NOTICE OF PROPOSED AMENDMENT (NPA) 2012-09

DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION SAFETY AGENCY

on Certification Specifications and Guidance Material
related to Generic Master Minimum Equipment List
for other-than-complex motor-powered aeroplanes

'CS GENERIC MMEL for other-than-complex motor-powered aeroplanes'

EXECUTIVE SUMMARY

In accordance with the additional requirements for air operations for commercial purposes and operation of complex motor-powered aircraft laid down in Annex IV to Article 8 of the Basic Regulation, an operator must establish a Minimum Equipment List (MEL) or equivalent document based on the Master Minimum Equipment List (MMEL), if available.

This requirement for commercial operations and operation of complex motor-powered aircraft has been transposed in the Implementing Rules for Air Operations through article ORO.MLR.105 establishing the need of an MEL based on the MMEL for the type approved by EASA in accordance with Part-21. The possibility of establishing an MEL on a voluntary basis for non-commercial operations of other-than-complex motor-powered aeroplanes has also been foreseen in the Implementing Rules for Air Operations through article NCO.GEN.155.

In addition, according to Subpart D of Part-M, an aircraft cannot be dispatched with defects unless deferred by authorised certifying staff or when the pilot uses an approved MEL.

Following these considerations EASA introduces the CS-GENERIC-MMEL for other-than-complex motor-powered aeroplanes with the aim of assisting the type certificate holder in developing the Master Minimum Equipment List (MMEL).

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A. Explanatory Note

I. General

1. The purpose of this Notice of Proposed Amendment (NPA) is to develop a Decision on the Certification Specifications for Generic Master Minimum Equipment List (MMEL) and related Guidance Material (GM). The scope of this rulemaking activity is outlined in the Terms of Reference (ToR) for task 21.039 and is described in more detail below.

2. The European Aviation Safety Agency (hereafter referred to as the 'Agency') is directly involved in the rule-shaping process. It assists the Commission in its executive tasks by preparing draft regulations, and amendments thereof, for the implementation of the Basic Regulation[1] which are adopted as 'Opinions' (Article 19(1)). It also adopts Certification Specifications, including Airworthiness Codes and Acceptable Means of Compliance and Guidance Material to be used in the certification process (Article 19(2)).

3. When developing rules, the Agency is bound to follow a structured process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as the 'Rulemaking Procedure'[2].

4. This rulemaking activity is included in the Agency's Rulemaking Programme for 2012. It implements rulemaking task 21.039(j) (RMT.0109) CS-GENERIC-MMEL for other-than-complex motor-powered aeroplanes.

5. The text of this NPA has been developed by the Agency. It is submitted for consultation of all interested parties in accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.

6. The proposed specifications have taken into account the development of European Union and international law (ICAO), and the harmonisation with the rules of other authorities of the European Union's main partners as set out in the objectives of Article 2 of the Basic Regulation. The proposed rule:

   — takes into account the proposed amendments to Part-21 related to Operational Suitability Data (OSD) and future air operations implementing rules;

   — ensures harmonisation with the applicable rules of FAA and TCCA.

II. Consultation

7. To achieve optimal consultation, the Agency is publishing the draft decision of the Executive Director on its website. Comments should be provided within 3 months in accordance with Article 6(4) of the Rulemaking Procedure.

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[1] Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.03.2008, p. 1).

[2] Management Board decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material (Rulemaking Procedure), EASA MB No 08-2007, 13.6.2007. Decision as last amended and replaced by EASA MB Decision No 01-2012, 13.3.2012.

8. Please submit your comments using the **automated Comment-Response Tool (CRT)** available at **http://hub.easa.europa.eu/crt/**.[3]

9. The deadline for the submission of comments is the **16th of November 2012.**

III. Comment-Response Document (CRD)

10. All comments received in time will be responded to and incorporated in a Comment-Response Document (CRD). The CRD will be available on the Agency's website and in the Comment-Response Tool (CRT).

IV. Content of the draft decision

11. Currently, the approval of the Master Minimum Equipment List (MMEL) is the responsibility of the National Aviation Authorities (NAAs). To promote uniformity, Joint Aviation Authorities (JAAs) decided to follow a single approval process acceptable to all as part of the Joint Operations Evaluation Board (JOEB). Each JOEB was established on a case-by-case basis at the request of the applicant to review, amongst other elements, the MMEL. The outcome being an MMEL recommended to the NAAs for approval.

12. The Basic Regulation provided for the Agency's responsibility to approve relevant information necessary for the safe operation of a specific aircraft type. This information relates to type specific elements for pilots, cabin crew, maintenance and includes the Master Minimum Equipment List (MMEL) and Flight Synthetic Training Devices (FSTD). The information is to be concluded and approved under Operational Suitability Data (OSD) that will complement the TC. The applicant for an aircraft type certificate will obtain approval of operational suitability data before the aircraft is operated by a European Union operator. Once the OSD is issued, the approved elements will be used by the operators of the particular aircraft type or training organisations to establish the appropriate training programmes or MEL.

13. Task 21.039 was set up to develop the Implementing Rules, associated Certification Specifications, Acceptable Means of Compliance and Guidance Material for the existing JOEB tasks to be transferred into the new EASA regulatory framework. The working method selected by the Agency on the advice of its rulemaking advisory bodies (the Safety Standards Consultative Committee (SSCC) and the Advisory Group of National Authorities (AGNA)) was the use of a rulemaking group and further creating subgroups for the development of the individual CSs such as CS-GENERIC-MMEL.

14. A GENERIC MMEL subgroup was created by the main group to address the MMEL task and members of the main group were invited to participate or nominate participants in this subgroup activity. The subgroup members came from European and foreign OEMs and European NAAs.

15. The GENERIC MMEL subgroup was tasked with taking the current Guidance Material in the field of MMEL, NPA CS-MMEL, FAA Single Engine Airplanes MMEL and TCCA MMEL Guidance Book and use it as far as possible to create CS-GENERIC-MMEL.

16. The subgroup went through the proposed text based on the reference material. In particular the discussions emphasised on the level of relief to be given to operators under Part-NCO (rules for non-commercial operations) and Part-SPO (rules for commercial and non-commercial specialised operations) which had to guarantee the highest safety level possible without imposing too much burden.

[3] In case the use of the Comment-Response Tool is prevented by technical problems please report them to the CRT webmaster (crt@easa.europa.eu).

17. The subgroup also acknowledged that the CS text should be the simplest possible with the most straightforward application as the vast majority of the applicants would be unfamiliar with the notion of MMEL.

18. In addition to that, consideration has been proposed to help further harmonisation, ensure a level playing field between applicants, safety considerations, new complex and highly integrated designs and airworthiness considerations. The outcome of this work has been the basis for the current proposal.

19. The Agency acknowledged that although the draft GENERIC MMEL is suitable for many aircraft in the other-than-complex category, it is not well tailored to the real leisure aircraft such as very light aeroplanes (VLA), light sport aeroplanes (LSA), very light rotorcraft (VLR), sailplanes, powered sailplanes, balloons and ELA2 airships. So for these aircraft another approach is proposed to deal with the requirement to establish an MMEL. For these aircraft the Agency considers that the list of required equipment as included in the TCDS, in combination with equipment required for the flight by the associated operational implementing rules, establishes the list of equipment that must be operative for all flights. Other equipment may be inoperative and this constitutes the MMEL. Design approval applicants for these aircraft will therefore not be required to establish an MMEL. This principle is proposed to be included in Guidance Material to Part-21, in relation to the requirement to establish an MMEL.

