages (LEP) to align with other CAD publication format.
- Amended guidance on operation outside the scope of the MEL at Chapter 3 Paragraph 9.
- Added a Note at the Category A Rectification Interval for a time period that is specified other than in calendar days or flight days at Appendix 1 Example MEL Preamble.
- Added a new item Universal Precaution Kit, revised anti-collision light and removed some unnecessary items at Appendix 2 HKCAD MEL Policy Document.

CHAPTER 1 – GENERAL REQUIREMENTS

1 Introduction

- 1.1 Under the provisions of Article 14A of the Air Navigation (Hong Kong) Order 1995 (hereinafter referred to as the Order or AN(HK)O) no aircraft registered in Hong Kong may commence a flight if any of the equipment required by or under the Order is not carried or is not in a fit condition for use, unless a Permission to do so has been issued by the Director-General. An operator shall establish for each aircraft, an MEL approved by the Director-General that will be based upon the relevant MMEL (if one exists). In addition, an operator shall not operate an aircraft other than in accordance with the MEL unless permitted by the Director-General. Any such permission or approval will in no circumstances permit operations outside the constraints of the MMEL.
- 1.2 The basis of the procedures described in this document is that each aircraft type with a Maximum Total Weight Authorised (MTWA) exceeding 2730 kg will have a Director-General approved Master Minimum Equipment List (MMEL). Where an approved MMEL has not been produced for a particular aircraft type, there may be an equivalent document acceptable to the Director-General. The MMEL may be a standalone document or it may be an MMEL Supplement to be used in conjunction with a specific MMEL. In the absence of an approved MMEL (or equivalent document), the Minimum Equipment List (MEL) may only include unserviceabilities as expressly permitted by the Order or by special limitations and procedures in the approved Flight Manual or by agreement with the Director-General.
- 1.3 An MMEL is not an exhaustive list of all equipment items required by law to be carried. An operator may include in an MEL any additional items that are required to be carried where such entries clarify legal requirements (e.g. an operator may choose to include an item concerning torches for Public Transport operations simply to establish the minimum numbers required for a particular type of aircraft).The MMEL will deal with items of equipment which may safely be permitted to be unserviceable under certain conditions. Those items which are essential for safety

under all conditions will not necessarily be included.

- 1.4 The MMEL is applicable to an aircraft type but does not take into account the operating circumstances of individual operators of that type; therefore, it cannot in itself be regarded as providing operational permission. In order to establish whether or not it is acceptable to dispatch with particular equipment unserviceable, it will be necessary for each operator to prepare its own MEL and seek the Director-General approval.
- 1.5 The MEL cannot be less restrictive than the appropriate Director-General approved MMEL and may have to be more restrictive to reflect an individual operator's circumstances and capabilities.

2 Configuration Deviation Lists

Configuration Deviation Lists (CDL) or their equivalent, are not a part of the MMEL and are not dealt with in this document. CDL are used to identify any external components of an aircraft type which may be missing for dispatch. Where necessary, they will provide any associated information on performance corrections for such cases (e.g. missing landing gear doors, flap actuator fairings, etc.). Where dispatch with such items missing is approved, the CDL may be published as part of the approved Flight Manual.

3 Airworthiness Directives and other Mandatory Requirements

Where there is a conflict between the MMEL or MEL and an Airworthiness Directive or any other Mandatory Requirement, it is the data or information contained in the Airworthiness Directive or the Mandatory Requirement (e.g. Continued Airworthiness requirement) which shall override.

4 Limit of MEL Applicability

- 4.1 If a failure occurs during the taxi phase before the start of the take-off roll, any decision to continue the flight should be subject to pilot judgement and good airmanship. The commander may refer to the MEL before any decision to continue the flight is taken.
- 4.2 The operator's MEL should include procedures to deal with any failures which occur between the start of taxi and take-off brake release.

5 Terminology

Terms and abbreviations used in MMEL/MEL have the following meaning:

- (a) **"As required by operating requirements"** means the listed item of equipment is subject to certain provisions (restrictive or permissive) expressed in the Air Navigation (Hong Kong) Order 1995.
- (b) **"Approved by the Director-General"** means approved by the Director-General of Civil Aviation (hereinafter referred to as the Director-General) or any officer delegated with such authority by the Director-General.
- (c) **"Calendar Day"** means a 24 hour period from midnight to midnight based on either UTC or local time, as selected by the operator.
- (d) **"Commencement of flight"** means the point when an aircraft begins to move under its own power for the purpose of preparing for take off.
- (e) **"Considered Inoperative"** as used in the dispatch conditions, means that item must be treated for dispatch, taxiing and flight purposes as though it were inoperative. The item shall not be used or operated until the original deferred item is repaired.

