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Federal Office of Civil Aviation FOCA
Safety Division - Flight Operations

FOCA GM/INFO

Guidance Material / Information

Minimum Equipment List

This GM/INFO shall provide guidelines and explanations in establishing and amending an operator MEL in accordance with EASA Air Ops and CS-MMEL.

Scope	Guidance on establishing and amending an MEL based on an MMEL
Applies to	Part-CAT, -NCC, -SPO Operators
Valid from	10 October 2019
Purpose	Guidance/Information

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Date	Issue	Revision	Highlight of Revision
10.10.2019	1	0	First Issue

List of Effective Chapters

List of Abbreviations

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The following abbreviations are within this GM/INFO:

Abbreviation	Definition
ABB	Abbreviation
ADMIN	Administration
AFM	Aircraft Flight Manual
AMC	Acceptable Means of Compliance
AOC	Air Operator Certificate
ATA	Air Transport Association
ATC	Air Traffic Control
ATO	Approved Training Organisation
CAM	Continuing Airworthiness Manager
CAME	Continuing Airworthiness Management Exposition
CAMO	Certified Aircraft Maintenance Organisation
CAT	Commercial Air Transport
Ch.	Chapter
CS	Certification Specification
DEF	Definition
DG	Dangerous Goods
EASA	European Aviation Safety Agency
EC	European Commission
EFB	Electronic Flight Bag
ETOPS	Extended Range Operations with two Engine Aeroplanes
EU	European Union
FCOM	Flight Crew Operation Manual
FOCA	Federal Office of Civil Aviation
GEN	General
GM/INFO	Guidance Material / Information
HEMS	Helicopter Emergency Medical Service
HHO	Helicopter Hoist Operations
ICAO	International Civil Aviation Organisation
IMC	Instrument Meteorological Conditions
ISS	Issue
JAA	Joint Aviation Authorities
LoR	Log of Revision
LVO	Low Visibility Operation
MCM	Maintenance Control Manual
MEL	Minimum Equipment List
MLR	Manuals, Logs and Records
MMEL	Master Minimum Equipment List
MNPS	Minimum Navigation Performance Specification
NAT HLA	North Atlantic High Level Airspace
NCC	Non Commercial Complex
NVIS	Night Vision Imaging System
OM	Operations Manual
OM A	Operations Manual Part A, General / Basic
OM B	Operations Manual Part B, Aircraft Operating Matters
OM C	Operations Manual Part C, Route, Role, Area and Aerodrome, Operating Site Instructions and Information
ORO	Organisation Requirements for Air Operations
OSD	Operational Suitability Data
PBN	Performance Based Navigation
PRA	Proposed Revision / Amendment Form
REV	Revision
SPO	Specialised Operations
TCDS	Type Certificate Data Sheet

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0 Introduction

Ch. 0 ISS 1 / REV 0 / 10.10.2019

The FOCA Guidance and Information Material (GM/INFO) is intended to assist the operator in the implementation of applicable regulations.

This GM/INFO should therefore be considered as a tool for the operator which may assist in the process of obtaining required approvals and authorisations which will be issued by the Federal Office of Civil Aviation (FOCA).

Using this GM/INFO should facilitate establishing compliance with defined requirements and should lead through the respective certification or variation process. The implemented checklists provide for a simple and overarching reference to all applicable regulations und ensure full compliance with regulations.

0.1 Legal References

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Basic Regulation (EC) No 2018/1139:

- Common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency

Commission Regulation (EU) No 965/2012:

- Technical requirements and administrative procedures related to air operations
- Annex I: DEF; Annex II: Part-ARO; Annex III: Part- ORO; Annex IV: Part-CAT; Annex V: Part-SPA; Annex VI: Part-NCC; Annex VIII: Part-SPO

CS MMEL/CS GEN MEL:

- Certification Specifications and Guidance Material for MMEL (Master Minimum Equipment) List (including generic MEL)

Commision Regulation (EU) No 748/2012:

- Annex I: Part-21, Operational Suitability Data (OSD)

0.2 Purpose of this GM/INFO

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The purpose of this GM/INFO is to provide:

- Overview over the general requirements of a MEL and MMEL
- Guidance on how to develop an Operator MEL
- Guidance on how to structure an Operator MEL
- A tool for possible self assessment by the operator

Note: This GM/INFO should assist the operator active in Part-CAT, Part-NCC, Part-SPO operations in establishing or revising a MEL in compliance with the applicable regulations. It is not required to hand in this GM/INFO to FOCA when applying for the approval of a new MEL or MEL revision.

Examples herein may be incomplete and solely represent possible means on how to provide required data. An organisation must add further information or adapt the examples to their specific needs accordingly. Definitions, when necessary, are outlined in a summary.

0.3 Terms and Conditions

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When used throughout the GM/INFO the following terms shall have the meaning as defined below:

Term	Meaning	Reference
shall, must, will	These terms express an obligation, a positive command.	EC English Style Guide, Edition 2.19, Chapter 10
may	This term expresses a positive permission.	
shall not, will not	These terms express an obligation, a negative command.	
may not, must not	These terms express a prohibition.	
need not	This term expresses a negative permission.	
should	This term expresses an obligation when an acceptable means of compliance should be applied .	EASA Acceptable Means of Compliance publications FOCA policies and requirements
could	This term expresses a possibility.	http://oxforddictionaries.com/definition/english/could
ideally	This term expresses a best possible means of compliance and/or best experienced industry practice.	FOCA recommendation

Note: To highlight information or an editorial note a specific note box is used.

- The use of the male gender should be understood to include male and female persons.

1 General Information About the Minimum Equipment List

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Annex IV to Article 8 (essential requirements for air operations) of the Basic Regulation allows 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 items may not be necessary when the remaining operative equipment can provide an acceptable level of safety.

Most aircraft are designed and certified with a significant amount of equipment redundancy, such that the airworthiness requirements are satisfied by a substantial margin. In addition, aircraft are generally fitted with equipment that is not required for safe operation under all operating conditions, e.g. instrument lighting in day VMC. All items related to the airworthiness, or required for the safe operation of the aircraft and not included in the list, are automatically required to be operative.

The Minimum Equipment List (MEL) is a document that lists the equipment that may be temporarily inoperative, subject to certain conditions, at the commencement of flight. This document is prepared by the operator for their own particular aircraft taking account of their aircraft configuration and all those individual variables that cannot be addressed at the Master Minimum Equipment List (MMEL) level, such as operating environment, route structure, geographic location, aerodromes where spare parts and maintenance capabilities are available, etc., in accordance with a procedure approved by the competent authority.

The MEL therfore has the purpose to identify the minimum equipment and conditions to operate safely an aircraft having inoperative equipment. Its purpose is not, however, to encourage the operation of aircraft with inoperative equipment. It is undesirable for aircraft to be dispatched with inoperative equipment and such operations are permitted only as a result of careful analysis of each item to ensure that the acceptable level of safety, as intended in the applicable airworthiness and operational requirements is maintained. The continued operation of an aircraft in this condition should be minimised.

The MMEL, as defined in the mandatory part of the operational suitability data (OSD) established in accordance with Commission Regulation (EU) No 748/2012, is developed in compliance with CS-MMEL or CS-GEN-MMEL. These Certification Specifications contain, among other, guidance intended to standardise the level of relief granted in MMELs, in particular for items that are subject to operational requirements. If a MMEL established as part of the operational suitability data is not available and items subject to operational requirements are listed in the available MMEL without specific relief or dispatch conditions but only with a reference to the operational requirements, the operator may refer to CS-MMEL or CS-GEN-MMEL guidance material, as applicable, to develop the relevant MEL content for such items.

