AC-MMEL/MEL

Contents

SUBPART A

SUBPART B

SUBPART C

SUBPART A

AC-MMEL/MEL.001 (a) Limit of MEL Applicability

(See JCAR-MMEL/MEL.001 (a))

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 judgment and good airmanship. The commander may refer to the MEL before any decision to continue the flight is taken.

The operator's MEL should include procedures to deal with any failures which occur between the start of taxi and take-off brake release.

AC-MMEL/MEL.003 Compliance

(See JCAR-MMEL/MEL.003)

For aircraft types in operation before the date of applicability of this JCAR, an operator may, on a voluntary basis, comply with JCAR-MMEL/MEL Subpart C, in co-ordination with CARC.

SUBPART B

AC-MMEL/MEL.010(c) General

(See JCAR-MMEL/MEL.010(c))

Non-safety related equipment refers to equipment that is not required for airworthiness or operational reasons. In order for inoperative installed equipment to be considered non-safety, the following criteria should be considered:

(a) The operation of the aircraft is not adversely affected such that standard operating procedures related to ground personnel, in-flight personnel and/or flight personnel are impeded.

(b) The condition of the aircraft is not adversely affected such that the safety of passengers and/or personnel is jeopardized.

(c) The condition of the aircraft is configured to minimize the probability of a subsequent failure that may cause injury to passengers/personnel and/or cause damage to the aircraft.

(d) The condition does not include the use of required emergency equipment and does not impact emergency procedures such that personnel could not perform them.

AC-MMEL/MEL.025 Format of MMEL

(See JCAR-MMEL/MEL.025)

1 The ATA 100/2200 Specification numbering system is preferred.

2 A proposed five column format for the technical pages of all MMELs is shown in Appendix 1 to AC-MMEL/MEL .025.

3 Appendix 2 to AC-MMEL/MEL .025 can be used as a model for the Preamble.

AC-MMEL/MEL.030 Multiple Un-serviceability's

(See JCAR-MMEL/MEL.030)

1 MMEL Preambles should make it clear that not all combinations of un-serviceability are considered.

2 The MMEL cannot include all combinations of un-serviceability. Therefore it has to be accepted that because of the variety of multiple un-serviceability's which could arise; it is likely that many will not be covered in the MMEL.

AC-MMEL/MEL.040/080 Rectification Intervals

(See JCAR-MMEL/MEL.040)
(See JCAR-MMEL/MEL.080)

1 The MMEL/MEL is intended to permit operations with inoperative items of equipment for that period of time necessary to organize rectifications.

2 The MMEL/MEL is not intended as a tool for prolonged or permanent operation of aircraft in a configuration deviating from their certification status. It is important therefore that rectifications be accomplished at the earliest opportunity in order that the affected aircraft can be returned to its certification status. In order to maintain this level, the MMEL establishes limitations on the duration of operation with inoperative equipment. These are called Rectification Intervals and are designated A, B, C or D.

3 The Rectification Interval Category for each item in the MMEL is stated in column 2 (See Appendix 1 to AC-MMEL/MEL.025). The category of each inoperative item will be determined according to the specifications in JCAR-MMEL/MEL.040.

4 An aircraft may have installed equipment which the operator considers to be unnecessary for his operation and he may want to delay rectification of such items for an indefinite period. In such cases modification of the aircraft is appropriate and deactivation, inhibition or removal of the system should be accomplished by an appropriate approved modification procedure.

Appendix 1 to AC MMEL/MEL.025

Civil Aviation Regulatory Commission Master Minimum Equipment List

AIRCRAFT:	REVISION NO: DATE:	PAGE:

(1) Systems & Sequence Numbers Item	(2) Cat.	(3) Number Installed	(4) Number Required for Dispatch	(5) Remarks or Exceptions

Appendix 2 to AC-MMEL/MEL.025

(**Specimen)**
Civil Aviation Regulatory Commission
Master Minimum Equipment List
(Aircraft Type)
Preamble

The following is applicable for authorized certificate holders operating under CARC Operating Requirements (JCAR-OPS 1). The JCAR require that all equipment installed on an aircraft in compliance with the Airworthiness Standards and the Operating Requirements must be operative. However, the Requirements also permit the use of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary in the interests of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system or installed component may not be necessary when the remaining operative equipment can provide an acceptable level of safety.