- (f) **"Day of discovery"** means the calendar day that a malfunction is recorded in the aircraft maintenance record/log book.
 - (g) **"Flight Day"** means a 24 hour period (from midnight to midnight) either UTC or local time, as established by the operator, during which at least one flight is initiated for the affected aircraft.
 - (h) **"If installed"** means that the equipment is either optional or is not required to be installed on all aircraft covered by the MMEL.
 - (i) **"Inoperative"** means that the equipment does not accomplish its intended purpose or is not consistently functioning within its design operating limits or tolerances.
- Note: Some equipment have been designed to be fault tolerant and are monitored by computers which transmit fault messages to a centralised computer for the purpose of maintenance. The presence of this category of message does not necessarily mean that the equipment is inoperative.
- (j) **"Item"** means component, instrument, equipment, system or function.
 - (k) **"Rectification Interval"** means a limitation on the duration of operations with inoperative equipment.
 - (l) **"RIE"** An abbreviation for Rectification Interval Extension.
 - (m) **"Supplemental Type Certificate Holder"** means the holder of, or applicant for, a Supplemental Type Certificate.
 - (n) **"Type Certificate"** means a Type Certificate, issued by or validated by the Director-General.
 - (o) **"Type Certificate Holder"** means the holder of, or applicant for, a Type Certificate.

CHAPTER 2 - MMEL

1 Introduction

- 1.1 Although production of an MMEL is not one of the conditions for Type Certification or for the issue of a Certificate of Airworthiness (C of A) it is strongly recommended that, for new aircraft types, the MMEL is prepared during the certification process and is completed before entry into service. It may not be possible for the Director-General to approve an MEL in order to allow operation with items unserviceable unless an MMEL (or an equivalent document approved by the Director-General) exists.
- 1.2 The MMEL shall be provided with a relevant preamble, definitions and clarifying notes which shall adequately reflect the scope, extent and purpose of the MMEL.

2 Approval of the MMEL

- 2.1 Normally an MMEL is issued by the Type Certificate Holder and approved by the National Aviation Authority (NAA) of the State of Design. Where such an MMEL already exists, the Director-General will normally consider it as a Director-General approved MMEL and if necessary may restrict any differences to those items affected by the Hong Kong legislation or those for which the Director-General applies a different policy. These changes may be more (or less) restrictive depending on the particular legislation or policy.
- 2.2 If required, the Director-General will produce an MMEL or MMEL Supplement based on the MMEL approved by the foreign aviation authority. If the Director-General elects to produce an MMEL, this will be a standalone document to be used in isolation. However, the preferred option is to produce a CAD MMEL Supplement which addresses only the differences from the manufacturer's MMEL. A CAD MMEL Supplement must be used in conjunction with the specific revision of the MMEL upon which it is based – the two documents together constitute the 'Approved MMEL'.

- 2.3 All items in a CAD MMEL Supplement overwrite and supersede any entry in the MMEL upon which the Supplement is based. In any case, CAD MMELs and Supplements take priority over any other MMEL.
- 2.4 The European Aviation Safety Agency (EASA) has published the Certification Specifications and Guidance Material for Master Minimum Equipment List, CS-MMEL, initial issue 1 January 2014. It is the CAD policy to base on the latest CS-MMEL during the approval review process.

3 Amendment of the MMEL

- 3.1 Proposals to amend the MMEL may be initiated by the manufacturer through a change to the appropriate MMEL, as approved by the NAA. Changes in legislation and the CAD policy may also necessitate amendment of the MMEL. Supplemental Type Certificate Holders may request to include a Supplement to the MMEL by application to the NAA. Amendment proposals initiated by manufacturers or Supplemental Type Certificate Holders must be accompanied by a technical justification which should include any changes to the associated operational and/or maintenance procedures.
- 3.2 Applicants for approval of modifications to aircraft shall, at the time application is made, consider the effects of the proposed modification upon the information and instructions contained in the MMEL for the type, and shall inform the Director-General of any revisions/supplements likely to be required as a consequence of the incorporation of the modification.

4 Amendments which lead to a more restrictive MMEL

In those cases where amendments are approved which lead to the MMEL becoming more restrictive, and which will consequently require operators' MEL to be amended accordingly, notification of the changes required will be issued by the Director-General, using the medium most appropriate to the circumstances.