Note: CS-GEN-MMEL are as well applicable for non-complex helicopters, except if certified for operation under IFR, flight into icing conditions and category A operations. Otherwise CS-MMEL are applicable.

An operator's MEL may differ in format from the respective Master Minimum Equipment List (MMEL) provided by the manufacturer or TCDS holder, but shall not be less restrictive than the MMEL. The individual operator's MEL, when approved by the FOCA, allows under certain conditions operation of the aircraft with inoperative items of equipment for a certain period of time until rectification can be accomplished.

The MEL cannot deviate from Airworthiness Directives or any other additional mandatory requirements.

Note: It is important to take note that all items related to the airworthiness and the operational regulations of the aircraft not listed on the MMEL shall be operative.

When an item is discovered to be inoperative, it is reported by making an entry in the continuing airworthiness record system or the operator's technical log, as applicable. Following sufficient fault identification, the item is then either rectified or deferred following the MEL or other approved means of compliance acceptable to the competent authority (FOCA) and the Agency (EASA) 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 inoperative.

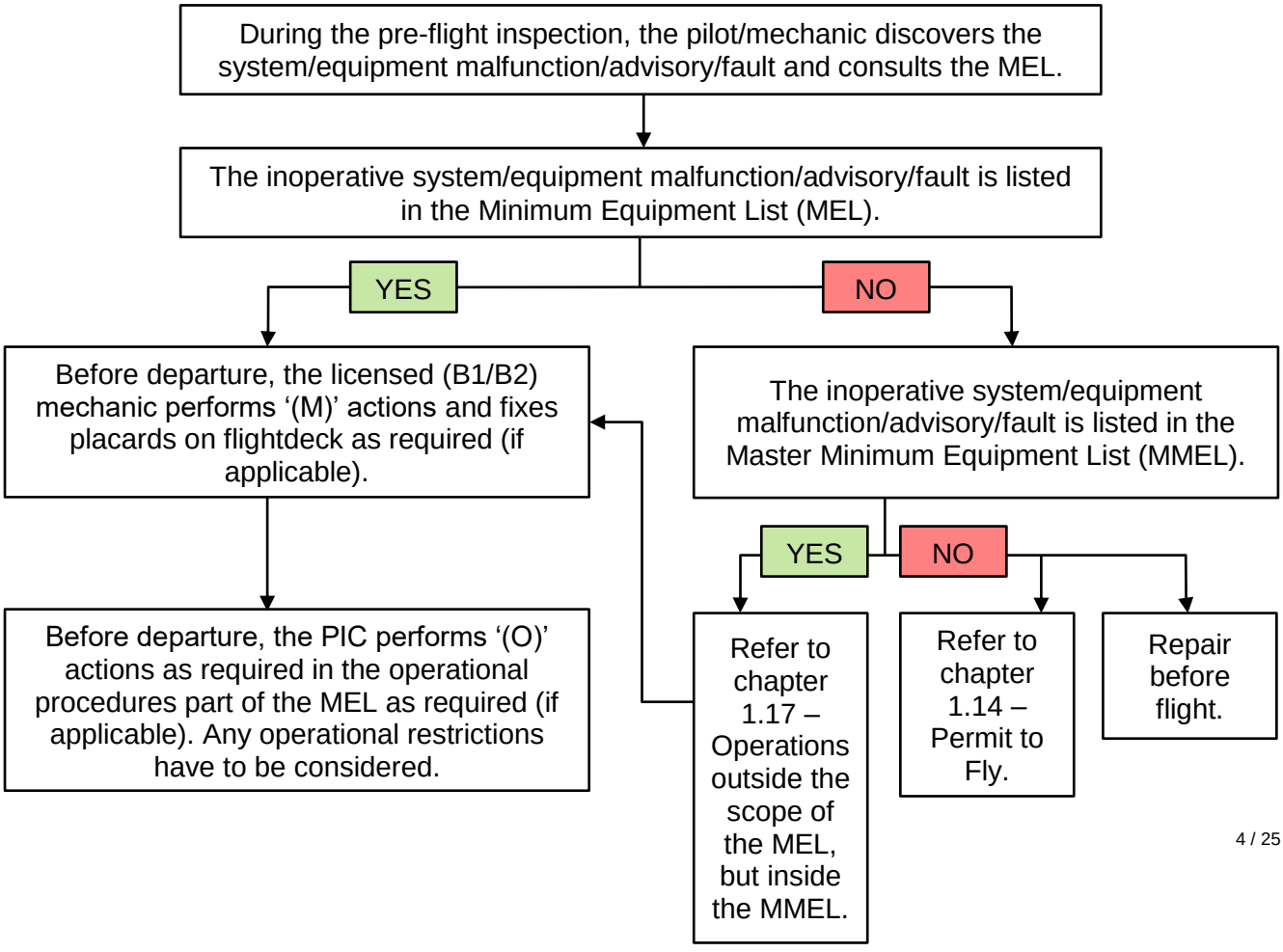
Operators should include guidance in the MEL to deal with any failures which occur between the commencement of the flight and the start of the take-off. When developing the MEL, compliance with the stated intent of the preamble, definitions and the conditions and limitations specified in the MMEL is required.

Equipment, such as entertainment systems or galley equipment, may be installed for passenger convenience. If this non-safety-related equipment does not affect the airworthiness or operation of the aircraft when inoperative, it does not require a rectification interval, and need not be listed in the operator's MEL, if it is not addressed in the MMEL. Where non-safety-related equipment serves a second function, such as movie equipment being used for cabin safety briefings, operators should develop and include operational contingency procedures in the MEL in case of an equipment malfunction. Where non-safety-related equipment is part of another aircraft system, for example the electrical system, procedures should be developed and included in the MEL for deactivating and securing in case of malfunction. In these cases, the item should be listed in the MEL, with compensating provisions and deactivation instructions if applicable. The rectification interval will be dependent on the secondary function of the item and the extent of its effect on other systems.

If the operator chooses to list non-safety-related equipment in the MEL, which is not not listed in the MMEL, he should include a rectification interval category. These items may be given a ‘D’ category rectification interval provided any applicable (M) procedure (in the case of electrically supplied items) is applied.

Operators should establish an effective decision making process for failures that are not listed in the MMEL to determine if they are related to airworthiness and required for safe operation. In order for inoperative installed equipment to be considered non-safety-related, the operation of the aircraft should not be adversely affected such that standard operating procedures related to ground personnel and crew members are not impeded. Further the condition of the aircraft is not adversely affected such that a negative impact on safety for passengers and/or personnel can be ruled out.

How the MEL shall be used in operations (before commencement of the flight):



1.1 Operator / Organisation Responsibilities

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Operators or Organisations operating in accordance with Part-CAT, Part-NCC or Part-SPO shall have a formally approved MEL implemented for their operations.

This requirement is based on ANNEX V Essential requirements for air operations within the Basic Regulation (EC) No 2018/1139.

Note: The initial implementation of an MEL and all subsequent changes to the content of the MEL must be formally approved by the FOCA before it may be used in flight operations.

Any change to an MEL for which an MMEL has not been established as part of the operational suitability data, shall continue to be made in accordance with the MMEL accepted by the State of Operator or Registry as applicable and must be approved by FOCA.

