



Number: OPS SN- 2012/09

Issue: 4

03 December 2018

Operator's Minimum Equipment List (MEL)

This Safety Notice contains recommendations regarding operational safety.

Recipients are asked to ensure that this Safety Notice is copied to all members of their staff who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

Applicability: All Part CAT and Part NCC Operators

1. Introduction

- 1.1 Part ORO.MLR.105 requires that operators establish for each aircraft, an MEL approved by the Authority. This shall be based upon, but no less restrictive than, the relevant Master Minimum Equipment List (MMEL).
- 1.2 The MEL is a document that lists the equipment which may be temporarily inoperative, subject to certain conditions, at the commencement of flight. This document is prepared by the operator for his own particular aircraft taking account of the aircraft configuration, equipment and systems, type of operations (eg. MNPS, RNP, RVSM, RNAV, ETOPS) and the relevant operational and maintenance conditions in accordance with a procedure approved by the Authority.
- 1.3 The purpose of this Safety Notice is to present clarification and further guidance that would assist the Operator in the MEL development process.

2. MEL Development Guidance and Policies

2.1 The MMEL

- 2.1.1 An aircraft MMEL is prepared and promulgated by the State of Design for a particular aircraft type or series. There are cases where other Authorities have subsequently re-certified the same aircraft in which case other situations may exist such as:
 - a) That State would derive another MMEL for their use.
 - b) That State would make a statement that they have accepted the original State of Design MMEL for their use.
 - c) That State would issue a Supplement to the State of Design MMEL.

This invariably leads to a situation where an aircraft type may have more than one MMEL (eg. Transport Canada, FAA, UK CAA, EASA, Australia etc...). The Authority has to then take a decision based on the certification basis that the aircraft was accepted for importation and registration and such corresponding MMEL.

- 2.1.2 Prior to commencing the MEL development process, the Authority strongly recommends that the operators consult the Authority on the correct MMEL to be utilised for a particular aircraft type.
- 2.1.3 The MMEL cannot address individual variables such as equipment annotated as “If installed”, nor standard terms such as “As required by Regulations” where operators are required to review the actual aircraft equipment fit, aircraft modification status, operational regulations, technical requirements applicable in the State where the aircraft is registered. It is for these reasons that a MMEL shall under no circumstance be presented to or approved by the Authority as a means of compliance to an Operator’s MEL as required by Part ORO.MLR.105.

2.2 The MEL and Operations Manual

- 2.2.1 The MEL forms part of the Operations Manual (Part B Section 9). Operators may choose to publish the MEL as a separate document. In such a case, the Operations Manual shall contain a statement to this effect and the MEL shall nevertheless be formatted as per the operator’s Operations Manual.
- 2.2.2 In view of the difficulties in maintaining the revision and amendment status as per the Part B, it is accepted that the MEL may have a separate revision and amendment status to that of Part B on condition that this is specifically stated in Section 9 of Part B.
- 2.2.3 The Authority will accept an electronic copy of the MEL as long as it contains all the necessary information as presented in the paper copy and only if it is the official means of controlled promulgation by the Operator to all other parties.

2.3 The Format and Content of an MEL

- 2.3.1 Reference shall be made to the AMCs to ORO.MLR.105 for the The format and content of the MEL. The AMCs also address acceptable preamble and definitions. Note that the MMEL preamble is not acceptable for use as an operator’s MEL preamble.
- 2.3.2 In addition to the AMC, the first line of the Preamble (1.) shall also, the following statement: “The MEL has also been produced in accordance with {manufacture/State of Design} MMEL dated xxxx Revision xxxx and takes into account CS-MMEL dated xxxx Revision xxxx.”