CHAPTER 3 - MEL

1 Production of the MEL

- 1.1 An MEL shall be no less restrictive than the MMEL on which it is based. The MEL should indicate the revision status of the MMEL upon which it is based.
- 1.2 The MEL shall contain rectification interval(s) in line with the definitions in this document. The MEL shall contain a relevant preamble, definitions and clarifying notes which shall adequately reflect the scope, extent and purpose of the MEL. The preamble should contain procedures for the guidance of flight crews using the MEL. An example of an MEL preamble is shown in Appendix 1.

Note: The preamble, notes and definitions in an MEL should not contradict the applicable sections in the MMEL. Appendix 1 is shown as an example only, and should not be used to overwrite definitions in the MMEL.

- 1.3 An operator who wishes to use the aircraft with unserviceable equipment in accordance with the provisions of Article 14A of the Order must use an MEL compiled on the basis of the approved MMEL.
- 1.4 In exceptional cases where no suitable MMEL exists for a particular aircraft type an operator may, with the agreement of the Director-General, produce and use an MEL. Such agreement would depend upon the operator providing the appropriate technical or operational justification for the proposed alleviations.
- 1.5 Operators shall take operational and maintenance procedures referenced in the MMEL into account when preparing an MEL. These procedures, which are subject to approval, shall be identified to the Director-General during the MEL approval process. The procedures themselves, or symbols to indicate them, are required in the operator's MEL. The MEL shall be appropriately amended, as and when applicable operational or maintenance procedures as referenced in the MMEL are revised.
- 1.6 Unless specifically permitted, an inoperative item may not be removed from the aircraft.

- 1.7 Operational procedures shall be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorised to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator.
- 1.8 Maintenance procedures shall be accomplished prior to operating with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorised to perform certain functions. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator.
- 1.9 Appropriate operational and maintenance procedures are required to be published as a part of the operator's manual(s) or MEL. Operators' manuals may include the Operations Manual, the Maintenance Manual or other documents acceptable to the Director-General.
- 1.10 All items related to the airworthiness of the aircraft and not included in the MEL are automatically required to be operative.
- 1.11 Non-safety related equipment, such as galley equipment and passenger convenience items, need not be included in the MEL. Operators shall ensure that failures of these equipment will not affect the airworthiness and safe operation of the aircraft.

2 Approval of MEL

Operators are required to complete a compliance document when submitting an initial MEL to the Director-General for approval. This compliance document shall be submitted together with the MEL, references to source material and justification for MEL items as applicable. An example of the MEL Compliance Document is shown in Appendix 4.

3 Permission to use MEL

Operators who wish to use MEL in accordance with Article 14A of the Order, must obtain a Permission from the Director-General. Applications should be made to the Flight Standards and Airworthiness Division (FSAD).

4 Amendments to the MEL

- 4.1 When an MMEL revision is issued, operators of the particular aircraft type concerned will be allowed within 90 days from the date of publication of the MMEL to amend their MEL.
- 4.2 When the MMEL is amended so as to become more restrictive, or when the Director-General requires immediate amendment of the MEL, operators will be allowed within 30 days from the date of notification to amend their MEL.
- 4.3 Voluntary amendment of the MEL may be carried out as required by the operator, provided the proposed change is no less restrictive than the MMEL.
- 4.4 Operators are required to complete a compliance document when submitting an MEL amendment to the Director-General for approval. This compliance document shall be submitted together with the MEL amendment, references to source material and justification for MEL items as applicable. An example of the MEL Compliance Document is shown in Appendix 4.

5 Non-Standard Operations

- 5.1 Aircraft are often flown for purposes other than those associated with their most common use. Such non-standard uses may well allow less stringent minimum equipment requirements. Examples of non-standard use may be:
- a) Demonstration Flights;
 - b) Test Flights;
 - c) Training Flights;
 - d) Positioning Flights - defined as flights carrying neither passengers nor freight for valuable consideration, operated purely to position aircraft for further revenue service;
 - e) Ferry Flights - defined as for positioning flights, except that such flights are flown only to return the aircraft to a place where it can be repaired.
- 5.2 Minimum equipment requirements may only be reduced by agreement with the Director-General and normally an operator would have to provide evidence that such flights change the category of Public Transport or Aerial Work in accordance with the provisions of the Order.
- 5.3 Any reference to a reduction in minimum equipment requirements in an MEL must be clearly labelled as such, together with the type of non-standard flight applicable.

Note: Such non-standard flights may only be undertaken if the aircraft's Flight Manual contains the appropriate procedures and are agreed to by the Director-General.