The Operator/Organisation shall establish an effective rectification programme and ensure that any aircraft under its control will not be operated after expiry of the rectification interval specified in the MEL unless either the defect has been rectified or the rectification interval has been extended not more than once in accordance with a process for which a formal approval from the FOCA has been obtained.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment lists Commission Regulation (EU) No 965/2012, Article 9	Any change to the MEL for which a Master Minimum Equipment List ('MMEL') is established as part of the operational suitability data in accordance with Commission Regulation (EU) No 748/2012 shall be made in compliance with point ORO.MLR.105 of Section 2 of Annex III not later than 18 December 2017 or two years after the operational suitability data was approved, whichever is the latest. Any change to a MEL referred to in the first subparagraph, for which an MMEL has not been established as part of the operational suitability data, shall continue to be made in accordance with the MMEL accepted by the State of Operator or Registry as applicable.		❑ ok ❑ not ok
Changes related to an AOC holder GM1 ORO.GEN.130(b)	CHANGES REQUIRING PRIOR APPROVAL (l) minimum equipment list (MEL): ❒ (1) MEL; ❒ (2) operating other than in accordance with the MEL, but within the constraints of the master minimum equipment list (MMEL); ❒ (3) rectification interval extension (RIE) procedures;		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(b) The MEL and any amendment thereto shall be approved by the competent authority.		❑ ok ❑ not ok

Minimum equipment list AMC1 ORO.MLR.105(c)	AMENDMENTS TO THE MEL FOLLOWING CHANGES TO THE MMEL - APPLICABLE CHANGES AND ACCEPTABLE TIMESCALES (a) The following are applicable changes to the MMEL that require amendment of the MEL: ❒ (1) a reduction of the rectification interval; ❒ (2) change of an item, only when the change is applicable to the aircraft or type of operations and is more restrictive. (b) An acceptable timescale for submitting the amended MEL to the competent authority is 90 days from the effective date specified in the approved change to the MMEL. (c) Reduced timescales for the implementation of safety-related amendments may be required if the Agency and/or the competent authority consider it necessary.		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(e) The operator shall: ❒ (1) establish rectification intervals for each inoperative instrument, item of equipment or function listed in the MEL. The rectification interval in the MEL shall not be less restrictive than the corresponding rectification interval in the MMEL; ❒ (2) establish an effective rectification programme; ❒ (3) only operate the aircraft after expiry of the rectification interval specified in the MEL when: (i) the defect has been rectified; or (ii) the rectification interval has been extended in accordance with ORO.MLR.105 (f).		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(i) Unless otherwise specified in the MEL, the operator shall complete: ❒ (1) the operational procedures referenced in the MEL when planning for and/or operating with the listed item inoperative; and ❒ (2) the maintenance procedures referenced in the MEL prior to operating with the listed item inoperative.		❑ ok ❑ not ok
Minimum equipment list AMC2 ORO.MLR.105(d)(3)	EXTEND OF THE MEL The operator should include guidance in the MEL on how to deal with any failures that occur between the commencement of the flight and the start of the take-off. If a failure occurs between the commencement of the flight and the start of the take-off, any decision to continue the flight should be subject to pilot judgement and good airmanship. The pilot-in-command/commander may refer to the MEL before any decision to continue the flight is taken.		❑ ok ❑ not ok

1.2 MEL within the Operations Manual System for Part-CAT, -NCC or -SPO

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When establishing a MEL, the operator shall consider following conditions:

- The document must provide guidelines for the operation of the aircraft, under specified conditions, with particular instruments, items of equipment or functions inoperative, at the commencement of the flight.
- The MEL shall contain a complete list of the serial numbers or registrations of all aircaft for which it is applicable.
- The document must be prepared for each individual aircraft or series of equally equipped aircraft, taking account of the operator's relevant operational and maintenance conditions.
- The MEL must be based on the Master Minimum Equipment List (MMEL), if available, and must not be less restrictive than the MMEL.

The MEL format and the presentation of items and dispatch conditions should reflect those of the MMEL.

The page numbering, and individual MEL items should ideally be structured in accordance with the ATA 100/2200 specification numbering system.

Other formats and item numbering systems may be used provided they are clear and unambiguous.

The location within the operators documentation systems should be in line with following regulations depending on the kind of operations such as Part-CAT, Part-NCC or Part-SPO organisation.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
For CAT operators AMC3 ORO.MLR.100	OM B 9 MINIMUM EQUIPMENT LIST (MEL) The MEL for each aircraft type or variant operated and the type(s)/area(s) of operation. The MEL should also include the dispatch conditions associated with operations required for a specific approval (e.g. RNAV, RNP, RVSM, ETOPS). Consideration should be given to using the ATA number system when allocating chapters and numbers.		❑ ok ❑ not ok
For NCC operators AMC2 ORO.MLR.100	OPERATIONS MANUAL - GENERAL (l) Minimum equipment list (MEL);		❑ ok ❑ not ok
For SPO operators AMC4 ORO.MLR.100	OM A GENERAL/BASIC 8.1.10 Guidance on the CDL and MEL; OM B AIRCRAFT OPERATING MATTERS - TYPE RELATED 9 MINIMUM EQUIPMENT LIST (MEL) The MEL for each aircraft type or variant operated and the type(s)/area(s) of operation. It should also contain procedures to be followed when an aircraft is being dispatched with one or more inoperative items, in accordance with the MEL.		❑ ok ❑ not ok

1.3 MEL Based on MMEL

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Any Part-CAT, -NCC or -SPO operator Minimum Equipment List (MEL) shall be based on the approved Master Minimum Equipment List (MMEL). Normally an EASA approved MMEL shall be the baseline for any MEL certification process if such MMEL available.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list ORO.MLR.105	(a) A minimum equipment list (MEL) shall be established as specified under point 8.a.3 of Annex IV to Regulation (EC) No 216/2008, **based on the relevant master minimum equipment list (MMEL)** as defined in the data established in accordance with Regulation (EU) No 748/2012. If an MMEL has not been established as part of the operational suitability data, the MEL may be based on the relevant MMEL accepted by the State of Operator or Registry as applicable.		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(c) The operator shall amend the MEL after any applicable change to the MMEL within the acceptable timescales.		❑ ok ❑ not ok

Minimum equipment list ORO.MLR.105	(d) In addition to the list of items, the MEL shall contain: ❒ (2) the revision status of the MMEL upon which the MEL is based and the revision status of the MEL;		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(e) The operator shall: ❒ (1) establish rectification intervals for each inoperative instrument, item of equipment or function listed in the MEL. The rectification interval in the MEL shall not be less restrictive than the corresponding rectification interval in the MMEL;		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(f) Subject to approval of the competent authority, the operator may use a procedure for the one time extension of category B, C and D rectification intervals, provided that: ❒ (1) the extension of the rectification interval is within the scope of the MMEL for the aircraft type;		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(g) The operator shall establish the operational and maintenance procedures referenced in the MEL taking into account the operational and maintenance procedures referenced in the MMEL. These procedures shall be part of the operator's manuals or the MEL.		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	(h) The operator shall amend the operational and maintenance procedures referenced in the MEL after any applicable change to the operational and maintenance procedures referenced in the MMEL.		❑ ok ❑ not ok

1.4 MEL Based on EASA or Non-EASA MMEL

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If during the certification process, the operator cannot present an EASA approved MMEL for the MEL certification process due to unavailability, the operator shall present to the FOCA any existing and available updated MMEL (e.g. FAA approved MMEL) and use it as a baseline for the certification process. However, elements listed in the CS-MMEL have to be used for the certification process as listed in this GM/INFO.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list ORO.MLR.105	A minimum equipment list (MEL) shall be established as specified under point 8.a.3 of Annex IV to Regulation (EC) No 216/2008, based on the relevant master minimum equipment list (MMEL) as defined in the data established in accordance with Regulation (EU) No 748/2012.		❑ ok ❑ not ok
Minimum equipment list ORO.MLR.105	If an MMEL has not been established as part of the operational suitability data, the MEL may be based on the relevant MMEL accepted by the State of Operator or Registry as applicable.		❑ ok ❑ not ok

1.5 MEL of 'in Production' and 'out of Production' Aircraft as a Baseline for the MEL

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For aircraft types currently in production, the only MMEL that may be used by EU Member State operators for the preparation of a MEL is an EASA-approved MMEL, listed in the Type Certificate Data Sheet (TCDS). Should there be no EASA approved MMEL available for an aircraft type, the valid TC Holder MMEL shall serve as basis for the FOCA approval.