2.4 The MEL Preamble, Definition and Clarification Notes.

- 2.4.1 The MEL “Preamble” shall conform to AMC1 ORO.MLR.105(d) and AMC1 ORO.MLR.105(d)(1). Operators are advised that the MMEL Preamble in its entirety is not acceptable for use as an MEL Preamble as the intent and purpose of the two publications differ. Certain relevant information may be extracted such as definition of specific terms used by the manufacturer that is essential for MEL usage (if this does not conflict with JAR OPS or MMEL/MEL) and abbreviated operational or maintenance procedures.
- 2.4.2 Notes and Definitions are required to allow the user to interpret the MEL properly and further contribute to standardised interpretation and dispatch.
- 2.4.4 It should be noted that EASA Air OPS does not specifically utilise the term “Dispatch” but rather states in GM1 ORO.MLR.105 (a) that the MEL is applicable up to the commencement of flight. The commencement of flight is subsequently defined in CS-MMEL BOOK 2 as the point when an aircraft begins to move under its own power for the purpose of preparing for take off. In the case of a helicopter, it refers to the moment the helicopter commences air or ground taxi. For the purpose of this requirement the Authority accepts the term “dispatch” to be utilised to mean this point.

- 2.4.5 In such a case, if a failure occurs during the taxi phase before the start of the take-off roll, any decision to continue the flight shall be subject to pilot judgment and good airmanship. The commander may refer to the MEL before any decision to continue the flight is taken (AMC2 ORO.MLR.105(d)(3) refers). This statement shall be made in the Clarification Notes of the MEL.
- 2.4.6 The operator's MEL shall include policies and/or procedures, to deal with any failures which occur between the start of taxi and take-off brake release.
- 2.4.7 In some cases, operators may choose an alternative dispatch point which may be earlier such as door closed. As such, the definition list shall be supplemented by a definition of "Dispatch" as intended to be utilised by the Operator and shall also take into account 2.4.4 and 2.4.6 above.
- 2.4.8 The following "Clarification Notes" shall be added to the MEL Preamble as Section 10 and shall take into account 2.4.5. Additionally, the Authority has considered it necessary to provide other material which shall be included as follows:

- a) **"It is not reasonably practical to repair or replace before the commencement of flight /it is not reasonably practicable for repairs or replacements to be made":**

The intention of either of these statements in an MMEL or MEL is that the aircraft may be dispatched if there are inadequate available spares or if there are no qualified and authorised personnel on base 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 on base, the defect must be rectified.

This statement is to be clarified as follows: *"These statements 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. It is not intended that operational restrictions such as time constraints or subsequent impact to the operator's schedule be factors in such considerations."*

- b) **"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 / the aircraft may continue the flight or series of flights but shall not depart an airport where repairs or replacements can be made":**

The intention of these statements is that once the aircraft lands at the maintenance base, the aircraft shall not be dispatched until the defect has been rectified.

This statement shall be clarified as follows: *"This statement is 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."*

2.5 List of Effective Pages and Table of Content

- 2.5.1 All operator MELs shall include an accurate List of Effective Pages and Table of Content.
- 2.5.2 The List of Effective Pages shall list the date of the last amendment for each page of the MEL. The date and revision status of each page of the MEL must correspond to that shown on the List of Effective Pages.

2.5.3 The Table of Contents page shall list the section for each aircraft system utilizing the ATA 100 listing as found in the MMEL. The pages shall be numbered with the ATA system number followed by the item number for that system (e.g., the page following 27-2-1 would be 27-2-2).

2.6 MEL ATA Indexing and Equipment Fit

2.6.1 Operators are advised that under all circumstances, the ATA indexing as stipulated by the respective MMEL shall be maintained for initial and continued cross reference to the MMEL.

2.6.2 In cases where certain equipment are not installed, operators shall state "Not Installed" below the item. The Authority recommends maintaining all such items in the MEL to facilitate the required entries should the equipment be subsequently fitted and to preserve the sequence of the ATA index.

2.6.3 MMELs are regularly reviewed and revised by the State of Design. As a result, certain item listing are either added or deleted or remarks revised. In cases where the MMEL has an item that has been deleted but is kept in the MMEL (eg. ~~Altimeter~~ (deleted)), such items shall be deleted from the MEL. All subsequent ATA indexes for items shall be maintained as per the MMEL.

2.7 Number installed and Number Required for Dispatch

2.7.1 Operators shall ensure that the entries for the number installed (usually specified as "-" in the MMEL) in the required column is specified.