B. Draft rules

I. Draft decision — CS GENERIC MASTER MINIMUM EQUIPMENT LIST

CS GEN.MMEL.100 Applicability

This Certification Specification applies to other-than-complex motor-powered aeroplanes except from very light aeroplanes (VLA) and light sport aeroplanes (SLA).

CS GEN.MMEL.105 Definitions

For the purpose of this CS, the following terms mean:

'Applicant': an applicant for, or a holder of, a type certificate (TC), change approval or supplemental type certificate (STC), applying for the approval by the European Aviation Safety Agency (hereafter referred to as the 'Agency') of the MMEL.

'Inoperative': an item which does not accomplish its intended purpose or is not consistently functioning within its approved operating limits or tolerances.

'Item': a component, instrument, equipment, system or function.

CS GEN.MMEL.107 Status of provided data

The MMEL and associated operational and maintenance procedures are part of the Operational Suitability Data (OSD) as defined in Part-21 and means are to be provided to clearly distinguish the mandatory data from the non-mandatory data for the end user. Data provided by the applicant is presented as mandatory or non-mandatory (recommendations) for the end user.

The MMEL content as defined in CS GEN.MMEL.125 is considered as data required from the applicant and mandatory for the end user.

The operational and maintenance procedures referenced in the MMEL are considered as non-mandatory (recommendations) data for the end user.

CS GEN.MMEL.110 MMEL purpose

The MMEL is a document that lists the items which may be temporarily inoperative associated with special operating conditions, limitations or procedures as applicable, for a specific aeroplane type or model.

CS GEN.MMEL.115 Addition of MMEL items

For items installed (other than non-safety related items) that are not listed in the Generic MMEL, yet the applicant wishes to provide relief for his/her operators, may be justified for inclusion into their MMEL.

The justifications are based on the method given in the CS-MMEL Book 1 SUBPART C.

CS GEN.MMEL.120 Types of operation

The MMEL covers all the types of operation for which the aeroplane type or model is certified.

CS GEN.MMEL.125 Format and content of the MMEL

The MMEL contains the following:

(a) a cover page;

(b) a control page to be signed by the Agency with the approval status, including date of approval and effective date;

(c) a 'general' section with:

(1) a table of contents,

(2) a list of effective pages,

(3) a revision history including a detailed summary of changes at last revision;

(d) a preamble;

(e) definitions and, if appropriate, explanatory notes which adequately reflect the scope, extent and purpose of the item list;

(f) an 'item list' section.

CS GEN.MMEL.130 MMEL cover page, control page and general section

The MMEL cover page, control page and general section are prepared in accordance with Appendix I.

CS GEN.MMEL.135 Preamble

The MMEL preamble is given in Appendix II.

CS GEN.MMEL.140 Definitions and explanatory notes

The MMEL contains sufficient definitions and explanatory notes to provide the user (this is primarily the operator when compiling the MEL) with a full and proper understanding of the intent and purpose of the items it contains.
Appendix III to this CS contains the definitions that are common to all MMELs. Other definitions that are specific to particular or individual aeroplane types are added as necessary. Also explanatory notes are provided in sufficient detail wherever the intent and purpose of a term or phrase or abbreviation, etc., is necessary or advisable.

CS GEN.MMEL.145 Item list

The generic MMEL includes all items that are permitted to be inoperative.

The MMEL item list is generated by the applicant directly from the generic MMEL by selecting from the list in Appendix IV the items in accordance with their applicability to the aeroplane type.

For the selected items, the applicant verifies they do not deviate from AFM Limitations and Airworthiness Directives.

The applicant also verifies that relief is not given for systems required to fulfil emergency procedures (e.g. VHF Communication Systems).

Consistency of terminology and identification means should be maintained, as far as possible, with the existing aeroplane documentation.

CS GEN.MMEL.150 Operational and maintenance procedures

The operational and maintenance procedures required by the items selected from the item list are developed by the applicant and made available to the affected operators.

APPENDICES

Appendix I — MMEL cover page, control page and general section

1. Cover page:

[Type Certificate Holder Name]

[Aeroplane Type]

MASTER MINIMUM EQUIPMENT LIST

ORIGINAL: [Effective date]

(and if applicable)
REVISION [Number]: [Effective date]

[Type Certificate Holder document reference]

2. Control page:

MASTER MINIMUM EQUIPMENT LIST

Model:
[Aeroplane model]

(and if applicable)
[Aeroplane commercial name]

Engine(s):
[Type of engine(s)]

ORIGINAL ISSUE: [Effective date]

(and if applicable)
REVISION [Number]: [Effective date]

This Master Minimum Equipment List (MMEL) is issued by [Type Certificate Holder name] at the above revision and is approved by the European Aviation Safety Agency (EASA) as the basis for the preparation and approval of individual operator's Minimum Equipment List (MEL) for aircraft of this model, as certified by and operated under the jurisdiction of EASA Member States' national authorities.

Issue: [Revision number]

Date: [Date of approval by the Agency]

Signed by: [Agency's signature and stamp]

3. Table of contents:

GENERAL

TABLE OF CONTENTS

[Table of contents with page numbering]

4. List of effective pages:

LIST OF EFFECTIVE PAGES

Section	Page No	Revision No	Applicability
Cover page			
GENERAL			
ITEM LIST			
[ATA chapter]			

5. List of revisions:

LIST OF REVISIONS

ORIGINAL ISSUE: [Date of issue]

(If applicable)
REVISION [Number]: [Date of issue]

Purpose of revision [Number]:

[Short description of the main purpose of the revision]

GENERAL

[Changes done in the GENERAL section]

ITEM LIST

[Changes done in the ITEM LIST section]

Appendix II — Preamble

PREAMBLE

Introduction

The following is applicable for operators under European air operations regulations (Part-CAT, Part-NCO, Part-SPO). Paragraph 1.c.2 of Annex I to Article 5 (Essential requirements for airworthiness) of Regulation (EC) No 216/2008 (the 'Basic Regulation') requires that all equipment installed on an aeroplane required for type certification or by operating rules shall be operative. However, paragraph 2.a.3 of Annex IV to Article 8 (Essential requirements for air operations) of the Basic Regulation also allows the use of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary in the interest of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into aeroplanes, operation of every system or installed items may not be necessary when the remaining operative equipment can provide an acceptable level of safety.

Purpose and limitations

This Master Minimum Equipment List (MMEL) is developed by the Type Certificate Holder and approved by the Agency. This MMEL includes those items related to airworthiness and air operations regulations and other items the Agency finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations; it does not contain obviously required items such as wings, flaps, and rudders. In order to maintain an acceptable level of safety the MMEL establishes limitations on the duration of and conditions for operation with inoperative items. Unless specifically permitted by this MMEL, an inoperative item may not be removed from the aeroplane.

Utilisation

The MMEL is the basis for the development of individual operator's MEL which takes into consideration the operator's particular aeroplane equipment configuration and operational conditions.

An operator's MEL may differ in format from the MMEL, but shall not be less restrictive than the MMEL. The individual operator's MEL, when approved or declared as applicable, allows operation of the aeroplane with inoperative items for a certain period of time until rectification can be accomplished.

The MEL cannot deviate from Airworthiness Directives, Safety Directives or any other additional mandatory requirements. It is important to remember that all items related to airworthiness and operational regulations of the aeroplane not listed on the MMEL shall be operative. Also all items installed on the aeroplane, except for non-safety related items, which are in excess of what is required and are not listed on the MMEL, shall be operative.

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as prescribed in this MMEL shall be specified in the MEL to ensure that an acceptable level of safety is maintained. It is important that rectifications be accomplished at the earliest opportunity.