Aircraft Type	Applicable Certification	Explanation
In production	EASA MMEL with certification basis CS-MMEL available	MMEL by EASA, including OSD data in accordance to EU 748/2012. MMEL is in line and includes all CS-MMEL standards and definitions. MMEL to be used as baseline document.
	EASA MMEL with certification basis JAR-MMEL available	MMEL by JAR MMEL, including OSD, (refer to TCDS). MMEL previously established in accordance to JAR-MMEL standards. Items «as required by regulations» shall be amended in accordance CS-MMEL guidance.
	Only NON-EASA MMEL with certification basis other than JAR-MMEL (e.g. FAA/TCAA) available	MMEL by other than JAR-MMEL certification standard, not including OSD. Applicable TCDS MMEL. MMEL established in accordance to other than JAA-MMEL standards. Items «as required by regulations» may be amended in accordance with the CS-MMEL guidance.
Out of production	EASA MMEL with certification basis JAR-MMEL available	MMEL by JAR MMEL, not including OSD. Applicable TCDS MMEL appliccable. MMEL previously established in accordance to JAR-MMEL standards. Items «as required by regulations» may be amended in accordance CS-MMEL guidance.
	NON EASA MMEL with certification basis other than JAR-MMEL (e.g. FAA/TCAA/…)	MMEL by other than JAR-MMEL certification standard, not including OSD. Applicable TCDS MMEL appliccable. MMEL established in accordance to other than JAA-MMEL standards. Items «as required by regulations» may be amended in accordance CS-MMEL guidance.

Explanation:
In production means an aircraft type is being produced under an approved type certificate.

Out of production means an aircraft is no more subject to production but maintains a valid type certificate and is or may be subject to manufacturer support.

1.6 General Content of any MEL

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Details on layout and the necessary elements for a MEL may be found in the CS-MMEL which contains important information which may be applied to the operators MEL.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Format and content of the MEL CS MMEL.120	Each MEL or associated document such as the OM B or comparable contains the following: ❒ Approval status, including date of approval and effective date. ❒ A preamble, containing considerations on the purpose and limitations, utilisation, multiple inoperative items, rectification interval extension, definitions and, if appropriate, clarifying notes which adequately reflect the scope, extent and purpose of the list. The list of items, including for each item: ❒ the rectification interval category; ❒ the number installed or a dash symbol, as applicable; ❒ the number required or a dash symbol, as applicable; ❒ the operational procedure symbol, as applicable; ❒ the maintenance procedure symbol as applicable; ❒ placarding indications, as applicable; and ❒ any associated conditions and limitations, including the intent and periodicity for the accomplishment of the operational and maintenance procedure, as applicable.		❑ ok ❑ not ok

1.7 Operational Suitability Data OSD

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Aicraft for which an EASA approved MMEL exists should have Operational Suitability Data integrated in the MMEL. This may not be the case for non-EASA approved MMEL, and for out of production aircraft.

As required in (EU) No 965/2012 Article 9 ‘Minimum Equipment List’, any change to the MEL for which a Master Minimum Equipment List (MMEL) is established as part of the operational suitability data (OSD) in accordance with Commission Regulation (EU) No 748/20123 shall be made in compliance with Air Operations point ORO.MLR.105 of Section 2 of Annex III at the earliest opportunity.

When establishing a minimum equipment list (MEL), the document shall be based on the relevant master minimum equipment list (MMEL) as defined in the data established in accordance with airworthiness Regulation (EU) No 748/2012 describing operational suitability data (OSD).

If a MMEL has not been established as part of the operational suitability data, the MEL may be based on the relevant MMEL accepted by the FOCA or State of Registry as applicable.

The operator shall amend the MEL after any applicable change to the MMEL within acceptable timescales (90 days from the effective date specified in the approved change to the MMEL).

Note: The operator shall establish rectification intervals for each inoperative instrument, item of equipment or function listed in the MEL. The rectification interval in the MEL shall not be less restrictive than the corresponding rectification interval in the MMEL.

1.8 Scope of the MEL

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An operation with a specific approval may require certain systems to be available and functional. Any required system functionality may be dependent on many subsystems of which a matrix may be needed to identify a specifc operational functional requirement. Out of the nature of certification, most MMEL take only single system malfunctions into account which may not be sufficient to fulfill a Part-SPA requirement.

Therefore the MEL should be adopted taking into consideration MMEL content on the respective SPA items such as RVSM/MNPS/PBN/ETOPS/NVIS/EFB and more. If the MMEL does not provide reference to Operations Specifications or the List of Specific Approvals, the implementation of a reference matrix covering minimum vital system elements for every individual specification may be a help for the user.

Example:
In general, MMELs do not refer to a system functionallity. This functionallity must be extracted from a specific requirement related to an operations specification.

-33-01	Radio Altimeter Systems	B	2	1	One may be inoperative provided: a) Approach minimums do not require its use, b) Operating procedures do not require its use, and c) LNAV is not armed for takeoff.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list AMC1 ORO.MLR.105(d)(3)	SCOPE OF THE MEL The MEL should include: (a) The dispatch conditions associated with flights conducted in accordance with specific approvals held by the operator in accordance with Part-SPA. (b) Specific provision for particular types of operations carried out by the operator in accordance with ORO.AOC.125.		❑ ok ❑ not ok

Scope of the MEL GM1 ORO.MLR.105(d)(3)	SCOPE OF THE MEL The MEL should cover requirements of following Approvals as applicable to the type of operations: ❒ NAT HLA (former MNPS) ❒ RVSM ❒ ETOPS ❒ LVO ❒ Electronic Flight Bags EFBs ❒ Transport of Dangerous Goods DG ❒ PBN RNP AR APCH ❒ PBN RNP 0.3 Helicopter ❒ Single Engine Turbine Operations Part-CAT SET IMC ❒ Helicopter Night Vision Imaging Systems NVIS ❒ Helicopter Hoist Operations HHO ❒ Helicopter Emergency Medical Services HEMS ❒ Helicopter Offshore Operations HOFO Other Approvals which should be covered by the MEL if applicable: ❒ Steep Approach Operations ❒ Operations with Increased Bank Angle ❒ Short Landing Operations ❒ Maximum Distance from Adequate Aerodrome ❒ Helicopter Operations Over Hostile Environment ❒ Helicopter Operations to/from Public Interest Sites Examples of operations carried out by the operator in accordance with ORO.AOC.125 may be: ❒ (1) crew training ❒ (2) positioning flights ❒ (3) demonstration flights When an aircraft has installed equipment which is not required for the operations conducted, the operator may wish to delay rectification of such items for an indefinite period. Such cases are considered to be out of the scope of the MEL, therefore modification of the aircraft is appropriate and deactivation, inhibition or removal of the item should be accomplished by an appropriate approved modification procedure.		❑ ok ❑ not ok

1.9 Multiple Inoperative Items

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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 items shall also be considered. Wherever possible, account has been taken in the 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 shall be considered.