2.7.2 In most situations the number required for dispatch shall also be specified. There are a few instances that the Authority will accept a "-" in this column. These are instances where the equipment is dependent on particular operations, complement of passengers and/or crew. A few examples include oxygen masks, seats, seat belt, harnesses, life jackets etc... In all such cases the remarks and exceptions column shall contain adequate information to qualify and quantify such considerations.

2.7.3 Situations may exist (particularly on helicopters and light twin aeroplanes) where the number installed is the same as the number required. In such circumstances, by default, no relief is possible and as such the repair interval should be deleted and the remark should be substituted with "Required for operations". The item shall not be deleted entirely from the MEL.

2.8 Operations (O) and Maintenance (M) Procedures

2.8.1 MMEL's will usually annotate items that require special procedures to be completed as conditions of such alleviations. The O and M procedures shall be annotated accordingly in the operator's MEL as required by CS-MMEL and CS-GEN-MMEL.

2.8.2 Operators shall utilise approved manufacturer publications such as Maintenance Manuals, Flight Manuals, Dispatch Deviation Guides (DDG), Aircraft Deactivation Procedures Manual etc... as sources to derive these procedures. Alternatively, operators may also reference to such documents.

2.8.3 The Authority requires that O and M procedures or references to such procedures are placed in two separate sections of the operator's MEL. Placing abbreviated procedures or references to such procedures in the MEL remarks column adds too much clutter.

- 2.8.4 Where references are utilised to manufacturer publications, it shall contain the title of the publication and Chapter/Section reference.
- 2.8.5 Where the actual procedures are derived and placed as an integral part of the operator's MEL, it shall be clearly identifiable by the respective ATA index to facilitate cross referencing.
- 2.8.6 Operators should note that O and M procedures are a fundamental part of the Authority's consideration in the approval of the MEL and its importance shall not be diminished.

2.9 Special Operations (RVSM, RNP, BRNAV etc...)

- 2.9.1 Special Operations such as RVSM, RNP and BRNAV require operators to annotate minimum equipment carriage for such operations in accordance with ORO.MLR.105(d)(3). The MMEL or relevant Special Operations AMC will present the equipment carriage requirements.
- 2.9.2 Operators shall consult such manufacturer technical publications in the MEL development process. This review is essential especially on large complex aircraft where basic terminology such as "Altimeters" required by the CS-MMEL may actually translate into a range of associated equipment and system on particular types of aircraft (eg. FMS, Air Data and other computers etc....).
- 2.9.3 Operators undertaking such operations shall annotate equipment required for special operations. This shall be achieved by the statement "Required to be operative for {type of operations}".

2.10 Operational/Regulatory MEL Policies

- 2.10.1 CAT.IDE.A.105 prescribes that a flight shall not commence unless the instruments and equipment required under Part CAT.IDE in operable condition for the kind of operations being conducted, except as provided in the MEL.
- 2.10.2 Equipment and systems referred to in Part CAT and NCC Subpart IDE are usually indicated (in the remarks column in non-EASA MMEL) by statements such as:
- "As required by FARs"
 - "As required by Regulations"
 - "As required by Operating Regulations".
 - "As required by Air Navigation Legislation"
- 2.10.3 The purpose of Appendix 1 to GM1 MMEL.145 is to give operators the guidance necessary to develop the MEL provisions for such equipment, and conditions for the unserviceability, in order that Part CAT and Part NCC are properly complied with. As such, all equipment indicated by these statements shall be referenced this Appendix for the repair interval, number required and associated remarks.
- 2.10.4 Statements such as those listed in 2.10.2 shall not appear in an operator's MEL. The statements are intended that the operator reviews operating regulations of the State of Registry and Operator and alleviation policies which may be different to the State of Design, and finally make the appropriate entries.
- 2.10.5 It is not intended by Appendix 1 to GM1 MMEL.145 that operators include all items into the MEL but rather the MMEL should be the primary document to identify should an entry be made in the MEL. The next step is to utilise the alleviation provided for in the Appendix.