Where O and M procedures are listed in the MMEL it is the operator's responsibility to develop them with respect to the numbering system used by the aeroplane manufacturer. These procedures should be developed in accordance with the air

operations regulations and continuing airworthiness regulations (Regulation (EC) No 2042/2003), using data provided by the aeroplane manufacturer's flight manual, maintenance manuals, recommendations or service information.

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 may be deferred following the MEL or other approved means of compliance acceptable to the competent authority and the Agency prior to further operation. MEL conditions and limitations do not relieve the operator from determining that the aeroplane is in a condition for safe operation with items inoperative.

Prior to operation any inoperative item should be made known to the crew in accordance with the continuing airworthiness requirements. For commercial air transport acceptance by the crew is required.

Operators shall establish a controlled and sound rectification programme including the parts, personnel, facilities, procedures and schedules to ensure timely rectification.

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 this MMEL is required.

Multiple inoperative items

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 this MMEL of multiple inoperative items. However, it is unlikely that all possible combinations of this nature have been accounted for. Therefore, when operating with multiple inoperative items, the inter-relationships between those items and the effect on aeroplane operation and crew workload shall be considered.

Rectification intervals

For commercial operations under Part-CAT or Part-SPO, the operator may be allowed by his/her competent authority a one-time extension of the applicable rectification intervals B, C or D for the same duration as that specified in his/her MEL.

This extension policy is only applicable when the applicant has taken it into account during the development of this document.

For operations under Part-NCO, the rectification intervals indicated in the item list are only recommended and should be taken as guidelines as the maximum period of time during which an item would remain inoperative. It is important that repairs be accomplished at the earliest opportunity.

Appendix III — Definitions and explanatory notes

(a) The systems in the MMEL are described and identified in accordance with the numbering system used in the aeroplane manufacturer's documentation.

(b) The MMEL item list provides the list of pieces of equipment/system/function which may be inoperative prior to dispatch. Items are gathered by relevant chapter and provided under a table format. The structure of the MMEL item list table is as follows:

(1) **System and sequence numbers item** — column #1 — details equipment, system, component or function listed.

The applicability for each item may vary based on the type of operation, and is given, when needed, as follows:

(CAT): for Commercial Air Transport, regulated by Part-CAT;

(SPO): for Specialised Operations, regulated by Part-SPO;

(NCO): for Non-Commercial Operations, regulated by Part-NCO;

(ALL): for all above types of operations.

(2) Rectification interval — column #2 — Inoperative items or components, deferred in accordance with the MEL, must be rectified at or prior to the rectification intervals established by the following letter designators:

Category A

No standard interval is specified; however, items in this category shall be rectified in accordance with the conditions stated in the MMEL.

Where a time period is specified in days, the interval excludes the day of discovery.

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

Category B

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

Category C

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

Category D

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

(3) **Number installed** — column #3 — is the number (quantity) of items normally installed in the aeroplane. This number represents the aeroplane configuration considered in developing this MMEL. Should the number be a variable or not applicable, a number is not required; a '–' is then inserted.

Where the MMEL shows a variable number installed, the MEL should reflect the actual number installed, if applicable.

(4) **Number required for dispatch** — column #4 — is the minimum number (quantity) of items required for operation provided the conditions specified are met. Should the number be a variable or not applicable, a number is not required; a '–' is then inserted.

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

(5) **Remarks or exceptions** — column #5 — include statements either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations), notes, (M) and/or (O) symbols, as appropriate for such operation.

'(O)' indicates a requirement for a specific operations procedure which must be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorised to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's MEL or other documentation, endorsed by the operator and made available to the person(s) authorised to perform the task(s).

'(M)' indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorised to perform certain functions. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's MEL or other documentation, endorsed by the operator and made available to the person(s) authorised to perform the task(s).

'Notes' provide additional information for flight crew or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the dispatch conditions.

Placarding: each inoperative item must be placarded, as applicable, to inform and remind crew members and maintenance personnel of the items condition. To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the operator. These placards do not relieve tthe operator from the obligation of writing an inoperative item entry into the appropriate document, such as a logbook.

(c) A vertical bar (change bar) in the margin indicates a modification in the adjacent text for the current revision of that section only. The change bar is dropped at the next revision of that page.

(d) Applicability: when a variant of page is required for certain aeroplanes, the special applicability is indicated at the lower part of the relevant page as well as in the list of effective pages.

(e) Definitions for the purpose of this MMEL:

'Aeroplane Flight Manual (AFM)' is the document required for type certification and approved by the Agency.

'Alternate procedures are established and used' or similar statement, shall be taken to mean that alternate procedures (if applicable) to the affected process must be drawn up by the operator as part of the MEL approval process, so that they have been established before the MEL document has been approved. Such alternate procedures are normally included in the associated operations (O) procedure.

'Any in excess of those required by regulations' means that the item required by applicable legislation (e.g. Regulation Air Operations, Single European Sky legislation or applicable airspace requirements) must be operative and only excess equipment may be inoperative. When the item is not required, it may be inoperative for the time specified by its rectification interval category. Whenever this condition is used in the MMEL, the applicable regulations for the intended routes and the resulting dispatching restrictions need to be clarified at operator's MEL level.

'As required by applicable regulations' means that the listed item is subject to certain provisions (restrictive or permissive) expressed in the applicable legislation (Regulation Air Operations, Single European Sky legislation or applicable airspace requirements). When the item is not required, it may be inoperative for the time specified by its rectification interval category.

'Calendar day': a 24-hour period from midnight to midnight based on either UTC or local time, as selected by the operator. All calendar days are considered to run consecutively.

'Commencement of flight' is the point when an aeroplane begins to move under its own power for the purpose of preparing for take-off.

'Considered inoperative', as used in the dispatch conditions, means that the item must be treated for dispatch, taxi and flight purposes as though it were inoperative. The item shall not be used or operated until the original deferred item is repaired. Additional actions include: documenting the item on the dispatch release (if applicable), placarding, and complying with all remarks, exceptions, and related MMEL provisions, including any (M) and (O) procedures and observing the rectification interval.

'Daylight' corresponds to the period between the beginning of morning civil twilight and the end of evening civil twilight relevant to the local aeronautical airspace; or such other period, as may be prescribed by the appropriate authority.

'Day of discovery' means the calendar day that a malfunction was recorded in the aeroplane maintenance record/logbook.

'Deactivated and secured' means that the specified item must be put into an acceptable condition for safe flight.

'Flight' (for the purposes of this MMEL): a flight is the period of time between the moment when an aeroplane begins to move by its own means, for the purpose of preparing for take-off, until the moment the aeroplane comes to complete stop on its parking area, after subsequent landing (and no subsequent take-off).

'Item' means equipment, system, component or function.

'Icing conditions' means an atmospheric environment that may cause ice to form on the aeroplane or in the engine(s) as defined in the AFM. In the absence of any AFM limitations, icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +5°C.

'If installed' means that the item is either optional or is not required to be installed on all aeroplanes covered by the MMEL.

'Inoperative' means that the item does not accomplish its intended purpose or is not consistently functioning within its approved operating limits or tolerances.

'Is not used' in the dispatch conditions, remarks or exceptions for an MMEL item may specify that another item relieved in the MMEL 'is not used'. In such cases, crew members should not activate, actuate, or otherwise utilize that item under normal operations. It is not necessary for the operators to accomplish the (M) procedures associated with the item. However, operations-related provisions, (O) procedures and rectification interval must be complied with. An additional placard must be affixed, to the extent practical, adjacent to the control or indicator for the item that is not used to inform crew members that an item is not to be used under normal operations.

'Master Minimum Equipment List (MMEL)' means a document approved by the Agency that establishes the aeroplane items allowed to be inoperative under conditions specified therein for a specific type of aeroplane.