6 Operations with Multiple Unserviceabilities

In most cases, multiple unserviceabilities of unrelated aircraft systems cannot be addressed by the MMEL nor consequently by the MEL. The decision as to whether or not to dispatch with multiple unserviceabilities, which individually would be allowed by the MEL, will ultimately rest with the Aircraft Commander, taking into consideration advice from the operator's specialists where available.

7 Rectification Intervals

- 7.1 The operator shall take account of the Rectification Interval given in the MMEL when preparing an MEL. The Rectification Interval in the MEL shall not be less restrictive than the corresponding Rectification Interval in the MMEL.
- 7.2 The operator is responsible for establishing an effective rectification programme that includes tracking of the inoperative items and coordinating parts, personnel, facilities and procedures necessary to ensure timely rectification. The operator must ensure that rectification is accomplished at the earliest opportunity.
- 7.3 Operation of the aircraft is not allowed after expiry of the Rectification Interval specified in the MEL, unless:
- a) the defect has been rectified; or
 - b) the Rectification Interval is extended in accordance with paragraph 8 below.
- 7.4 Where the applicable MMEL or MMEL Supplement does not contain Rectification Intervals, all entries included within the MMEL shall be classified with a Rectification Interval category of “C” (relating to 10 calendar days) in the MEL, except where there is an existing repair limit stated within the proviso for a particular MMEL entry. The stated limit will remain in force but the entry shall be identified as a category “A” Rectification Interval (i.e. non-extendable) in the MEL.
- 7.5 Once the applicable MMEL has been revised to include Rectification Intervals, this will supersede the guidance given in paragraph 7.4, and operators will need to reflect the revised rectification intervals in their MEL.

8 Rectification Interval Extension (RIE)

8.1 Principles of RIE

8.1.1 Subject to the approval of the Director-General, the operator may use a procedure for the extension of the applicable Rectification Intervals B, C, and D, as specified in the MEL, provided:

- a) a description of specific duties and responsibilities for controlling extensions is established by the operator and accepted by the Director-General;
- b) the RIE is not used as a normal means of conducting MEL item rectification;
- c) the operator only grants a one-time extension of the applicable Rectification Interval, as a maximum, of the same duration as specified in the MEL;
- d) the Director-General is notified of the application of any extension within 10 days; and
- e) Rectification is accomplished at the earliest opportunity within the period of the extension.

8.1.2 The operator shall ensure that rectifications are accomplished at the earliest opportunity. RIE is introduced to allow operators to continue to operate an aircraft after the Rectification Interval has expired if rectification has not been possible due to circumstances beyond the operator's control (e.g. unavailability of spare). An operator who utilises RIE is required to report all such uses, together with the appropriate justification, to the Director-General. The operator remains responsible for the control of RIE.

8.2 Application for the use of RIE

The operator shall make an application to the Director-General for approval to use RIE. The operator shall provide details of the name and position of the “Authorising Person” responsible for the control of the company RIE procedure and details of the specific duties and responsibilities established by the operator to control the use of RIE. Authorising Persons who must be senior with experience in technical and

operations management are to be listed by appointment and name. The Director-General will consider the engineering competence of the operator and the acceptability of the Authorising Persons. Where an operator uses contracted-out maintenance facilities, the Director-General will judge whether the relationship between an operator and an independent maintenance contractor is adequate for the purposes of RIE.

8.3 RIE Procedure

8.3.1 An RIE procedure must be defined by the operator and agreed with the Director-General, and shall consist of:

- a) Consultation - between the operational and technical staff of the operator as to the requirement for the RIE and the recommendation of the proposal.
- b) Decision - made by the Authorising Person to accept or reject the proposal based on consultation.
- c) Authorisation - formal authorisation to inform the aircraft commander of the use of the RIE.
- d) RIE Report - made to the Director-General within 10 days of the extension being authorised.

8.3.2 A chain or system of consultation must be listed. Authorising Persons who must be senior with experience in technical and operations management are to be listed by appointment and name.

8.4 Authorisation and Reporting Form

8.4.1 A specific Authorisation and Reporting Form should be developed and used by an operator approved for RIE. It is to be completed (all boxes filled in) when the RIE is authorised and must contain the Authorising Person's name

and signature.

- 8.4.2 The Form should be sent to the Director-General within 10 days of a RIE being authorised. The Form will be used to check that the RIE was properly authorised and that the extension was granted for appropriate reasons.
- 8.4.3 The Form should be completed and sent to the Director-General once the defect has been rectified and confirmed by the Authorising Persons as specified in the operator's RIE procedure. The Form will be used to check that the rectification is accomplished at the earliest opportunity within the period of the extension.
- 8.4.4 The Form should be in the format as specified in Appendix 3. Minor modifications are acceptable except that all necessary information as specified must not be omitted.

