

## **Bermuda Civil Aviation Authority**

### **A GUIDE TO WRITING AN OTAR COMPLIANT MEL.**

The aim of this LTO is to help MEL authors produce Minimum Equipment List to the standard required by the Bermuda Civil Aviation Authority.

The need for an MEL is described in OTAR 125.615.

The overall requirement is that the MEL must never be less restrictive than the Master MEL, must follow the AN(OT)O, must contain all the Operational and Maintenance procedures indicated by the MMEL and must be tailored to the operator as well as the specific aeroplane to which the Approval applies.

To obtain an Approval for the MEL:

1. The MEL must follow the applicable MMEL; Transport Canada's for aeroplanes with a TC Type Certificate, EASA for an EASA TC and FAA for an FAA TC. The easiest way to determine which MMEL is relevant is to verify what is listed on the valid Certificate of Airworthiness.
2. Where an MMEL item in the Exceptions or Remarks columns contains an entry such as "in accordance with regulations" or "in accordance with FARs" the interpretation of the regulation must first be based upon the AN(OT)O as explained by the appropriate OTAR. Remember, that in the new format of OTARs, Parts 91 as well as Part 125 must be followed.
3. The operator's customized MEL must include a List of Effective Pages or Control Pages. The operator's MEL must state on the front page or in the List of Effective Pages or Control Pages on what MMEL Revision and date it is based on. This information must be amended each time the MEL is revised in compliance with an MMEL revision, except as noted in para 16.
4. The operator's MEL must contain suitable MEL Definitions and a Preamble, using the appropriate MMEL as the source. The Definitions and Preamble must be customized for each operator as appropriate for their individual operating policy and procedures.
5. Dashes in the MMEL's "Numbers Installed" and "Numbers Required for Dispatch" must be converted to the actual quantity. If the MEL covers more than one aeroplane of the same type and the Numbers Installed differ, the aeroplane's registrations must be entered alongside the applicable quantities.
6. The MMEL's ATA alphanumeric numbering scheme should be used, even if the resulting list is not continuous. For example, if the MMEL contains ATA Items XX-1, XX-2, XX-3 and XX-4 and the operator does not have items XX-2 and XX-3, the second item in the MEL should still use the number XX-4. The rule applies similarly to sub-items a), b) etc. Operator's may use customized MEL item numbering schemes provided they adhere to the basic ATA chapter assignment (i.e., ATA 21 - Air Conditioning, ATA 22 - Auto Flight, etc) and a unique number is assigned to MEL items and sub-items.
7. The \*\*\* symbol for optional equipment must be not present in the MEL. The MEL must be tailored. Optional equipment must either be included in the MEL if present or not mentioned if not present.
8. The operator's MEL must reflect the actual aeroplane configuration where the available relief differs, depending upon modification status, service bulletin accomplishment, aircraft model/series or serial number applicability. The relief must either be included in the MEL if applicable,

listed as "Not Installed" or not mentioned if not applicable.

9. Dispatch Deviation Guides, such as produced by Boeing, Bombardier, Gulfstream and others, may not be used as a standalone unedited documents as a substitute for including (O) and (M) information in the MEL. The same applies to the (O) and (M) chapters of an Airbus MMEL. The manufacturer's procedures (DDG, DDPG, DDPM, MPM, etc) should be used as a guide to produce appropriate (M) and (O) procedures in the operators MEL.

Operating and Maintenance procedures must be included in the operator's MEL. DDG entries such as "in accordance with regulations" and "a procedure must be in place" and "alternate procedures must be established and used" must be fully explained or if covered in another manual carried on the aeroplane be fully referenced. The BCAA's MEL reviewer will require sight of the reference document.

The practice of writing a separate (O) and (M) procedures document is not recommended. If this method is used, the MEL must include instructions as to where the required (M) and (O) procedures may be found.

TCCA MMEL's use a (M#) symbol to highlight those items that can only be accomplished by a certified Aircraft Technician. These type items should carry over to the operators MEL in some format.

It is the operator's responsibility to obtain DDG/MOPP Revisions and revise their MEL as appropriate and submit to BCAA for approval.