- 2.10.6 Appendix 1 to GM1 MMEL.145 may also be used to obtain relief for optional equipment installed but not required by the certifying authority or operational requirements eg. GPS, transponder, weather radar. marine band radios etc...
- 2.10.7 In cases where the Repair Interval in Appendix 1 to GM1 MMEL.145 is more restrictive than the MMEL, the repair interval of the Appendix shall take precedence.
- 2.10.8 There are some cases where even when items are annotated by statements as listed in 2.10.2, the manufacturer has also included certain conditions in the remarks column. In such cases, operators shall ensure that the remarks proposed by Appendix 1 to GM1 MMEL.145 satisfactorily encompass such conditions and where it does not, the operator shall integrate the manufacturer conditions in addition to the Appendix text.
- 2.10.9 The ATA indexes stated in the MMEL may also not correspond to that of Appendix 1 to GM1 MMEL.145. In such cases the ATA indexes in the MMEL shall be utilised for the MEL.
- 2.10.10 It should be noted that the latest EASA requirement applicable for aircraft certified by EASA is that the manufacture has to integrate elements of Appendix 1 to GM1 MMEL.145 into the MMEL.

2.11 MEL Applicable to a fleet of same type or series

- 2.11.1 MELs may be applicable for a fleet of the same type or series. The operator shall ensure that the aircraft registration (S7-xxx) is used to annotate and differentiate items that are specific to a particular aircraft. Statements below the item such as (S7-xxx only), (Except S7-xxx) or (S7-xxx and S7-xy only) are acceptable.

3. MEL Submission for Approval and Compliance Monitoring Review

- 3.1 Operators shall ensure that prior to the MEL or MEL amendment being submitted to the Authority for Approval, the document is reviewed for compliance to provisions of Part CAT, Part NCC and any relevant Notices or Directive.
- 3.2 A checklist is presented at Appendix A to this Safety Notice to facilitate the Compliance review.

4. MEL Amendments

- 4.1 AMC1 ORO.MLR.105(c) requires that within 90 days of a revision to the MMEL, the operator shall submit a proposed amendment to the Authority reflecting such amendments. As such, it is recommended that operators establish a process that ensures that the MMEL and MEL is reviewed at time intervals necessary to identify such revisions.
- 4.2 It should also be noted that Appendix 1 to GM1 MMEL.145 may also be revised and similarly, the operator shall have 90 days to amend the MEL to reflect the latest revision to the Appendix. The Compliance Monitoring Programme as required by Part ORO.GEN.200 and associated AMC shall include periodic audits of the MEL to ensure compliance to 4.1 and 4.2.
- 4.3 Operators are reminded that the MEL and subsequent amendments are required to be approved by the Authority. This also includes any temporary amendments incorporated prior to another amendment or revision.
- 4.4 Operators shall utilise a proposed amendment format and content in accordance with Appendix 2 of this Safety Notice. The certified completion of the technical review by the

Airworthiness and Engineer Licensing Inspectorate and the Flight Operations and Flight Crew Licensing Inspectorate shall convey approval of the proposed amendment.

5. RIE Authorisation Request

- 5.1 It should be noted that the privilege of utilising a RIE is not automatic even where provided for in the MMEL and is further subject to the Authority's Approval as required by Part ORO.MLR.105(f). Misuse of the MEL extension authority may result in the privilege being withdrawn.
- 5.2 In order for operators to obtain the authorisation to use RIEs, they shall apply to the Head of Flight Operations Inspectorate.

6. RIE Process

- 6.1 In cases where RIE authorisation has been granted, the operator shall ensure that rectification is accomplished at the earliest opportunity. The utilisation of RIEs is to be used to allow operators to continue to operate an aircraft after the rectification interval has expired if the rectification has not been possible. To this end, an operator who utilises RIEs will be required to report retrospectively all such uses, together with the reasons for them, to the Head of Flight Operations Inspectorate using an RIE Report Form (an example is attached at Appendix 1).
- 6.2 The RIE authorisation granted by the Authority and related procedures and processes shall be detailed in Section 6 of the MEL preamble. It shall also include details stated in 2.2 above.