8.5 Use of RIEs

- 8.5.1 Operators are reminded that they must ensure that rectification is accomplished at the earliest opportunity. This is applicable for both the standard Rectification Interval and for the RIE.
- 8.5.2 The RIE permits an operator to continue to dispatch an aircraft with particular equipment unserviceable after the standard rectification interval has expired if, in the opinion of the Authorising Person, it is not reasonably practicable for the repair to be made within that rectification interval due to circumstances beyond the operator's control. It is not intended that RIE should be used purely to double the standard rectification interval.
- 8.5.3 It is most important that the agreed procedures for the use of RIE are followed. In the event that operators do not comply with the laid down conditions, the Director-General will take action by means of warning letters and ultimately (normally a second incident) by removal of the approval to utilise RIE on a temporary or permanent basis.

9 Operations Outside the Scope of the MEL

- 9.1 The Director-General may allow an operator to make an exception of compliance with the appropriate MEL on a case by case basis.
- 9.2 The operator has to make application and demonstrate to the Director-General that it has extensive experience on the particular aircraft type and the necessary operational management and engineering support facilities to operate an aircraft with unserviceabilities of systems or equipment outside the scope of the MEL.
- 9.3 If the unserviceability is also outside the scope of MMEL the application has to be supported by documentary proof that the aircraft Type Certificate Holder has been consulted and has agreed that the aircraft to be operated outside the scope of the MMEL/MEL. Any compensatory factors or limitations have to be applied in accordance with the aircraft Type Certificate Holder's instruction.
- 9.4 An aircraft Type Certificate Holder may issue a document ('the Document') to approve MMEL change, usually with time limitations, applicable to a specific aircraft or a series of aircraft. If the Document is approved by the primary certification authority and is covered under the relevant arrangements with HKCAD (refer to HKAR-21 GM 21.90(4)), the operator needs not to make the aforesaid application to the Director-General provided that the Director-General:
- 9.4.1 has accepted or approved as applicable the policy and detailed procedures for the use of the Document to allow operations outside the scope of the MEL as described in the operator's operation/engineering manual;
 - 9.4.2 is notified of the use of the Document within 10 days; and
 - 9.4.3 has approved the arrangements and procedures for such operations detailed in the preamble section of the operator's MEL.
- Note: "Approved Deviation to OSD-MMEL" (ADOM) is an EASA approved temporary deviation to MMEL issued by Airbus (the type certificate holder). ADOM is one example of the Document.

APPENDIX 1 Example MEL Preamble**CIVIL AVIATION DEPARTMENT
MINIMUM EQUIPMENT LIST**

(OPERATOR'S NAME: ABC)

(MEL reference No.: MEL/ABC/A320 at Issue X Revision X)

(AIRCRAFT TYPE)

PREAMBLE

(Note: This Specimen Preamble is intended only as an example of what is required and operators may, with the agreement of Director-General, vary the format and content of their MEL Preambles to suit their own needs and requirements.)

1 INTRODUCTION

This Minimum Equipment List (MEL) is based on the *(Name of Authority of the State of Design)* Master Minimum Equipment List (MMEL) *(Revision, dated)*.

This MEL takes into consideration *(the operator's)* particular aircraft equipment, configuration and operational conditions, routes being flown and requirements set by the Director-General of Civil Aviation (hereinafter referred as 'the Director-General').

This MEL will not deviate from Air Navigation (Hong Kong) Order 1995, Hong Kong Airworthiness Notices, any applicable Airworthiness Directive or any other mandatory requirement and will be no less restrictive than the MMEL.

The MEL is intended to permit operations with inoperative items of equipment for a

period of time until rectification can be accomplished.

Rectification is to be accomplished at the earliest opportunity.

MEL Conditions and Limitations do not relieve the commander from determining that the aircraft is in a fit condition for safe operation with specified unserviceabilities allowed by the MEL.

The provisions of the MEL are applicable until the aircraft commences the flight.

Any decision to continue a flight following a failure or unserviceability which becomes apparent after the commencement of a flight must be the subject of pilot judgement and good airmanship. The commander may continue to make reference to and use of the MEL as appropriate.

By approval of the MEL the Director-General permits dispatch of the aircraft for flight with certain items or components inoperative provided an acceptable level of safety is maintained by use of appropriate operational or maintenance procedures, by transfer of the function to another operating component, or by reference to other instruments or components providing the required information.

Note: For dispatch with airframe or engine parts missing, refer to the CONFIGURATION DEVIATION LIST (CDL).