'Minimum Equipment List (MEL)' means a document approved by or declared to the competent authority as applicable that authorises an operator to dispatch an aeroplane with aeroplane items inoperative under the conditions specified therein.

'Visible moisture' means an atmospheric environment containing water in any form that can be seen in natural or artificial light; for example, clouds, fog, rain, sleet, hail, or snow.

Appendix IV — Item list

ATA 21 — Air conditioning

ATA CHAPTER: 21 Air conditioning					PAGE: 21-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
21-20-1	**Fresh air ventilation outlets**				
21-20-1A	(ALL)	C	–	1	Any in excess of one may be inoperative.
21-30-1	**Pressurisation controller**				
21-30-1A	(CAT)	C	–	0	(O) May be inoperative provided: (a) the flight is conducted unpressurised, and (b) the regulations requiring oxygen use are complied with. *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*
21-30-2B	(NCO/SPO)	D	–	0	(O) May be inoperative provided: (a) the flight is conducted unpressurised, and (b) the regulations requiring oxygen use are complied with. *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*
21-30-2	**Outflow/safety valves**				

ATA CHAPTER: 21 Air conditioning					PAGE: 21-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
21-30-2A	(CAT)	C	–	–	(M)(O) May be inoperative provided:(a) affected valve(s) is(are) secured OPEN or removed, (b) flight is conducted unpressurised, and (c) the regulations requiring oxygen use are complied with. *(M) Procedures must be established to secure the valve(s) open or remove it(them).* *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*
21-30-2B	(NCO/SPO)	D	–	–	(M)(O) May be inoperative provided: (a) affected valve(s) is(are) secured OPEN or removed, (b) flight is conducted unpressurised, and (c) the regulations requiring oxygen use are complied with. *(M) Procedures must be established to secure the valve(s) open or remove it(them).* *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*
21-30-3	**Cabin altitude indicator**				
21-30-3A	(ALL)	D	1	0	(O) May be inoperative provided: (a) the flight is conducted unpressurised, and (b) the regulations requiring oxygen use are complied with. *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*

ATA CHAPTER: 21 Air conditioning					PAGE: 21-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
21-30-4	**Cabin altitude warning system**				
21-30-4A	(ALL)	C	1	0	May be inoperative provided the flight is conducted at or below cabin altitude warning limit but not above 10 000 feet MSL.
21-30-4B	(ALL)	D	1	0	(O) May be inoperative provided: (a) the flight is conducted unpressurised, and (b) the regulations requiring oxygen use are complied with. *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*
21-30-5	**Cabin rate of climb indicator**				
21-30-5A	(ALL)	D	1	0	(O) May be inoperative provided: (a) the flight is conducted unpressurised, and (b) the regulations requiring oxygen use are complied with. *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*
21-30-6	**Differential pressure indicator**				
21-30-6A	(ALL)	D	1	0	(O) May be inoperative provided: (a) the flight is conducted unpressurised, and (b) the regulations requiring oxygen use are complied with. *(O) Procedures must be established to ensure the aeroplane is operated unpressurised.*
21-40-1	**Heating system**				
21-40-1A	(CAT/SPO)	C	–	0	May be inoperative.
21-40-1B	(NCO)	D	–	0	May be inoperative.

ATA CHAPTER: 21 Air conditioning					PAGE: 21-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
21-50-1	**Air conditioning system**				
21-50-1A	(CAT/SPO)	C	1	0	(M) May be inoperative. *(M) Procedures must be established to ensure the inoperative air conditioning system does not have any adverse effect on engine operation, pressurisation or instruments cooling.*
21-50-1B	(NCO)	D	1	0	(M) May be inoperative. *(M) Procedures must be established to ensure the inoperative air conditioning system does not have any adverse effect on engine operation, pressurisation or instruments cooling.*

Additional considerations:

- **21-20-1A Fresh air ventilation outlets:** Cockpit and cabin compartments must be suitably ventilated through an adequate supply of fresh air.
- For unpressurised flights, extended overwater operations may be restricted depending on the location of the outflow valves.

ATA 22 — Auto-flight

ATA CHAPTER: 22 Auto-flight						PAGE: 22-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions	
22-10-1	**Autopilot**					
22-10-1A	(SPO/NCO)	D	–	0	(M)(O) May be inoperative provided: (a) autopilot is deactivated as applicable, (b) AFM limitations are observed, and (c) operations do not depend upon its use. *(M) Procedures must be established to ensure the autopilot will not engage during the flight.* *(O) Procedures must establish any applicable restrictions (e.g. approach and landing minima, en-route operations, etc.).*	
22-10-1B	(CAT)	B	–	0	(M)(O) May be inoperative provided: (a) autopilot is deactivated as applicable, (b) the flight is conducted under VFR for single pilot operations, (c) AFM limitations are observed, and (d) operations do not depend upon its use. *(M) Procedures must be established to ensure the autopilot will not engage during the flight.* *(O) Procedures must establish any applicable restrictions (e.g. approach and landing minima, en-route operations, etc.).*	
22-10-2	**Autopilot disconnect functions — Quick release controls**					

ATA CHAPTER: 22 Auto-flight					PAGE: 22-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
22-10-2A	(ALL)	C	–	1	(O) Any in excess of one may be inoperative provided: (a) the operative one is on the pilot flying side, and (b) approach and landing minima do not require use of the autopilot. *(O) Procedures must establish any applicable restrictions (e.g. approach and landing minima, en-route operations, etc.).*
22-10-2B	(ALL)	B	–	0	May be inoperative provided autopilot is not used (refer to item 22-10-1).
22-10-4	**Yaw damper**				
22-10-4A	(ALL)	C	1	0	(M) May be inoperative provided yaw damper is independent and unrelated to autopilot operation. *(M) Procedures must be established to ensure no electrical or mechanical fault exists that would have an adverse effect on any flight control system.*
22-10-4B	(ALL)	C	1	0	May be inoperative provided autopilot is not used (refer to item 22-10-1).

Additional considerations:

- **22-10-1 Autopilot:** Any increase in crew workload has to be considered for the intended operations. Any additional limitations, such as flight duration, may result from this consideration.
- **22-10-1B Autopilot:** Depending upon the use of the autopilot in routine procedures, single pilot CAT operations may be restricted to day VMC only.
- **22-10-4 Yaw damper:** AFM limitations must be complied with, if any.

ATA 23 — Communications

ATA CHAPTER: 23 Communications						PAGE: 23-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions	
23-10-1	**Headsets**					
23-10-1A	(NCO)	D	–	0	May be inoperative or missing provided procedures do not depend upon its use.	
23-10-1B	(ALL)	D	–	–	Any in excess of one for each flight crew member may be inoperative or missing. *Note:* A headset consists of a communication device which includes two earphones to receive and a microphone to transmit audio signals to the aeroplane's communication system.	
23-10-2	**Audio selector panels**					
23-10-2A	(ALL)	D	–	–	Any in excess of one for each flight crew member may be inoperative or missing.	
23-10-2B	(ALL)	D	–	0	(O) May be inoperative provided: (a) the flight is conducted under VFR, and (b) alternate procedures are established and used for ensuring required communi-cation. *(O) Procedures must be established to ensure required communication.*	
23-10-3	**Flight crew compartment speakers**					
23-10-3A	(SPO/NCO)	C	–	0	May be inoperative provided one headset is operative and used by each flight crew member.	