CARC Master Minimum Equipment List (MMEL) is developed by the Type Certificate Holder to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. CARC MMEL includes those items of equipment related to airworthiness and operating requirements and other items of equipment which CARC finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations; it does not contain obviously required items such as wings, flaps, and rudders.

The MMEL is the basis for development of individual operator's MELs which take into consideration the operator's particular aircraft equipment configuration and operational conditions. An operator's MEL may differ in format from the MMEL, but cannot be less restrictive than the MMEL. The individual operator's MEL, when approved permits operation of the aircraft with inoperative equipment.

Equipment not required by the operation being conducted and equipment in excess of JCAR requirements are included in the MEL with appropriate conditions and limitations. The MEL must not deviate from Airworthiness Directives or any other Mandatory Requirement. It is important to remember that all equipment related to the airworthiness and the operating requirements of the aircraft not listed on the MMEL must be operative.

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as necessary are specified in the MEL to ensure that an acceptable level of safety is maintained.

The MEL is intended to permit operation with inoperative items of equipment for a period of time until rectification's can be accomplished. It is important that rectifications be accomplished at the earliest opportunity. In order to maintain an acceptable level of safety and reliability the MMEL establishes limitations on the duration of and conditions for operation with inoperative equipment. The MEL provides for release of the aircraft for flight with inoperative equipment.

When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Aircraft Maintenance Record/Logbook as prescribed by JCAR. The item is then either rectified or may be deferred per the MEL or other approval means acceptable to CARC prior to further operation. MEL conditions and limitations do not relieve the operator from determining that the aircraft is in a condition for safe operation with items of equipment inoperative.

When these requirements are met, an Airworthiness Release, Aircraft Maintenance Record/Logbook entry, or other approved documentation is issued as prescribed by JCARs. Such documentation is required prior to operation with any item of equipment inoperative.

Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. The exposure to additional failures during continued operation with inoperative systems or components must also be considered. Wherever possible account has been taken in this MMEL of multiple inoperative items. However, it is unlikely that all possible combinations of this nature have been accounted for. Therefore, when operating with multiple inoperative items, the inter-relationships between those items and the effect on aircraft operation and crew workload must be considered.

Operators are to establish a controlled and sound rectification program including the parts, personnel, facilities, procedures and schedules to ensure timely rectification. This program should identify the actions required for Maintenance discrepancy messages.

When Using the MEL, Compliance with the Stated Intent of the Preamble, Definitions and the Conditions and Limitations Specified In the MEL Is Required.

Definitions and Explanatory Notes

In addition to a Preamble arranged and worded along the lines of this Specimen, the MMEL should contain, as part of the Preamble, sufficient Definitions and Explanatory Notes to provide the user (this is primarily the Operator when compiling the MEL) with a full and proper understanding of the intent and purpose of the items it contains.

While many of the Definitions used will be common to all MMELs, others will be specific to particular or individual aircraft types. Type Certificate holders should, when preparing the MMEL; ensure that all relevant Definitions are included. Likewise Explanatory Notes should be provided in sufficient detail wherever the intent and purpose of a term or phrase or abbreviation etc. is necessary or advisable.

The Type Certificate holders shall provide the following Definitions for Rectification Interval Categories in the MMELs they prepare:

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 Exceptions column (5) of the MMEL. Where a time period is specified in calendar days it shall start at 00:01 on the calendar day following the day of discovery.

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.

SUBPART- C

AC-MMEL/MEL.055 Types of Operation
(See JCAR-MMEL/MEL.055)

The MEL should include the dispatch conditions associated with flights conducted in accordance with the Special Authorizations list shown in the Air Operator's Certificate e.g. RVSM, RNAV, ETOPS etc.

AC-MMEL/MEL.060 (b) Preparation of MEL
(See JCAR-MMEL/MEL.060 (b))

If an MMEL for a particular aircraft type has not been approved by CARC, then the operator may use an MMEL produced by the Type Certificate Holder and approved by the Authority of the State of Design. If this does not exist, an alternative MMEL produced or approved by another ICAO contracting state Authority. The use of an alternative MMEL is subject to agreement with CARC.