Note: The simultaneous application of two MMEL items is prohibited when one is used as a mitigation means to justify the other.

1.10 The Impact of an Airworthiness Directive

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If the manufacturer or type approval holder issues an airworthiness directive (AD), such an AD may produce additional restrictions on top of the existing restrictions published in the MEL and MMEL.

The Part-CAT, -NCC or -SPO operator has to observe such additional restrictions and shall communicate them imediately via the defined channels to its flight crews and affected maintenance personnel. If an AD has been processed and the MMEL is revised by the type approval holder, the operator also has to adopt the changes in due time in his own MEL.

1.11 Preamble

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The purpose of the MEL Preamble is to provide direction to company personnel on the philosophy and use of the MEL. An example MEL preamble which is acceptable for use by an operator is published in GM5 MMEL.120.

A preamble should contain considerations on the purpose and limitations, the utilisation, limitations on multiple inoperative items, rectification interval extension procedures for category B,C,D items, definitions and, if appropriate, clarifying notes which adequately reflect the scope, extent and purpose of the minimum equipment list.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list AMC1 ORO.MLR.105(d)(1)	MEL PREAMBLE The MEL preamble should: (a) reflect the content of the MMEL preamble as applicable to the MEL scope and extent; (b) contain terms and definitions used in the MEL; (c) contain any other relevant specific information for the MEL scope and use that is not originally provided in the MMEL; (d) provide guidance on how to identify the origin of a failure or malfunction to the extent necessary for appropriate application of the MEL; (e) contain guidance on the management of multiple unserviceabilities, based on the guidance given in the MMEL; and (f) contain guidance on placarding of inoperative items to inform crew members of equipment condition, as appropriate. In particular, when such items are accessible to the crew during flight, the control(s) and indicator(s) related to inoperative unit(s) should be clearly placarded.		❑ ok ❑ not ok

Operators should include guidance in the MEL how to deal with any failures which occurs between the commencement of the flight as moving under own power and the start of the take-off.

1.12 Rectification Interval Categories

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The maximum time an aircraft may be operated between the deferral of an inoperative item and its rectification will be specified in the MEL. Non-safety related equipment such as reading lights and entertainment units need not be listed. However, if they are listed, they must include a rectification interval category. These items may be given a ‘D’ category rectification interval provided any applicable (M) procedure (in the case of electrically supplied items) is applied.

The applicable Rectification Interval Categories are defined in the CS MMEL and are also valid for the operators MEL.

Category A

No standard interval is specified, however, items in this category shall be rectified in accordance with the conditions stated in the MMEL. Whenever the time interval 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 3 (three) consecutive calendar days, excluding the day of discovery.

Category C

Items in this category shall be rectified within 10 (ten) consecutive calendar days, excluding the day of discovery.

Category D

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

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list GM1 ORO.MLR.105(e);(f) Minimum equipment list CS MMEL.130	RECTRIFICATION INTERVAL (RI) A rectification interval is established for each MMEL item in accordance with the following categories: **Category A:** No standard interval is specified; however, items in this category shall be rectified in accordance with the conditions stated in the MMEL. ❒ (1) Where a time period is specified in calendar days or flight days, the interval excludes the day of discovery. ❒ (2) 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 3 calendar days, excluding the day of discovery. **Category C:** Items in this category shall be rectified within 10 calendar days, excluding the day of discovery. **Category D:** Items in this category shall be rectified within 120 calendar days, excluding the day of discovery. Items in this category meet the following criteria: ❒ (1) the absence of the item does not adversely affect crew workload; ❒ (2) the crew do not rely on the function of that item on a routine or continuous basis; and ❒ (3) the crew's training, subsequent habit patterns and procedures do not rely on the use of that item.		❑ ok ❑ not ok

1.13 Extension of Rectification Interval

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Procedures for the extension of rectification intervals should only be applied under certain conditions, such as a shortage of parts from manufacturers or other unforeseen situations (e.g. inability to obtain equipment necessary for proper troubleshooting and repair), in which case the operator may be unable to comply with the specified rectification intervals.

The process for applying an extension on the Rectification Interval shall be described within the continuing airworthiness maintenance exposition (CAME).

Maximum allowable one time extensions by the operator or organisation:

Note: A one-time extension of the rectification intervals of category B, C and D is allowed.

No second extension may be granted by the operator. In the case that a second extension becomes necessary, the continuing airworthiness manager (CAM) shall contact the FOCA for an assessment and the application of a second extension.

The extension of the rectification interval is, as a maximum, of the same duration as the rectification interval specified in the MEL. The rectification interval extension is not used as a normal means of conducting MEL item rectification and is used only when events beyond the control of the operator have precluded rectification.

A description of specific duties and responsibilities for controlling extensions is established by the operator. The competent authority is notified of any extension of the applicable rectification interval and a plan to accomplish the rectification at the earliest opportunity is established.

The operator shall establish the operational and maintenance procedures referenced in the MEL taking into account the operational and maintenance procedures referenced in the MMEL. These procedures shall be part of the operator's manuals or the MEL.

The operator shall amend the operational and maintenance procedures referenced in the MEL after any applicable change to the operational and maintenance procedures referenced in the MMEL.

Unless otherwise specified in the MEL, the operator shall complete the operational and maintenance procedures referenced in the MEL when planning for and/or operating with the listed item inoperative prior to operating with the listed item inoperative.

Subject/Regulation	Standard	Operator documentation/ evidence	FOC A
Minimum equipment list ORO.MLR.105	(f) Subject to approval of the competent authority, the operator may use a procedure for the one time extension of category B, C and D rectification intervals, provided that: ❒ (1) the extension of the rectification interval is within the scope of the MMEL for the aircrafttype; ❒ (2) the extension of the rectification interval is, as a maximum, of the same duration as the rectification interval specified in the MEL; ❒ (3) the rectification interval extension is not used as a normal means of conducting MEL item rectification and is used only when events beyond the control of the operator have precluded rectification; ❒ (4) a description of specific duties and responsibilities for controlling extensions is established by the operator; ❒ (5) the competent authority is notified of any extension of the applicable rectification interval; and ❒ (6) a plan to accomplish the rectification at the earliest opportunity is established.		❑ ok ❑ not ok

Minimum Equipment List AMC1 ORO.MLR.105(f)	RECTIFICATION INTERVAL EXTENSION (RIE) - OPERATOR PROCEDURES FOR THE APPROVAL BY THE COMPETENT AUTHORITY AND NOTIFICATION TO THE COMPETENT AUTHORITY (a) The operator's procedures to address the extension of rectification intervals and ongoing surveillance to ensure compliance should provide the competent authority with details of the name and position of the nominated personnel responsible for the control of the operator's rectification interval extension (RIE) procedures and details of the specific duties and responsibilities established to control the use of RIEs. (b) Personnel authorising RIEs should be adequately trained in technical and/or operational disciplines to accomplish their duties. They should have necessary operational knowledge in terms of operational use of the MEL as alleviating documents by flight crew and maintenance personnel and engineering competence. The authorising personnel should be listed by appointment and name. (c) The operator should notify the competent authority within 1 month of the extension of the applicable rectification interval or within the appropriated timescales specified by the approved procedure for the RIE. (d) The notification should be made in a form determined by the competent authority and should specify the original defect, all such uses, the reason for the RIE and the reasons why rectification was not carried out within the original rectification interval.		❑ ok ❑ not ok

1.14 Technical Ferry Flight – Non-revenue Flight with a Permit to Fly (PtF)

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Should the malfunction be of such a nature that it is not possible to repair it or to bring it back inside the limits of the MEL or the MMEL and therefore the Certificate of Airworthiness may not be in force, a Permit to Fly may be obtained for a non-commercial flight without passengers or supernoumerous crew on board.