ATA CHAPTER: 23 Communications					PAGE: 23-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
23-10-3B	(CAT)	C	–	0	May be inoperative provided: (a) one headset is operative and used by each flight crew member, and (b) a spare operative headset is readily available in the flight crew compartment.
23-10-4	**Handheld microphones**				
23-10-4A	(SPO/NCO)	C	–	0	May be inoperative provided one headset is operative and used by each flight crew member.
23-10-4B	(CAT)	C	–	0	May be inoperative provided: (a) one headset is operative and used by each flight crew member, and (b) a spare operative headset is readily available in the flight crew compartment.
23-10-5	**Stick/yoke mounted push-to-talk switches**				
23-10-5A	(NCO)	D	–	0	May be inoperative provided associated handheld microphone is operative.
23-10-5B	(SPO/CAT)	D	–	0	May be inoperative provided: (a) the flight is conducted under day VFR, and (b) associated handheld micro-phone is operative.
23-11-1	**Long range communication systems**				
23-11-1A	(ALL)	D	–	–	Any in excess of those required may be inoperative.
23-12-1	**VHF communication systems**				
23-12-1A	(ALL)	D	–	–	Any in excess of those required may be inoperative.
23-20-1	**Datalink**				
23-20-1A	(ALL)	D	–	0	May be inoperative provided that procedures do not require its use.

ATA CHAPTER: 23 Communications					PAGE: 23-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
23-30-1	**Public address system**				
23-30-1A	(ALL)	D	1	0	May be inoperative provided procedures do not depend upon its use.
23-30-1B	(ALL)	C	1	0	(O) May be inoperative provided alternate procedures are established and used. *(O) Procedures must be established to provide alternate means for communication between the flight crew compartment and the cabin, in normal and emergency situations.*
23-40-1	**Flight crew interphone system**				
23-40-1	(ALL)	D	-	-	Any in excess of those required may be inoperative.

Additional considerations:

- **23-10-2 Audio selection panels:** There may be components of the audio control panel inoperative; however, the panel is still adequate for flight. The item does not address sub-components, and it is considered the pilot-in-command's decision to dispatch with necessary equipment operative.
- **23-10-3 Flight crew compartment speakers:** It should be ensured that the affected flight crew compartment speaker is not used for crew intercommunication when smoke masks are used unless single pilot operations are conducted. Indeed, with smoke masks on, a typical installation has the pilot talking through the co-pilot's speaker and the co-pilot through the pilot's speaker. If there are emergency procedures (e.g. smoke) which require the crew to establish communication, then relief for both cannot be granted, but depending on flight test results relief for one may be possible.

  All aural alerts, messages and other communication which are normally routed through the flight crew compartment speakers should remain audible through the headsets.
- **23-30-1 Public address system:** 23-30-1B: The alternate procedures will have to be developed to account for any procedures based on the use of the public address system, particularly in areas such as lavatories.

ATA 24 — Electrical

ATA CHAPTER: 24 Electrical					PAGE: 28-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
24-40-1	**External power system**				
28-40-1A	(ALL)	D	1	0	May be inoperative.

ATA 25 — Equipment and furnishings

ATA CHAPTER: 25 Equipment and furnishings						PAGE: 25-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions	
25-11-1	**Flight crew compartment seats**					
25-11-1-1	**Power adjustments**					
25-11-1-1A	(ALL)	D	–	0	May be inoperative.	
25-11-1-2	**Manual adjustments**					
25-11-1-2-1	Horizontal					
25-11-1-2-1A	(ALL)	C	–	0	(M) May be inoperative provided: (a) the affected seat is secured and locked, and (b) the seat position when the seat is used allows a full travel of the flight controls. *(M) Procedures must be established to secure the seat position.*	
25-11-1-2-2	Vertical					
25-11-1-2-2A	(ALL)	C	–	0	May be inoperative provided the associated power adjustment of the affected seat is operative.	
25-11-1-2-2B	(ALL)	C	–	0	(M) May be inoperative provided: (a) the affected seat is secured or locked, and (b) the position is acceptable to the flight crew member. *(M) Procedures must be established to secure the seat position.*	
25-11-1-3	**Other adjustments except horizontal and vertical adjustments**					
25-11-1-3A	(ALL)	C	–	0	(M) May be inoperative provided: (a) the affected seat is secured or locked, and	

ATA CHAPTER: 25 Equipment and furnishings						PAGE: 25-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions	
					(b) the position is acceptable to the flight crew member. *Note:* If an inoperative armrest hinders an emergency evacuation or any other flight crew compartment duties, it should be removed. *(M) Procedures must be established to secure the seat position.*	
25-11-1-4	**Safety harnesses**					
25-11-1-4A	(ALL)	C	–	1	Any in excess of one may be inoperative provided: (a) the flight is conducted in single pilot operations, and ected seat is not occupied.	
25-11-1-5	**Crew seat armrest**					
25-11-1-5A	(ALL)	C	–	0	(M) May be inoperative provided: (a) it doesn't hinder emergency egress, and (b) it doesn't block access to the flight controls or restrict any other flight deck duties. *(M) Procedures must be established to remove an inoperative armrest if it may harm the crew member.*	
25-21-1	**Passenger seats**					
25-21-1A	(ALL)	D	–	–	(M) May be inoperative provided: (a) inoperative seat does not block an emergency exit, (b) inoperative seat does not restrict any passenger from access to the main aeroplane aisle, and (c) affected seat(s) are blocked and placarded 'DO NOT OCCUPY'.	

ATA CHAPTER: 25 Equipment and furnishings					PAGE: 25-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
					Note: A seat with an inoperative or missing occupant restraint system (seat belt, safety harness, as applicable) is considered inoperative. *(M) Procedures must be established to* *— provide guidance for identifying the affected seat(s),* *— provide a practical means of prohibiting the use of the affected seat(s).*
25-21-1-1 25-21-1-1A	Recline functions (ALL)	D	–	–	(M) May be inoperative and seat occupied provided the seat is secured in the take-off and landing position. *(M) Procedures must be established to provide a practical means of securing the seat in the take-off and landing position.*
25-21-1-1B	(ALL)	C	–	–	May be inoperative provided the seat back is immovable in the take-off and landing position.
25-21-1-2 25-21-1-2A	Under seat baggage restraining bars (ALL)	D	–	–	May be inoperative or missing provided: (a) baggage is not stowed under associated seat, and (b) associated seat is placarded 'DO NOT STOW BAGGAGE UNDER THIS SEAT'.
25-21-1-3 25-21-1-3A	Passenger seat armrests with recline control mechanism (ALL)	D	–	–	(M) May be inoperative, damaged or missing, provided: (a) armrest does not block an emergency exit,

ATA CHAPTER: 25 Equipment and furnishings					PAGE: 25-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
					(b) armrest is not in such a position that it restricts any passengers from accessing the aeroplane's aisle, and (c) if the armrest is missing, associated seat is secured in full upright position. *(M) Procedures must be established to provide a practical means of securing the associated seat in the full upright position.* *(M) Procedures must be established to remove any damaged armrest which may harm the passenger.*
25-21-1-4	Passenger seat armrests without recline control mechanism				
25-21-1-4A	(ALL)	D	–	–	(M) May be inoperative, damaged or missing, provided: (a) armrest does not block an emergency exit, and (b) armrest is not in such a position that it restricts any passengers from accessing the aeroplane's aisle. *(M) Procedures must be established to remove any damaged armrest which may harm the passenger.*
25-21-1-5	Swivel/travel mechanisms				
25-21-1-5A	(ALL)	D	–	–	(M) May be inoperative provided: (a) associated seat is secured in the take-off and landing position, and (b) associated seat does not restrict emergency egress.