2 CONTENTS OF MEL

The MEL contains only those items required by operating regulations or those items of airworthiness significance which may be inoperative prior to dispatch, provided that appropriate limitations and procedures are observed. Equipment obviously basic to aircraft airworthiness such as wings, rudders, flaps, engines, landing gear, etc. are not listed and must be operative for all flights. It is important to note that:

ALL ITEMS WHICH ARE RELATED TO THE AIRWORTHINESS OF THE AIRCRAFT AND NOT INCLUDED ON THE LIST ARE REQUIRED TO BE OPERATIVE.

3 CRITERIA FOR DISPATCH

The decision of the commander of the flight to have allowable inoperative items corrected prior to flight will take precedence over the provisions contained in the MEL. The commander may request requirements above the minimum listed, whenever in his judgement such added equipment is essential to the safety of a particular flight under the special conditions prevailing at the time.

The MEL cannot take into account all multiple unserviceabilities. Therefore, before dispatching an aircraft with multiple MEL items inoperative, it must be assured that any interface or inter-relationship between inoperative items will not result in degradation in the level of safety and/or an undue increase in crew workload. It is particularly in this area of multiple discrepancies and especially discrepancies in related systems, that good judgment, based on the circumstances of the case, including climatic and en-route conditions must be used.

4 MAINTENANCE ACTION

Every effort shall be made by maintenance to correct all technical defects as early as practicable and that the aircraft be released from a maintenance station in fully operational condition. The commander must be informed by maintenance as soon as practicable, should it be impossible to rectify the inoperative item prior to departure.

Whenever an aircraft is released by maintenance for dispatch with items inoperative, the following is required:

- a) The technical log book aboard the aircraft must contain a detailed description of the inoperative item(s), special advice to the flight crew, if necessary, and information about corrective action taken.
- b) When they are accessible to the crew in flight, the control(s), and/or indicator(s) related to inoperative unit(s) or component(s) **must be clearly placarded**.

Note: To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified,

placard wording and location should be determined by the operator.

- c) If inadvertent operation could produce a hazard such equipment must be rendered inoperative (physically) as given in the appropriate maintenance procedure.
- d) The relevant operational and maintenance procedures are contained in (identify the particular Manual, Section, Chapter or Part etc. authorised by the appropriate Authority).

5 RECTIFICATION INTERVALS

Inoperative items or components, deferred in accordance with the MEL, must be rectified at or prior to the rectification intervals established by the following letter designators given in the "Rectification Interval Category" column of the MEL.

Category A

No standard interval is specified, however, items in this category shall be rectified in accordance with the conditions stated in the Remarks or Exception column (5) of the MEL.

Where a time period is specified in calendar days it shall start at 00:01 on the calendar day following the day of discovery. Whenever the time interval is listed as flight days, the time interval begins on the flight day following the day of discovery.

Note: Where a time period is specified other than in calendar days or flight days, it shall start at the point when the defect is deferred in accordance with the operator's approved MEL.

Category B

Items in this category shall be rectified within three (3) consecutive calendar days, excluding the day of discovery.

Category C

Items in this category shall be rectified within ten (10) consecutive calendar days,

excluding the day of discovery.

Category D

Items in this category shall be rectified within one hundred and twenty (120) consecutive calendar days, excluding the day of discovery.

6 RECTIFICATION INTERVAL EXTENSIONS

Subject to the approval of the Director-General, the operator may use a procedure for the extension of the applicable Rectification Intervals B, C and D, for the same duration as specified in the MEL in accordance with CAD 549 MMEL/MEL.

7 FERRY FLIGHTS

Ferry flights are flights carrying neither passengers nor freight for valuable consideration, for the purpose of returning the aircraft to a place where it can be repaired. These flights may be dispatched with less than the equipment specified in this MEL, provided all the equipment expected to be utilised in flight is operable and any relevant Sections of the Flight Manual are applied. Permission for such a flight, however, must be granted by the Director-General before the flight takes place.

8 DEFINITIONS

For the purpose of this MEL the following definitions shall apply, if applicable:

(Note: *This is not an exhaustive list and operators should include in their MEL any definition which is considered to be relevant.*)

- (a) "Combustible Material" is material which is capable of catching fire and burning.
- (b) "Commencement of flight" means the point when an aircraft begins to move under its own power for the purpose of preparing for take off.
- (c) Dash "(—)" in columns 3 and 4 indicates a variable quantity.