AC-MMEL/MEL.065 Format of MEL
(See JCAR-MMEL/MEL.065)

1 The ATA 100/2200 Specification numbering system is preferred.

2 A proposal for a five column format for all MELs is shown in Appendix 1 to AC-MMEL/MEL.025.

3 Appendix 1**,** to AC-MMEL/MEL .065 can be used as a model for the Preamble.

AC-MMEL/MEL.075 Operational and Maintenance Procedures
(See JCAR-MMEL/MEL.075)

(a) Operational and maintenance procedures are part of the MEL. They are an integral part of the compensating conditions needed to maintain an acceptable level of safety, enabling CARC to approve the MEL. CARC may request presentation of specific (O) and/or (M) procedures in the course of the MEL approval process.

(b) Operator's manuals may include the Operations Manual, the Maintenance Manual or other documents acceptable to CARC.

AC-MMEL/MEL.081 Rectification Interval Extension (RIE)

(See JCAR-MMEL/MEL.081)

1 The operator should ensure that rectifications are accomplished at the earliest opportunity. RIEs are introduced to allow operators to continue to operate an aircraft after the Rectification Interval has expired if rectification has not been possible. An operator who utilizes RIEs would be required to report retrospectively all such uses, together with reasons, to CARC. CARC is ultimately responsible for the oversight of RIEs.

2 CARC may reject any application for the use of RIEs made by an operator who they considered not to have the necessary operational and engineering competence. The operator should provide CARC with details of the name and position of the nominated 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 RIEs. Authorizing personnel, who must be adequately trained in technical and/or operational disciplines, should be listed by appointment and name. CARC should consider the engineering competence of the operator and the acceptability of the authorizing personnel. Where an operator uses contracted-out maintenance facilities, CARC should judge whether the relationship between an operator and an independent maintenance contractor is adequate for the purposes of RIEs.

3 The responsibility for monitoring an operator’s adherence to the rules governing the use of RIEs lies with CARC who should provide a suitable RIE Report Form requesting details of the original defect, the reason for the RIE and reasons why rectification was not carried out within the original Rectification Interval. Operators should forward the form to CARC within a timescale acceptable to CARC.

4 CARC should detail procedures to be followed when dealing with the application and use of RIEs; it is important that proper procedures are followed. In the event that operators do not comply with the specified procedures, CARC should take action by means of warning letters and ultimately by removal of the authorization to utilize RIEs on either a temporary or permanent basis.

AC-MMEL/MEL.090 Operations outside the Scope of the MEL

(See JCAR-MMEL/MEL.090)

(a) Introduction.

This AC provides for the conditions and circumstances under which CARC may approve an operator to apply a Special Procedure for operating an aircraft outside the conditions of a Minimum Equipment List (MEL). The AC states the Special Procedure to be followed by an operator approved in that respect.

(b) Applications for Approval.

(1) Operators may apply to CARC for approval to apply a Special Procedure to operate an aircraft when the normal conditions of an MEL are not met.

(2) CARC Approval may be granted when CARC is satisfied; having taken account of the operator's general and particular experience and relevant arrangements, that proper judgment regarding the safety of such flights will be made.

(3) It is unlikely that an Approval will be given when an aircraft type has been in service with an operator for less than one year. A comprehensive type qualified engineering support organization will be an essential requirement.

(4) Operations outside the conditions of an MEL will be monitored by CARC to satisfy itself as to the correctness of the operator's judgment. If CARC is not satisfied, the approval apply a Special Procedure to operate in such circumstances will be suspended or revoked.

(c) The Special Procedure.

(1) The Special Procedure can be conveniently broken down into four phases:
   (i) Request
   (ii) Consultation.
   (iii) Decision.
   (iv) Authorization.

(2) The procedure to be followed in each of these phases shall be prescribed in the operator's Operations Manual.

(3) All personnel authorized by the operator to act on its behalf in relation to the Special Procedure shall be listed in the Operations Manual and the scope of CARC shall be specified.

(4) The full procedure to be followed shall be stated by the operator, including back-up procedures to be used in the event of the non-availability of telex, facsimile or e-mail, such as the use of radio or telephone communication.