ATA CHAPTER: 25 Equipment and furnishings					PAGE: 25-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
					(M) Procedures must be established to provide a practical means of securing the associated seat in the take-off and landing position.
25-21-1-5B	(ALL)	C	–	–	May be inoperative provided the associated seat is immovable in the take-off and landing position.
25-60-1	**Electrical torches /flashlights (incl. holders)**				
25-60-1A	(SPO/NCO)	D	–	0	May be inoperative or missing for daylight operations.
25-60-1B	(ALL)	C	–	–	Any in excess of those required for the intended flight may be inoperative or missing.
25-60-2	**Life rafts**				
25-60-2A	(ALL)	D	–	–	(M) Any in excess of those required for the intended flight may be inoperative or missing provided the inoperative unit is removed from the aeroplane and its installed location is placarded inoperative; or removed from the installed location, secured out of sight, and the inoperative unit and its installed location are placarded inoperative. *(M) Procedures must be established to:* *— provide instructions to placard the inoperative unit and its installed location,* *— secure the inoperative unit in an out-of-sight location if possible.*
25-60-3	**Survival equipment**				

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
25-60-A	(ALL)	D	–	–	(M) Any in excess of those required for the intended flight may be inoperative or missing provided the inoperative unit is removed from the aeroplane and its installed location is placarded inoperative; or removed from the installed location, secured out of sight, and the inoperative unit and its installed location are placarded inoperative. *(M) Procedures must be established to:* *— provide instructions to placard the inoperative unit and its installed location,* *— secure the inoperative unit in an out-of-sight location.*
25-61-1	**Crash axes and crowbars**				
25-61-1A	(ALL)	D	–	–	Any in excess of those required may be inoperative or missing.
25-62-1	**First-aid kits**				
25-62-1A	(ALL)	D	–	1	Any in excess of one may be incomplete or missing.
25-63	**Emergency locator transmitters**				
25-63-1	**Automatic emergency locator transmitters ELT(AF)/ELT(AP) /ELT(AD)**				
25-63-1A	(ALL)	D	–	–	Any in excess of those required may be inoperative.
25-63-1B	(ALL)	A	–	0	May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first.
25-63-2	**Survival emergency locator transmitters ELT(S)**				
25-63-2A	(NCO)	D	–	0	Any in excess of those required may be inoperative or missing.

ATA CHAPTER: 25 Equipment and furnishings					PAGE: 25-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
25-63-2B	(CAT/SPO)	D	–	–	(M) Any in excess of those required for the intended flight may be inoperative or missing provided the inoperative unit is removed from the aeroplane and its installed location is placarded inoperative; or removed from the installed location, secured out of sight, and the inoperative unit and its installed location are placarded inoperative. *(M) Procedures must be established to:* *— provide instructions to placard the inoperative unit and its installed location,* *— secure the inoperative unit in an out-of-sight location.*
25-63-2C	(NCO)	A	–	0	May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first.
25-63-3	**Personal locator beacons (PLB)**				
25-63-3A	(NCO)	D	–	–	Any in excess of those required may be inoperative or missing.
25-63-3A	(NCO)	A	–	0	May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first.
25-64-1	**Life jackets (or equivalent individual floatation devices)**				
25-64-1A	(ALL)	D	–	–	(M) Any in excess of those required for the intended flight may be inoperative or missing provided: (a) required distribution of operative units is maintained throughout the aeroplane, and

ATA CHAPTER: 25 Equipment and furnishings				PAGE: 25-x
(1) System & sequence numbers item	(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
				(b) the inoperative unit is removed from the aeroplane and its installed location is placarded inoperative; or removed from the installed location, secured out of sight, and the inoperative unit and its installed location are placarded inoperative. *(M) Procedures must be established to:* *— provide instructions to placard the inoperative unit and its installed location,* *— secure the inoperative unit in an out-of-sight location.*

Additional considerations:

- **25-11-1-4 Flight crew compartment seats — Safety harnesses:** Padding may be part of the ETSO/TSO and therefore required.
- **25-21-1 Passenger seats:**

  ⇒ 25-21-1A:

  Any damage to passenger seats and components must not be detrimental to passenger safety.

  This item and associated sub-items do not include tray tables that may, if inoperative in the non-stowed position, render the seat by itself or the seat row (behind the seat to which the tray table is attached) inoperative. A tray table inoperative in the stowed position is considered as a passenger convenience item.

  For single aisle configurations, the affected seat(s) may include the seat behind and/or the adjacent outboard seats.

  ⇒ 25-21-1-1:

  Any damage to passenger seats and components must not be detrimental to passenger safety.

  The seat recline position can be failed in the take-off and landing position other than the full upright position, when the seat has been certified to this alternate position.

  ⇒ 25-21-1-2:

  Any damage to passenger seats and components must not be detrimental to passenger safety.

The certification basis of the seat or seat assembly will need to be verified to determine whether an inoperative or missing under seat baggage restraining bar affects the integrity of the seat.

⇒ 25-21-1-3/4/5: Any damage to passenger seats and components must not be detrimental to passenger safety.

- **25-63-1 Automatic emergency locator transmitters ELT(AF)/ELT(AP)/ ELT(AD) and**
  25-63-2 Survival Emergency Locator Transmitters ELT(S):

  An emergency locator transmitter (ELT) is a generic term describing equipment which broadcasts distinctive signals on designated frequencies and, depending on the application, may be activated by impact or manually. An ELT is one of the following:

  Automatic fixed (ELT(AF)): an automatically activated ELT which is permanently attached to an aeroplane;

  Automatic portable (ELT(AP)): an automatically activated ELT which is rigidly attached to an aeroplane but readily removable from the aeroplane;

  Automatic deployable (ELT(AD)): an ELT which is rigidly attached to the aeroplane and which is automatically deployed and activated by impact and, in some cases, also by hydrostatic sensors. Manual deployment is also provided;

  Survival ELT (ELT(S)): an ELT which is removable from an aeroplane, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.

  An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed to be tethered to a life raft or a survivor.

ATA 26 — Fire protection

ATA CHAPTER: 26 Fire protection					PAGE: 26-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
26-24-1	**Hand fire extinguishers**				
26-24-1A	(ALL)	D	–	–	Any in excess of those required by the operating rules may be inoperative or missing.
25-60-1	**Protective breathing equipment (PBE)**				
25-60-1A	(ALL)	D	–	–	Any in excess of those required may be inoperative or missing provided that the inoperative PBE is placarded inoperative and removed. *Note:* Inoperative PBE units may be subject to dangerous goods requirements.

ATA 27 — Flight controls

ATA CHAPTER: 27 Flight controls					PAGE: 27-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
27-10-1	**Aileron trim tab position indication**				
27-10-1A	(ALL)	C	1	0	(O) May be inoperative provided: (a) tab is visually checked for full range of operation, (b) tab operation is not restricted, and (c) tab is positioned to NEUTRAL (or recommended AFM setting) and appropriate setting is verified by visual inspection prior to each departure.
27-20-1	**Rudder trim tab position indication**				
27-20-1A	(ALL)	C	1	0	(O) May be inoperative provided: (a) tab is visually checked for full range of operation, (b) tab operation is not restricted, and (c) tab is positioned to NEUTRAL (or recommended AFM setting) and appropriate setting is verified by visual inspection prior to each departure.
27-30-1	**Elevator trim tab position indication**				
27-30-1A	(ALL)	C	1	0	(O) May be inoperative provided: (a) tab is visually checked for full range of operation, (b) tab operation is not restricted, and (c) tab is positioned to NEUTRAL (or recommended AFM setting) and appropriate setting is verified by visual inspection prior to each departure.
27-31-1	**Electric elevator trim system**				

ATA CHAPTER: 27 Flight controls					PAGE: 27-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
27-31-1A	(ALL)	C	1	0	(M) May be inoperative provided: (a) manual trim is checked operative, and (b) electric trim is deactivated. *(M) Procedures must be established to:* *— deactivate the electric trim system, and* *— ensure manual trim is not affected.*
27-50-1	**Flaps position indication**				
27-50-1A	(ALL)	C	1	0	(O) May be inoperative provided: (a) prior to each flight, flaps are visually checked for full travel, (b) flaps operation is not restricted, and (c) flaps are visually checked for proper setting prior to each departure.
27-70-1	**Gust lock**				
27-70-1A	(ALL)	C	1	0	(M) May be inoperative provided gust lock is secured unlocked. *(M) Procedures must be established to secure the gust lock unlocked*.