- (d) "Day" operation is any flight conducted from the point of take-off to landing between 30 minutes before sunrise and 30 minutes after sunset.
- (e) "Icing Condition" means the atmospheric environment is such that ice can form on the aircraft or in the engine(s).
- (f) "Inoperative" means that the equipment malfunctions to the extent that it does not accomplish its intended purpose or is not consistently functioning within its design operating limits or tolerances.

Note: Some equipment has been designed to be fault tolerant and are monitored by computers which transmit fault messages to a centralised computer for the purpose of maintenance. The presence of this category of message does not mean that the equipment is inoperative.

- (g) "It is not reasonably practical to repair or replace before the commencement of flight" OR "It is not reasonably practicable for repairs or replacements to be made" are intended to cover situations where there is a lack of a replacement part(s), inadequate engineering resources or manpower to enable the defect to be rectified.

Note: The intention of either of these statements in an MMEL is that the aircraft may be dispatched if there are inadequate available spares or if there are no qualified and authorised personnel to perform the task. The definition is not dependent on whether there is enough time available to complete the task before the next flight. If the aircraft is at a maintenance base or any other airport, but the spare(s) or manpower are not available, then the aircraft may be dispatched. As soon as the aircraft lands at an airport where the spares are available and there are qualified and authorised personnel, the defect must be rectified.

- (h) "The aircraft may depart on the flight or series of flights for the purpose of returning directly to a base where repairs or replacements can be made" OR "The

aircraft may continue the flight or series of flights but shall not depart an airport where repairs or replacements can be made" are intended to allow the aircraft to be flown, using the most direct route, to the nearest maintenance base where arrangements for repairs or replacements can be made.

Note: Once the aircraft lands at the maintenance base, the aircraft shall not be dispatched until the defect has been rectified.

- (i) "Visual Meteorological Conditions" (VMC) means the atmospheric environment is such that would allow a flight to proceed under the Visual Flight Rules applicable to the flight. This does not preclude operating under Instrument light Rules.

9 CENTRALISED MESSAGE SYSTEMS (If appropriate)

This aircraft is equipped with a system (such as ECAM/EICAS) which provides different levels of systems information messages (warning, caution, advisory, status, maintenance etc.). Any aircraft discrepancy message that affects dispatch will normally be at status message level or higher. Therefore, systems conditions that result only in a maintenance message are not normally addressed in the MEL as they, in themselves, do not prohibit dispatch of the aircraft. However, maintenance discrepancy messages must be recorded and corrected in accordance with the approved maintenance programme.

10 OPERATION OUTSIDE THE SCOPE OF THE MEL

(Those operators who intent to use operation outside the conditions of the MEL should set out the arrangements and procedures for such operations approved by the Director-General in the MEL Preamble).

APPENDIX 2 HKCAD MEL POLICY DOCUMENT

1 INTRODUCTION

- 1.1 Article 14A of the Order prescribes that an aircraft registered in Hong Kong shall not commence a flight if any of the equipment required by or under the said Order to be carried in the circumstances of the intended flight is not carried or is not in a fit condition for use unless the aircraft does so under and in accordance with the terms of a permission granted under this Article.
- 1.2 The permission granted by the Director-General to operators states that the only items of required equipment which are not carried or are not in a fit condition for use shall be listed in the respective aircraft type Minimum Equipment List (MEL) duly approved by the Director-General and it is provided in the said MEL that such items need not be carried or be in a fit condition for use in the circumstances of the intended flight.
- 1.3 The purpose of this Policy Document is to give operators the guidance necessary to develop the MEL provisions for instrument and equipment and conditions for their unserviceability, in order that MMEL/MEL and other relevant operational requirements are properly complied with. Application of this Policy Document should ensure a harmonisation of MEL among all local operators and assist the Director-General in the MEL evaluation and approval.

2 MMEL ITEMS AS REQUIRED BY REGULATION/THE AUTHORITY

- 2.1 Certain items at the MMEL, especially for those navigation systems, the Remarks or Exceptions column may show "As required by (Regulations / Operating Requirements / Air Navigation Legislation / FARs / etc)". Operators when compiling their MEL should specify clearly any limitations as required by the relevant Hong Kong Aviation Requirements on those items such that dispatch of the aircraft could be allowed.