(5) The operator shall produce a Special Procedure Form. The required distribution of the form shall be stated. A copy of the form should accompany the application by the operator to CARC for Approval to operate Special Procedures.

(6) Personnel authorized by the operator in relation to Special Procedures shall ensure that good engineering and operational judgment is exercised when considering operations which are outside the conditions of the MEL.

(7) The Special Procedure constitutes a temporary extension to the operator's MEL for the purpose of the flight or flights in question. It is a non-standard means for compliance with the MEL.

(8) The Special Procedure only permits a flight (or flights) for the purpose of positioning an aircraft to a place where it is reasonably practicable for rectification's to be made. Such a flight (or flights) shall be conducted in a manner that minimizes any significant additional risk.

(9) The Commander is responsible for ensuring that the aircraft is acceptable for the intended flight (or flights). Request for a Special Procedure flight (or flights) is the Commander's exclusive decision.

(d) Conditions for flights under the Special Procedure.

(1) If it is not possible to position the aircraft by means of a single flight to a place where rectifications or replacements can be carried out, a number of flights is permitted, which shall be no more than the minimum required.

(2) The Special Procedure form which shall be a numerically identified document will normally be passed by telex, facsimile or e-mail to the concerned parties including the Commander. The form shall be issued / completed by the individuals named in the Operations Manual as authorized to do so by the operator.

(3) The form shall identify the MEL and item(s) concerned, the requesting Commander, the Engineering and Operational Specialists consulted in the decision making process.

(4) The form shall show the technical and/or operational conditions, if any, to be observed during the flight(s).

(5) The form will provide support for any endorsements to the technical log ensuring the aircraft is dispatched in accordance with the operator's procedures.

CARC shall be notified, using the Special Procedure form, of the flight (or flights) and of all circumstances and conditions under which the flight (or flights) was (were) operated within ten days.

Appendix 1 to AC-MMEL/MEL.065

(**Specimen)**
Civil Aviation Regulatory Commission
(Operators Name)
Minimum Equipment List
(Aircraft Type)
Preamble

NOTE:

This Specimen Preamble is intended only as an example of what is required and operators may, with the agreement of CARC, 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 *(Certificating Authority)* 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 CARC.

This MEL will not deviate from 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's can be accomplished.

Rectifications are 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 un-serviceability’s 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 un-serviceability which becomes apparent after the commencement of a flight must be the subject of pilot judgment and good airmanship. The Commander may continue to make reference to and use of the MEL as appropriate.

By approval of the MEL, CARC permits dispatch of the aircraft for revenue, ferry or training flights 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 automatically 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 judgment 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 un-serviceability. 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:

The technical log book aboard the aircraft must contain a detailed description of the inoperative items(s), special advice to the flight crew, if necessary, and information about corrective action taken.

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.

If inadvertent operation could produce a hazard such equipment must be rendered inoperative (physically) as given in the appropriate Maintenance Procedure.

The relevant Operational and Maintenance Procedures are contained in (identify the particular Manual, Section, Chapter or Part etc. authorized by CARC).

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 Exceptions 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.

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 CARC, 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 JCAR-MMEL/ MEL.081.

7. Definitions.

For the purpose of this MEL the following definitions shall apply:-

(a) **"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 Flight Rules.

(b) **"Day"** operation is any flight conducted from the point of take-off to landing between 30 minutes before sunrise and 30 minutes after sunset.

(c) **"Dash** "(-)" in columns 3 and 4 indicates a variable quantity.

(d) **"Icing Condition"** the atmospheric environment is such that ice can form on the aircraft or in the engine(s).

(e) **"Commencement of flight"** The point when an aircraft begins to move under its own power for the purpose of preparing for takeoff.

(f) **"Inoperative"** means that 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.

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

(g) "Combustible Material" is material which is capable of catching fire and burning.

NOTE: This is not an exhaustive list and operators should include in their MELs any definition which is considered to be relevant.

8. Centralized 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 program.

9. Operation outside the Scope of the MEL.

Those operators which are authorized CARC in accordance with JCAR-MMEL/MEL.090 to operate outside the conditions of the MEL should set out in the MEL Preamble the arrangements and procedures for such operations as agreed with CARC.