Additional considerations:

- **27-31-1 Electric elevator trim system:** Autopilot, if installed, may have to be disconnected.
- **27-50-1 Flaps position indication:** Crew should be able to visually check the flaps position without having to leave the flight deck.
- **27-70-1 Gust lock:** AFM limitations, if any, must be respected with inoperative gust lock. Any other system impacted by the gust lock failed in the locked position need to be considered.

ATA 28 — Fuel

ATA CHAPTER: 28 Fuel					PAGE: 28-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
28-40-1	**Fuel quantity indication**				
28-40-1A	(ALL)	C	–	1	(O) Any in excess of one may be inoperative provided a reliable means is established to determine that fuel quantity on-board meets the regulatory requirements for flight. *(O) Procedures must be established to determine that fuel quantity on-board meets the regulatory requirements for flight.*

Additional considerations:

- **28-40-1 Fuel quantity indication:** This proposal is made for tanks with interconnected outlets functioning as a single tank, such that individual tanks cannot be isolated. Fuel migration from one wing to the other needs also to be considered.

ATA 30 — Ice & rain protection

ATA CHAPTER: 30 Ice & rain protection						PAGE: 30-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions	
30-00-1	**Inertial separators**					
30-00-1A	(CAT/SPO)	B	–	0	May be inoperative provided operations are not conducted in known or forecasted icing conditions.	
30-00-1A	(NCO)	C	–	0	May be inoperative provided operations are not conducted in known or forecasted icing conditions.	
30-10-1	**Airframe aerodynamic surface ice protection**					
30-10-1A	(CAT/SPO)	B	–	0	One or more may be inoperative provided operations are not conducted in known or forecasted icing conditions.	
30-10-1B	(NCO)	C	–	0	One or more may be inoperative provided operations are not conducted in known or forecasted icing conditions.	
30-31-1	**Pitot heating system**					
30-31-1A	(CAT)	B	–	1	(O) Any in excess of one may be inoperative provided: (a) operations are conducted under day VMC. (b) operations are not conducted in visible moisture or into known or forecasted icing conditions, and (c) the operative pitot heater is verified operative prior to each flight. *(O) Procedures must be established for required pre-flight check.*	

ATA CHAPTER: 30 Ice & rain protection					PAGE: 30-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
30-31-1B	(CAT)	B	–	0	One or more may be inoperative provided: (a) operations are conducted under day VFR, and (b) operations are not conducted in visible moisture or into known or forecasted icing conditions.
30-31-1C	(NCO/SPO)	B	–	0	May be inoperative provided: (a) operations are conducted under day VFR, and (b) operations are not conducted in visible moisture or into known or forecasted icing conditions.
30-31-3	**Static port heating system**				
30-31-3A	(CAT)	C	–	0	May be inoperative provided: (a) operations are conducted under day VFR, and (b) operations are not conducted in known or forecasted icing conditions.
30-31-3B	(CAT)	B	–	1	(O) Any in excess of one may be inoperative provided: (a) operations are conducted under day VMC, (b) operations are not conducted in visible moisture or into known or forecasted icing conditions, and (c) the operative static port heater is verified operative prior to each flight. *(O) Procedures must be established for required pre-flight check.*

ATA CHAPTER: 30 Ice & rain protection					PAGE: 30-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
30-31-3C	(NCO/SPO)	C	–	0	One or more may be inoperative provided: (a) operations are conducted under day VFR, and (b) operations are not conducted in known or forecasted icing conditions.
30-32-1	**Stall warning mounting plate heater**				
30-32-1A	(ALL)	B	–	0	One or more may be inoperative provided: (a) operations are conducted under day VMC, and (b) operations are not conducted in known or forecasted icing conditions.
30-41-1	**Windshield heating/De-icing system**				
30-41-1A	(ALL)	C	–	0	May be inoperative provided operations are not conducted in known or forecasted icing conditions.
30-61-1	**Propeller de-ice/Anti-ice system**				
30-61-1A	(CAT/SPO)	B	–	0	One or more may be inoperative provided operations are not conducted in known or forecasted icing conditions.
30-61-1B	(NCO)	C	–	0	One or more may be inoperative provided operations are not conducted in known or forecasted icing conditions.

Additional considerations:

- Relief for the above-mentioned items should be further restricted or removed when the loss of the heating/anti-icing system would impact other systems which are integrated with the considered item.

ATA 31 - Indicating/Recording systems

ATA CHAPTER: 31 Indicating/Recording systems					PAGE: 31-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
31-21-1	**Clock**				
31-21-1A	(ALL)	C	–	0	May be inoperative provided an accurate timepiece is operative on the flight crew compartment indicating the time in hours, minutes and seconds. *Note:* On the basis that the timepiece required does not need to be approved, an accurate pilot's wristwatch which indicates hours, minutes and seconds is acceptable.
31-22-1	**Hour meter**				
31-22-1A	(ALL)	D	1	0	(O) May be inoperative provided a procedure is established to record flight time. *(O) Procedures must be established to record flight time.*

ATA 32 — Landing gear

ATA CHAPTER: 32 Landing gear					PAGE: 32-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
32-40-1	**Parking brake**				
32-40-1A	(ALL)	C	1	0	(O) May be inoperative provided a procedure is established to prevent movement of the aeroplane when stopped or parked. *(O) Procedures must be established to prevent movement of the aeroplane when stopped or parked.*

Additional considerations:

- **32-40-1 Parking brake:** This relief may not be applicable to heavier aeroplanes. Consideration must be given to emergency evacuation with passengers on board.

ATA 33 — Lights

ATA CHAPTER: 33 Lights					PAGE: 33-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
33-10-1	**Flight crew compartment lighting** (Excluding internally lighted buttons/switches, emergency lights and annunciations)				
33-10-1A	(ALL)	C	–	0	May be inoperative for daylight operations.
33-10-1B	(ALL)	C	–	–	Individual lights may be inoperative provided: (a) sufficient lighting is operative to make each required instrument control and other device for which it is provided easily readable, and (b) lighting configuration at dispatch is acceptable to the flight crew.
33-20-1	**Passenger compartment lighting**				
33-20-1A	(ALL)	D	–	0	May be inoperative provided passengers are not carried when operating at night.
33-20-1B	(ALL)	C	–	–	Individual lights may be inoperative provided lighting configuration at dispatch is acceptable to the flight crew.
33-20-2	**Cabin signs (Fasten seat belt/ No smoking)**				
33-20-2A	(ALL)	C	1	0	(O) May be inoperative provided alternate procedures are established and used for briefing passengers.

ATA CHAPTER: 33 Lights					PAGE: 33-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
33-20-2B	(ALL)	D	–	0	May be inoperative provided no passenger is carried.
33-41-1	**Navigation/ Position lights**				
33-41-1A	(ALL)	C	–	0	One or more may be inoperative for daylight operations.
33-41-1B	(ALL)	C	–	–	Any in excess of those required may be inoperative for night operations.
33-42-1	**Anti-collision light system**				
33-42-1A	(CAT)	C	–	1	Any in excess of one may be inoperative.
33-42-1B	(NCO/SPO)	C	–	0	One or more may be inoperative for daylight operations.
33-43-1	**Wing illumination light**				
33-43-1A	(ALL)	D	1	0	May be inoperative for daylight operations not conducted in known or forecasted icing conditions.
33-43-1B	(ALL)	C	1	0	May be inoperative provided operations are not conducted at night into known or forecast icing conditions.
33-44-1	**Landing lights**				
33-44-1A	(CAT)	B	–	–	50 % of landing lights may be inoperative for night operations.
33-44-1B	(NCO/SPO)	C	–	1	Any in excess of one may be inoperative for night operation.