10. The manufacturer's (O)s and (M)s are not necessarily exhaustive. The operator must add its own procedures if the manufacturer's are vague or incomplete. For example with an inoperative Anti-Skid system an entry such as "Airplane Flight Manual corrections must be made" is of little use if the crew has no access to the AFM's performance graphs. An acceptable entry in the Operational Procedures column would be "Anti-Skid inoperative runaway analysis must be obtained from the performance provider" or "Use FCOM Vol 1 Take-off - Performance Inflight (PI) section - Antiskid Inoperative."
11. Ops Spec/Airspace Approvals (Low Visibility Operations, RNP, RVSM, etc) usually require that the MEL contain the relevant dispatch conditions. The appropriate entry must be written in the Number Installed, Number Required and the Remarks or Exceptions column, or a reference made to the appropriate manual where the dispatch requirements may be found.
12. The BCAA does not require an MEL to contain a Nonessential Equipment and Furnishings (NEF) list. Instead, the MMEL's Passenger Convenience items entry can be used.
13. Where provided in the MMEL, relief for inoperative main entry or service doors/slides may be included in the operator's MEL only if blocked seating layouts and alternate evacuation procedures are developed and submitted to BCAA for review.
14. A separate Approval is not required for a Rectification Interval Extension (RIE) scheme. Only periods B, C, and D are permitted to be extended.

The RIE permits an operator to continue to dispatch an aircraft with equipment unserviceable or missing after the standard rectification interval has expired if in the opinion of the Chief Pilot and the Maintenance Manager it is not possible for the repair to be made within that rectification interval. It is not intended that RIEs should be used simply to double the standard rectification interval.

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, provided:

- a) A description of specific duties and responsibilities for controlling extensions is established by the operator and described either in the introduction to the MEL or in acceptable AN(OT)O Article 134 Operations Manual.
- b) The operator only uses a onetime extension of the applicable Rectification Interval.
- c) Rectification is accomplished at the earliest opportunity within the period of the extension.
- d) A report is sent to the BCAA describing the reason for the RIE within 24 hours.

Commonly, there are three reasons why an RIE is required: an inability to obtain a spare part; the lack of a suitably qualified engineer and difficulties in bringing the spare and the engineer to the aeroplane. The report must clearly describe which element or elements contributed to the need for an RIE and what steps were taken to organise the rectification.

All reasonable effort must be made complete the rectification within the MEL interval. Abuse of the Rectification Interval Extension scheme will result in the BCAA withdrawing its use by the operator.

The RIE scheme suggested in section 8 of UK CAA publication 549 (CAP 549) may be simplified by OTAR Part 125 operators. The 'Authorising Manager' may be the Chief Pilot or the Maintenance Manager but the principle of consultation between them must be followed.

Finally, the Pilot-in-Command has the right not to accept the use of an RIE.

15. Paperless cockpit operators may present tailored electronic MELs for Approval but the BCAA must be given a text version. The same "rules" apply for optional equipment, references to regulations and ATA alphanumeric.
16. When a MMEL or MMEL Supplement revision is issued an operator will have 90 days, from the date of the revision, to revise the MEL. The operator's MEL need not be revised if the change to the MMEL is less restrictive than the existing MEL (as is the case with FAA MMEL revisions with letter suffix, e.g., Revision 11b). Reduced timescales for implementation of safety related revisions of an MMEL or MMEL Supplement may be required by the Governor. It is the operator's responsibility to obtain MMEL Revisions (standard or temporary) or MMEL Supplements, and revise their MEL accordingly and submit to BCAA for approval prior to the 90-day deadline.

There are permissible exceptions to some of the above procedures:

1. If the AN(OT)O and OTARs do not provide sufficient information:
  - a. CARs and MMEL Guidance Book must be used for a TC based MMEL.
  - b. EASA Air Operations and EASA CS-MMEL for an EASA based MMEL.
  - c. 14 CFRs and MEL Policy Letters for an FAA based MMEL.
  - d. As a last resort, if a dispatch condition cannot be found from TC or FAA sources for MMELs issued by these authorities, EASA CS-MMEL may be used.
2. The dash symbol may be retained where it would be impractical to determine the number of items installed such as: flight deck or cabin lights, cargo

restraint devices or compartment lining panels, the Number of Fasten Seat Belt required to be visible to passengers when other signs or placards are inoperative etc., where the actual number installed is inconsequential to the MEL dispatch decision. However, the exceptions should be few.

3. The OTAR requires that the MEL be included in the Operations Manual. For convenience, the MEL may be a stand-alone separate manual (or an electronic document) so long as an appropriate entry is displayed in the Operations Manual.
4. Because of difficulties experienced by MEL authors in determining Rectification Intervals for Flight Data Recorders, the period and conditions of EASA CS-MMEL may be used irrespective of the origin of the MMEL.