The Permit to Fly may be obtained where it can be shown that associated restrictions and compensating factors enable the aircraft to carry out a flight or series of flights in a safe condition. To commence a flight under such conditions, the commander must be in possession of the approved FOCA/EASA Permit to Fly Form 21, and signed '*Sample Airlines*' flight release certificate (in accordance to CAME procedure). These documents are to be filed in the aircraft tech log for the duration of the flight. The ATC flight plan shall include "Non Revenue Technical Ferry Flight" in the appropriate ATC field.

In accordance with Part 21.A.711, the Competent Authority of the State of Registry is responsible for the issue of a PtF. Approved design or production organisations may also issue a PtF within limitations specified in Part 21.

To learn more on the requirements on how to obtain a permit to fly, consult the appropriate FOCA and/or EASA homepage which provide detailed information on the subject.

The operator shall notify the airport authorities at departure and arrival airport and all over flown countries when using a permit to fly for ferry flight.

Note: The commander is not authorized to commence a flight with less equipment than required by the MEL/MMEL unless he is in the (physical) possession of a permission PtF (Permit to Fly).

1.15 MEL Operations (O) and Maintenance (M) Procedures

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Dispatch with inoperative items is often only acceptable when special operational or maintenance procedures are followed before departure. Where the MMEL indicates that this is the case, the operator must establish appropriate procedures and describe them in the MEL.

Procedures recommended by the Type Certificate Holder in most cases can be adopted for this purpose, but the ultimate responsibility for providing acceptable procedures with the MEL rests with the operator/organisation. These procedures will ensure that an acceptable level of safety will be maintained. The Type Certificate Holder is required to produce operational and maintenance procedures such as Dispatch Deviation Guides, for use by operators. These procedures may be inserted into the appropriate MEL sections.

Operational and maintenance procedures are an integral part of the compensating conditions needed to maintain an acceptable level of safety, enabling the competent authority to formally approve the MEL.

The competent authority may request the presentation of fully developed (O) and/or (M) procedures in the course of the MEL approval process. Normally, operational procedures are used/applied by flight crew, however, other personnel may be qualified and authorised to perform certain (O) functions.

Normally, maintenance procedures (M) are accomplished by the maintenance personnel; However, other personnel may be qualified and authorised to perform certain functions in accordance with Commission Regulation (EU) No 1321/2014.

Operator's manuals may include the OM, the continued airworthiness management organisation manual or other documents. Operational and maintenance procedures, regardless of the document where they are contained, should be readily available for use by the flight crew when needed for the application of the MEL. Unless specifically permitted by a maintenance procedure, an inoperative item may not be removed from the aircraft.

Note: The (M) and (O) symbols shall be used to describe operational and manitenance procedures.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list AMC1 ORO.MLR.105(g)	OPERATIONAL AND MAINTENANCE PROCEDURES (a) The operational and maintenance procedures referenced in the MEL should be based on the operational and maintenance procedures referenced in the MMEL. Modified procedures may, however, be developed by the operator when they provide the same level of safety, as required by the MMEL. Modified maintenance procedures should be developed in accordance with Commission Regulation (EU) No 1321/2014. (b) Providing appropriate operational and maintenance procedures referenced in the MEL, regardless of who developed them, is the responsibility of the operator. (c) Any item in the MEL requiring an operational or maintenance procedure to ensure an acceptable level of safety should be so identified in the 'remarks' or 'exceptions' column/part/section of the MEL. This will normally be '(O)' for an operational procedure, or '(M)' for a maintenance procedure. '(O)(M)' means both operational and maintenance procedures are required. (d) The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator.		❑ ok ❑ not ok

1.16 Placarding and Labeling 'Inoperative'

Ch. 1.16 ISS 1 / REV 0 / 10.10.2019

Inoperative items should be placarded to inform crew members of equipment condition as appropriate. When they are accessible to the crew in flight, the control(s), and/or indicator(s) related to inoperative unit(s) or component(s) should be clearly placarded/labelled.

While the MEL for some items may require specific wording, the majority of items leave the placard wording and location to be determined by the operator. The operator shall provide the capability and instructions to the flight crew to ensure that the placard is in place prior to the aircraft being dispatched.

Note: Some MMELs indicate the need for a placard through the use of an asterisk. However, the exclusion of an asterisk in a MMEL does not preclude the requirement for placarding.

Placarding should be carried out in accordance with the placarding procedures established and set out in the operator's approved Maintenance Control Manual (MCM). The method of placarding should ensure that all inoperative items are placarded and placards are removed and accounted for when the defect is cleared. The equipment/system shall be placarded so as to inform the crew members of the inoperative condition(s) of the item. To the extent practicable, placards must be located as indicated in the MEL, or adjacent to the control or indicator affected.

Placards should be self adhesive. The placard may be in two parts. Part one should list a description of the defect and the defect control number and should be attached to the log book for crew reference. Part two should list the system affected and the defect control number and be fixed in the appropriate location (e.g. near a defective instrument or control). A MEL control sheet attached to the log book could serve the same purpose as part one above. If more than one placard is required for a MEL item, provision should be made to ensure that all placards are removed when the defect is cleared. If a defect occurs at a base where maintenance personnel are not available, the flight or cabin crew may install a temporary placard as required by the MEL. The aircraft may continue on a planned itinerary to a base where maintenance will rectify or re-defer in accordance with the approved deferral system.

1.17 Operations Outside the Scope of the MEL, but Inside the MMEL

Ch. 1.17 ISS 1 / REV 0 / 10.10.2019

Subject to a specific case-by-case approval by the competent authority, the operator may operate an aircraft with inoperative instruments, items of equipment or functions outside the constraints of the MEL but within the constraints of the MMEL, provided that the concerned instruments, items of equipment or functions are within the scope of the MMEL and the approval is not used as a normal means of conducting operations outside the constraints of the approved MEL. Such procedures are only to be used when events beyond the control of the operator have precluded the MEL compliance.