- 2.2 EASA has published the Certification Specifications and Guidance Material for Master Minimum Equipment List, CS-MMEL. The Director-General has reviewed the document and adopts the guidance materials provided at CS-MMEL BOOK 2 Appendix 1 to GM1 MMEL.145: MMEL ITEMS GUIDANCE BOOK. Operators when compiling their MEL should consider and use rectification intervals together with any applicable limitations/conditions specified at the Remarks or Exceptions areas for those items listed in the said Appendix 1 to GM1 MMEL.145.
- 2.3 If there are differences in rectification intervals and/or applicable limitations/conditions for dispatch between those as listed in the Appendix 1 to GM1 MMEL.145 and those specified in the respective OEM MMEL or STC MMEL Supplements, the more restrictive conditions shall be used.
- 2.4 The non-exhaustive list of MEL items in paragraph 3 of this Appendix either provides additional information to Appendix 1 to GM1 MMEL.145 or specifies differences in dispatch conditions including rectification intervals as required by relevant Hong Kong Aviation Requirements.
- 2.5 The listed rectification intervals should be used when compiling the MEL. Rectification intervals as stipulated by the relevant Hong Kong Aviation Requirements, including Hong Kong Airworthiness Notices (AN), the Order and etc., shall be classified as Category A with applicable time limitations specified at the Remarks or Exceptions areas. No deviation from those intervals is allowed without prior approval from the Director-General.
- 2.6 Limitations/specified conditions for dispatch as required by the relevant Hong Kong Aviation Requirements are listed at Remarks or Exceptions areas together with their sources properly cross-referred.

3 LIST OF MEL POLICY ITEMS

ATA	Item	R.I.	Remarks or Exceptions	Reference
25-64	Universal Precaution Kit	A	One required kit may be incomplete or missing for two calendar days.	AN 101E
33-42	Anti-collision Lights (Beacon or Strobe types)		Note 1: The light(s) is(are) repaired at the earliest practicable opportunity. Note 2: In Hong Kong, when stationary on the apron with engine(s) running a red anti-collision light must be displayed.	AN(HK)O Schedule 14 Rules 9, 10 and 11
34-50	Radio Navigation Equipment (1) Duplicated VHF Navigation System (VOR/ILS) (2) 75 MHz Marker Beacon Receiver (3) DME (4) Radio Compass System (ADF)	A	Not more than one for each of the listed items may be inoperative provided: a) It is not reasonably practicable to repair or replace the item, before the commencement of the flight, and b) The aircraft has not made more than ONE flight since the item was last serviceable, and c) The commander of the aircraft has satisfied himself that, taking into account the latest information available as to the route and aerodrome to be used (including any planned diversion) and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of the appropriate air traffic unit.	AN(HK)O Schedule 6 Scale H, or CAD Exemption, or alternate radio / navigation equipment approved by the CAD

APPENDIX 3 RIE Authorisation and Reporting Form

<u>Rectification Interval Extension (RIE) Authorisation and Reporting Form</u>			
Name of Operator:		Aircraft Registration:	RIE No:
Aircraft Type:		Engine Type:	MEL Ref:
Defect No. :	Date of Defect:	RI Category:	RI Expiry Date:
Details of Defect/MEL item:			
Reason for not rectifying:			
Justification for Extension : (To include history of previous RIE use for this item where appropriate)			
Extension Expiry Date:	Name & Title of RIE Applicant:		Date:
Approved By Authorising Person: (Name & Title)		Signature:	Date:
Note: Notify HKCAD within 10 days the extension is granted			
Terminating Action (Details):			
Defect cleared date:	Tech Log reference:		
Confirmed By: (Name & Title)	Signature:		Date:
Distribution: HKCAD etc.			

APPENDIX 4 MINIMUM EQUIPMENT LIST (MEL) COMPLIANCE DOCUMENT

Minimum Equipment List (MEL) Approval

MEL Ref : _____ Amendment/Issue No. : _____ Aircraft Type : _____

Source MMEL Document: _____ Amendment No. : _____ Date: _____

Item	Action to be taken	Justification
1 Introduction Page A	Replace with new page Dated 30/01/2001	Typographical corrections and amendment status update
2 Page 01-24-20 24-32-1	Replace with new page Dated 30/01/2001	Additional entry. CAA MMEL Supplement TR-6-13 July 2001
3 Page 01-36-19 36-11-9	Replace with new page Dated 30/01/2001	RI reduced to cat B due to FWSOV Pneumatic reliability levels
4		

COMPLIANCE STATEMENT: This MEL complies with HKAR 1.6-5 and CAD 549 and is no less restrictive than the applicable Approved MMEL/Supplement.

Print name: _____ Signed: _____ Position: _____

Operator: _____ Date: _____

Once accepted by the CAD, this amendment should be published within 30 days, dated and numbered as shown above.

For CAD use only

Airworthiness Officer Technical review completed

Name: _____

Signed: _____

Date: _____

Operations Inspector/Officer Review Completed

Name: _____

Signed: _____

Date: _____