7. RIE within MMEL

- 7.1 Based on EASA's ruling on the interpretation of Part ORO.MLR.105(e), in order that an operator can take advantage of RIEs, the MMEL source document (i.e. the manufacturer's MMEL, or the National Authority of the State of manufacturer's MMEL) must in the first instance contain the appropriate entry allowing the extension of a rectification interval. Therefore, the flexibility of ORO.MLR.105(e) does not apply unless the MMEL explicitly allows the use of RIEs.
- 7.2 A number of manufacturers have examined the basis of the Rectification Intervals for B, C and D items and have concluded that it is possible to extend (double) the rectification period. As a result, they have added statements to their MMELs explaining how RIEs can be permitted with the agreement of the Authority.
- 7.3 Other manufacturers were either unable or unwilling to complete a similar review of their MMELs. In the absence of such reviews, the Authority does not have the data upon which to assess the risks involved and therefore is unable further extend any repair interval. In such cases, the operator shall consult the Manufacturer in the first instance.
- 7.4 As stated in 1.2 JAR-MMEL/MEL.081 allows for the extension on category B, C or D. FAA Policy Letter 25 (Definitions, 22) only allows extension on category B and C items for FAA MMELs. In cases where the Authority has accepted the FAA type certification basis and MMEL, the FAA policy letter ruling shall apply.

8. RIE beyond the MMEL guidance

- 8.1 In cases where the RIE provided for in the MMEL has been utilised, operators shall consult the Manufacturer on any further extensions prior to making a request to the Authority.

9. Queries

- 6.1 Any queries as a result of this Safety Notice should be addressed to Head of Flight Operations and Flight Crew Licensing Inspectorate at the following e-mail address: hfo@scaa.sc

7. Cancellation

OPS SN 2012/09 Issue 3

Head Flight Operations and Flight Crew Licensing Inspectorate

Appendix A

MEL Compliance Review

Item	Conformance (Yes, No or N/A)
1. Correct MMEL and latest revision utilised and referenced in the MEL Preamble.	
2. Format of MEL in accordance with AMC1 ORO.MLR.105(d).	
3. MEL Preamble in accordance with AMC1 ORO.MLR.105(d)(1).	
4. Additional line included to Preamble (1.) as per SN 2018/06, 2.4.1.	
5. Definitions to include "Dispatch" as per SN 2012/09, 2.4.4.	
6. Procedures included for any failure occurring between start of taxi and brakes release as per SN 2018/06, 2.4.5.	
7. Addition of Section 10 "Clarification Notes" to the MEL Preamble as per SN 2012/09, 2.4.8.	
8. Addition to Clarification Notes as per SN 2012/09, 2.4.8.	
9. List of Effective Pages included.	
10. Table of Contents included.	
11. MEL ATA indexing, equipment/system, repair intervals, number required and remarks (except as per Appendix 1 to GM1 MMEL.145) as per MMEL.	
12. Equipment not installed annotated as "Not installed" as per SN 2018/06, 2.7.2.	
13. "Number installed" and Number required" specified as per SN 2018/06, 2.7.	
14. O and M procedures are included or referenced to other publications and in separate sections to the MEL as per SN 2012/09, 2.8.3.	
15. Equipment for Special Operations (ETOPS, RVSM, RNP, BRNAV) have been annotated in accordance with associated TGL and manufacturer technical publications.	
16. Appendix 1 to GM1 MMEL.145 has been adhered to for all equipment relating to JAR OPS Sub Part K and L in accordance with SN 2012/09, 2.10.	

Appendix B

Minimum Equipment List (MEL) Compliance Document

Minimum Equipment List (MEL) Amendment Approval Submission

Aircraft type: _____

MEL Ref: _____ Issue No: _____ Date: _____ Amendment No: _____

Source MMEL / Supp: _____ Version No: _____ Date: _____

Item	Action to be taken	Justification

COMPLIANCE STATEMENT: This MEL complies with Part ORO.MLR.105 and Appendix 1 to GM1 MMEL.145 and is no less restrictive than the applicable approved MMEL/Supplement* (* delete as appropriate)

Signed: _____ Name: _____ Position: _____

Date: _____ Operator: _____

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

For SCAA use

Airworthiness Inspector
Technical review completed.

Flight Operations Inspector
Review completed. Operationally and technically acceptable.

Signed: _____ Date: _____

Signed: _____ Date: _____

Compliance statement returned to Operator. Date: _____