- A description of specific duties and responsibilities for controlling the operation of the aircraft under such approval is established by the operator.
- A plan to rectify the inoperative instruments, items of equipment or functions or to return operating the aircraft under the MEL constraints at the earliest opportunity is established when the defect has been rectified.
- The rectification interval has been extended as outlined above or subject to approval of the competent authority, the operator may use a procedure for the one time extension of category B, C and D rectification intervals provided that the extension of the rectification interval is within the scope of the MMEL for the aircraft type.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list ORO.MLR.105	(j) Subject to a specific case-by-case approval by the competent authority, the operator may operate an aircraft with inoperative instruments, items of equipment or functions outside the constraints of the MEL but within the constraints of the MMEL, provided that: ❒ (1) the concerned instruments, items of equipment or functions are within the scope of the MMEL ❒ (2) the approval is not used as a normal means of conducting operations outside the constraints of the approved MEL and is used only when events beyond the control of the operator have precluded the MEL compliance; ❒ (3) a description of specific duties and responsibilities for controlling the operation of the aircraft under such approval is established by the operator; and ❒ (4) a plan to rectify the inoperative instruments, items of equipment or functions or to return operating the aircraft under the MEL constraints at the earliest opportunity is established.		❑ ok ❑ not ok
Minimum equipment list AMC1 ORO.MLR.105 (j)	OPERATION OF AN AIRCRAFT WITHIN THE CONSTRAINTS OF THE MMEL - OPERATOR'S PROCEDURES FOR THE APPROVAL BY THE COMPETENT AUTHORITY ❒ (a) The operator's procedures to address the operation of an aircraft outside the constraints of the MEL but within the constraints of the MMEL and ongoing surveillance to ensure compliance should provide the competent authority with details of the name and position of the nominated personnel responsible for the control of the operations under such conditions and details of the specific duties and responsibilities established to control the use of the approval. ❒ (b) Personnel authorising operations under such approval should be adequately trained in technical and operational disciplines to accomplish their duties. They should have the necessary operational knowledge in terms of operational use of the MEL as alleviating documents by flight crew and maintenance personnel and engineering competence. The authorising personnel should be listed by appointment and name.		❑ ok ❑ not
Minimum equipment list GM1 ORO.MLR.105(j)	OPERATION OF AN AIRCRAFT WITHIN THE CONSTRAINTS OF THE MMEL - OPERATOR'S PROCEDURES FOR THE APPROVAL BY THE COMPETENT AUTHORITY Procedures for the operation of an aircraft outside the constraints of the MEL but within the constraints of the MMEL should only be applied under certain conditions, such as a shortage of parts from manufacturers or other unforeseen situations (e.g. inability to obtain equipment necessary for proper troubleshooting and repair), in which case the operator may be unable to comply with the constraints specified in the MEL.		❑ ok ❑ not

2 Step by Step Guidance on Establishing a MEL or Revising an Existing MEL

Ch. 2 ISS 1 / REV 0 / 10.10.2019

The following steps shall serve as a general guidance on how to define the content of a MEL.

2.1 Collection of Necessary Data

Ch. 2.1 ISS 1 / REV 0 / 10.10.2019

The operator should approach the aircraft manufacturer or type certificate holder or supplementary type certificate holder and request following documents:

- ❒ Order latest edition EASA approved MMEL (Master Minimum Equipment List) and check MMEL applicability with aircraft serial number from manufacturer.
- ❒ Order information related to the Type Certificate Data Sheet (TCDS) and Operational Suitability Data (OSD) which normally influences MEL content from manufacturer.
- ❒ Produce a list of all applicable operations specifications which may have to be addressed in the MEL.
- ❒ Produce a list of procedures which possibly have to be integrated into the MEL related to specific approvals (e.g. RVSM, ETOPS, LVO, NAT HLA, DG, EFB).
- ❒ Have the latest AFM/RFM or similar document from manufacturer at hand.

2.2 Producing a Gap Analysis and Developping Operational Guidance

Ch. 2.2 ISS 1 / REV 0 / 10.10.2019

Once all necessary documents are available, the operator shall start an assessment of the MMEL and look for sections within the MMEL which indicate that specific information should be published.

- If the MMEL states that ‘Alternate procedures should be established and used’ or any similar statement, the operators should define such procedures and implement them into the MEL operations guide. Any such procedures shall be subject to formal approval by the FOCA and should be integrated into the associated operations part. Normally alternative operations procedures are suffixed next to the ATA chapter number and system title with an O in brackets (O).
- If the MMEL states the condition ‘As required by (operational) regulations’, the operators should define under which conditions certain provisions (restrictive or permissive) expressed in the applicable section are to be applied (e.g. airspace requirements, allweather operations (Appendix B)). When the equipment is not required, it may be inoperative for the time specified by its rectification interval category.
- Filter the MMEL for elements which are installed on the specific aircraft. The MEL shall not refer to equipment which is not intalled on the aircraft or for which no certification is available.

2.3 Identifying MMEL Reference Including OSD data

Ch. 2.3 ISS 1 / REV 0 / 10.10.2019

When compiling a MEL, the operators should consult the applicable Type Certificate Data Sheet (TCDS) for the concerned aircraft type and variant including any Operatinal Suitability Data (OSD). Refer to Appendix A for samples.

2.4 Missing OSD Data or non-EASA Approved MMEL

Ch. 2.4 ISS 1 / REV 0 / 10.10.2019

Based on the fact that some existing MMELs are not subject to OSD data, the content of the MEL may be amended in accordance to the CS-MMEL.

If the MMEL is a non EASA MMEL, FOCA must approve its use as a baseline for compiling an MEL.

2.5 Remarks or Exceptions

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Remarks or exeptions include statements either prohibiting or allowing operation with a specific number of items inoperative, provisos (conditions and limitations), notes, (M) and/or (O) symbols, as appropriate for such operation.

2.6 General Notes on Variable Number of Equipment

Ch. 2.6 ISS 1 / REV 0 / 10.10.2019

If the MMEL states a certain 'Number Installed', it is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft configuration considered in the development of the MMEL. Should the number be a variable (e.g. passenger cabin items), or not applicable, a number is normally not required and a dashed line '-' is inserted instead**.**

Note: Where the MMEL shows a variable number installed, the MEL should reflect the actual number installed, as far as practical.

The 'Number required for dispatch' is the minimum number (quantity) of items required for operation provided the conditions specified are met. Should the number be a variable (e.g. passenger cabin items) or not applicable, a number is not required; a '-' is then inserted.

Note: Where the MMEL shows a variable number required for dispatch, the MEL should reflect the actual number required for dispatch, as far as practical, or an alternate means of configuration control approved by the competent authority.

2.7 MEL Structuring

Ch. 2.7 ISS 1 / REV 0 / 10.10.2019

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list ORO.MLR.105	(d) In addition to the list of items, the MEL shall contain: ❒ (1) a preamble, including guidance and definitions for flight crews and maintenance personnel using the MEL; ❒ (2) the revision status of the MMEL upon which the MEL is based and the revision status of the MEL; ❒ (3) the scope, extent and purpose of the MEL.		❑ ok ❑ not ok
Minimum equipment list AMC1 ORO.MLR.105(d)	MEL FORMAT (a) The MEL format and the presentation of items and dispatch conditions should reflect those of the MMEL. (b) The ATA 100/2200 Specification numbering system for MEL items is preferred. (c) Other formats and item numbering systems may be used provided they are clear and unambiguous.		❑ ok ❑ not ok

2.8 How to Submit a New Issue or a Revision to the FOCA for Prior Approval

Ch. 2.8 ISS 1 / REV 0 / 10.10.2019

When compiling a new MEL or revising an existing one, the operator should first collect the required data before starting elaboration of the document.

Following documents should be available and should be handed in to FOCA when applying for the formal approval of a new MEL or for any MEL revision:

- ❒ Draft of the new MEL. In case of a revision, the operator shall depict changes in the MEL.
- ❒ Latest EASA MMEL, or
- ❒ If no EASA MMEL available, latest TC holder MMEL (e.g. FAA MMEL), OSD data (if available) and TCDS
- ❒ STC if applicable
- ❒ Latest FCOM and AFM
- ❒ For NCC/SPO operator: MEL Approval Form
- ❒ For AOC Holder: PRA and signed compliance list

3 Initial and Recurrent MEL Training for Crew and Ground Personnel

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The operator/organisation shall establish initial and recurrent MEL training for Crew members include pilots, flight engineers, flight attendants and dispatchers.

The operator/organisation shall define an appropriate training cycle of the MEL recurrent training programme for crew members and ground personnel.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Operator responsibilities AMC1 ORO.GEN.110(e)	MEL TRAINING PROGRAMME (a) The operator should develop a training programme for ground personnel dealing with the use of the MEL and detail such training in the continuing airworthiness maintenance exposition (CAME) and OM as appropriate. Such training programme should include: ❒ (1) the scope, extent and use of the MEL; ❒ (2) placarding of inoperative equipment; ❒ (3) deferral procedures; ❒ (4) dispatching; and ❒ (5) any other operator's MEL related procedures. (b) The operator should develop a training programme for crew members and detail such training in the Operations Manual. Such training programme should include: ❒ (1) the scope, extent and use of the MEL; ❒ (2) the operator's MEL procedures; ❒ (3) elementary maintenance procedures in accordance with Commission Regulation (EU) No 1321/2014; and ❒ (4) pilot-in-command/commander responsibilities.		❑ ok ❑ not ok
Operator responsibilities GM1 ORO.GEN.110(e)	GROUND PERSONNEL For the purpose of the MEL training programme referred to in AMC1 ORO.GEN.110(e) ground personnel include maintenance personnel, flight dispatchers and operations officers.		❑ ok ❑ not ok

4 FOCA MEL Approval Process

Ch. 4 ISS 1 / REV 0 / 10.10.2019

Referring to ARO.OPS.205 Minimum equipment list approval, when receiving an application for initial approval of a minimum equipment list (MEL) or an amendment thereof from an operator, the FOCA will assess each item affected, to verify compliance with the applicable requirements, before issuing the approval.

The FOCA will evaluate and formally approve the operator's procedure for the extension of the applicable rectification intervals B, C and D, once the conditions specified in ORO.MLR.105(f) have been demonstrated by the operator and verified by the FOCA.

The FOCA may approve, on a case-by-case basis, the operation of an aircraft outside the constraints of the MEL but within the constraints of the master minimum equipment list (MMEL), if the conditions specified in ORO.MLR.105 are demonstrated by the operator and verified by the FOCA.

Following GM1 ARO.OPS.205 Minimum equipment list approval EXTENSION OF RECTIFICATION INTERVALS, the FOCA will verify that the operator does not use the extension of rectification intervals as a means to reduce or eliminate the need to rectify MEL defects in accordance with the established category limit. The extension of rectification intervals should only be considered valid and justifiable when events beyond the operator's control have precluded rectification.

Subject/Regulation	Standard	Operator documentation/ evidence	FOCA
Minimum equipment list approval ARO.OPS.205	❒ (a) When receiving an application for initial approval of a minimum equipment list (MEL) or an amendment thereof from an operator, the competent authority shall assess each item affected, to verify compliance with the applicable requirements, before issuing the approval. ❒ (b) The competent authority shall approve the operator's procedure for the extension of the applicable rectification intervals B, C and D, if the conditions specified in ORO.MLR.105(f) are demonstrated by the operator and verified by the competent authority. ❒ (c) The competent authority shall approve, on a case-by-case basis, the operation of an aircraft outside the constraints of the MEL but within the constraints of the master minimum equipment list (MMEL), if the conditions specified in ORO.MLR.105 are demonstrated by the operator and verified by the competent authority		❑ ok ❑ not ok
Minimum equipment list approval GM1 ARO.OPS.205	EXTENSION OF RECTIFICATION INTERVAL ❒ The competent authority should verify that the operator does not use the extension of rectification intervals as a means to reduce or eliminate the need to rectify MEL defects in accordance with the established category limit. The extension of rectification intervals should only be considered valid and justifiable when events beyond the operator's control have precluded rectification.		❑ ok ❑ not ok

5 Appendix A – OSD Samples

Ch. 5 ISS 1 / REV 0 / 10.10.2019

Following TCDS samples show the references to OSD which may be found in the data sheets of the respective type.

5.1 Example A

Ch. 5.1 ISS 1 / REV 0 / 10.10.2019

Extract from a TCDS of Airbus A320:

V Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate EASA.A.064 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis and as documented in A320 MMEL reference "MMEL STL11000" at the latest applicable revision.

b. Required for entry into service by EU operator.

5.2 Example B

Ch. 5.2 ISS 1 / REV 0 / 10.10.2019

Extract from TCDS of AW169:

II. OSD Elements

1. MMEL

AW169 Master Minimum Equipment List - MMEL, Doc.169F0270Q003, issue A dated 16/07/2015, EASA approved on 21 July 2015 or later approved revisions

6 Appendix B – Sample of an Equipment List Related to Airspace

Ch. 6 ISS 1 / REV 0 / 10.10.2019

When having to judge airspace and or Part-SPA requirements related to inoperative systems or components, the operator may produce a matrix or similar means for quick reference enabling the user a fast and reliable checking of the minum equipment necessary for individual sections of flights.

The table represents various specific approvals with associated system requirements.

This could be a user friendly way of depicting the relation of airspace functional requirements and minimum operational equipment.

	LIST OF CONDITIONS	PRECISION		NON PRECISION			
		CAT I	CAT II (BC)	NPA non APV	RNP APPROACH		
					VNAV	VNAV LNAV	LPV
DH / RVR	Decision Height (ft) (lowest)	200	100	250'	250	250	200
	RVR (m)	550	300	n/a	n/a	n/a	n/a
WIND	Max. headwind component	OM-A	25	OM-A	OM-A	OM-A	OM-A
	Max. X-wind component AEO (steady)	35	20	30	30	30	30
	Max. tailwind component	10	10	10	10	10	10
AIRPORT	ILS operating status (Note 1)	CAT I	CAT II	n/a	n/a	n/a	n/a
	RWY-length increment	(Note 2)	(Note 2)	(Note 2)	(Note 2)	(Note 2)	(Note 2)
	Failed or downgraded equipment	Refer to OM-A 8.1 or OM-C "Effect on landing minima of downgraded ground equipment"					
SYSTEM REQUIREMENTS	Engines (Operating)	1	2	1	1	1	1
	Inertial Ref. System (IRS)	0	2	0	2	2	1
	Air Data Systems (ADS)	0	2	0	(Note 3)	(Note 3)	(Note 3)
	VHF/NAV Systems	1	(Note 4)	1	1	0	0
	VHF/COM Systems	1	1	1	0	0	0
	Radio Altimeters	0	1	0	1	1	1
	PDU (ADI and HSI)	0	(Note 3)	0	(Note 3)	(Note 3)	(Note 3)
	MDU	0	(Note 6)	0	1	1	1
	RTU	0	2	0	1	1	1
	SFD	0	1	0	1	1	1
	EGPWS/TAWS	No	No	No	No	No	No
	GPS	No	No	No	Yes	Yes	GPS
	Autopilot	No	Yes	No	No	No	No
	Autopilot disengage systems	No	Yes	No	No	No	No
	Flight Director System (FD)	0	2	0	0	0	0
	FMS	0	0	0	(Note 9)	(Note 9)	(Note 9)
	Windscreen heating	0	(Note 5)	0	0	0	0
	Valid FMS Navigation DB	No	No	No	Yes	Yes	Yes
	Predictive RAIM	No	No	No	Yes	Yes	No

End of GM/INFO