ATA CHAPTER: 33 Lights				PAGE: 33-x
(1) System & sequence numbers item	(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
33-44-1C (ALL)	C	–	0	One or more may be inoperative for daylight operations.

Additional considerations:

- **33-10-1B Flight deck lighting:** Emergency lighting might need to be taken into consideration.
- **33-20-1C Passenger compartment lighting:** No reference available for the level of required illumination in the cabin.
- **33-20-2 Cabin signs:** A passenger address system might have to be considered.
- **33-42-1 Anti-collision light system:** Strobe lights can be considered as anti-collision lights only if granted by certification.
- **33-44-1 Landing lights:** Alternate dispatch conditions may be proposed based on the use of taxi lights, if adequate for the intent of purpose.
- **Additional optional lights:** Additional dispatch relief could be given for optional lights (external courtesy/utility lights, tail logo light, recognition lights).
- **Lighted switches/buttons:** Additional relief could be given on a case-by-case basis in a dedicated item.

ATA 34 — Navigation

ATA CHAPTER: 34 Navigation					PAGE: 34-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-10-1	**Primary airspeed indication**				*Note:* Standby airspeed indication is not considered as a primary airspeed indication by this guidance.
34-10-1A	(CAT)	C	–	–	May be inoperative provided: (a) a primary independent airspeed indication is available at each required pilot's station. (b) a standby airspeed indication is available.
34-10-1B	(NCO/SPO)	C	–	1	Any in excess of one available at pilot's station may be inoperative.
34-10-2	**Primary altitude indication**				*Note:* A secondary/standby altitude indication is not considered as a primary altitude indication.
34-10-2A	(CAT)	B	–	–	May be inoperative provided: (a) flight is conducted under VFR, (b) an independent altitude indication is available at each required pilot's station, and (c) an additional independent altitude indication is operative for single pilot operations. *Note:* For single pilot operations a secondary/standby or off-side indication may satisfy condition (b) or (c), if visibility require-ments are met.

ATA CHAPTER: 34 Navigation					PAGE: 34-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-10-2B	(CAT)	B	–	–	May be inoperative provided: (a) flight is conducted under VFR in sight of the surface, and (b) a primary altitude indication is available at each required pilot's station.
34-10-2C	(NCO/SPO)	C	–	–	May be inoperative provided: (a) flight is conducted under VFR, and (b) an altitude indication is available at each required pilot's station. *Note:* For single pilot operations a secondary/standby or off-side indication may satisfy condition (b), if visibility requirements are met.
34-10-3	**Turn and slip indicator**				
34-10-3-1	**Turn indication**				
34-10-3-1A	(CAT)	B	–	0	May be inoperative for single pilot operations provided operations are conducted under day VFR.
34-10-3-1B	(ALL)	C	–	0	May be inoperative for single pilot operations provided standby attitude indication is operative.
34-10-3-1C	(NCO/SPO)	C	–	0	May be inoperative for single pilot operations provided operations are conducted under day VFR.
34-10-3-1D	(ALL)	C	–	1	Any in excess of one may be inoperative provided: (a) the operative inclinometer is on the pilot flying side, and (b) primary attitude indications are operative at each required pilot's station.

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-10-3-1E	(ALL)	B	–	1	Any in excess of one may be inoperative provided: (a) operations are conducted under day VMC, and (b) primary attitude indications are operative at each required pilot's station.
34-10-3-2	**Slip indicator**				
34-10-3-2A	(ALL)	C	–	1	Any in excess of one may be inoperative provided the operative slip indicator is on the pilot flying side.
34-10-3-2B	(NCO/SPO)	D	–	0	May be inoperative provided operations are conducted under day VFR.
34-10-4	**Vertical speed indicator**				
34-10-4A	(CAT)	C	–	1	Any in excess of one may be inoperative provided the operative VSI is on the pilot flying side.
34-10-4B	(NCO/SPO)	C	–	0	May be inoperative for day VFR operation.
34-10-5	**OAT indicator**				
34-10-5A	(ALL)	C	–	0	(O) May be inoperative provided another air temperature indication is operative that is convertible to OAT. *(O) Procedures must be established to provide guidance to the crew to convert the alternate temperature indication in OAT.*

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions	
34-10-5B	(ALL)	C	–	0	May be inoperative provided: (a) operations are conducted under VFR, (b) operations are not conducted in known or forecasted icing conditions, and (c) weather reports indicate that at any point of the route intended to be flown, the OAT is within the aeroplane's operating temperature limitations.	
34-15-1	**Altitude alerting system**					
34-15-1A	(ALL)	C	–	0	(O) May be inoperative provided the altitude alerting system is not part of the equipment required for intended operation. *(O) Procedures must be established to specify any applicable restriction for operations requiring a specific approval.*	
34-15-2	**Radio altimeter**					
34-15-2A	(ALL)	C	–	0	May be inoperative provided approach minima or operating procedures are not dependent upon its use.	
34-20-1	**Stabilised direction indication**					
34-20-1A	(CAT)	C	–	1	Any in excess of one may be inoperative for single pilot operations provided: (a) a stabilised direction indication is operative on the pilot flying side, and (b) magnetic/standby compass is operative.	

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-20-1B	(CAT)	B	–	1	(O) Any in excess of one may be inoperative provided: (a) operations are conducted under day VFR, (b) the stabilised direction indication is displayed at each required pilot's station, and (c) magnetic/standby compass is operative. *(O) Procedures must be established to ensure adequate configuration of the displays in accordance with the above condition (b).*
34-20-1C	(NCO/SPO)	C	–	1	Any in excess of one may be inoperative provided a stabilised direction indication is operative on the pilot flying side.
34-20-1D	(NCO/SPO)	C	–	0	May be inoperative on the pilot flying side for day VFR operations, in sight of the surface with adequate external attitude reference.
34-20-2	**Primary attitude indication**				*Note:* A secondary/standby attitude indication is not considered as a primary indication.
34-20-2A	(CAT)	C	–	1	Any in excess of one may be inoperative for single pilot operations provided the primary attitude indication is operative on the pilot flying side.

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-20-2B	(CAT)	B	–	1	(O) Any in excess of one may be inoperative provided: (a) operations are conducted under VFR, (b) the primary attitude indication is displayed on both pilots' station, and (c) standby attitude indication is working. *(O) Procedures must be established to ensure adequate configuration of the displays in accordance with the above condition (b).*
34-20-2C	(NCO/SPO)	C	–	1	Any in excess of one may be inoperative for single pilot operations provided the primary attitude indication is operative on the pilot flying side.
34-20-2D	(NCO/SPO)	B	–	0	May be inoperative provided: (a) operations are conducted under VFR, and (b) standby attitude indication is operative.
34-20-2E	(CAT)	B	–	0	May be inoperative for single pilot operations provided: (a) operations are conducted under day VFR in sight of surface with adequate external attitude reference, and (b) a standby attitude indication is operative.
34-20-2F	(NCO/SPO)	C	–	0	May be inoperative for single pilot operations provided operations are conducted under day VFR and in sight of the surface with adequate external attitude reference.
34-20-3	**Standby attitude indication**				

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-20-3A	(ALL)	C	–	0	May be inoperative provided the primary attitude indication is not provided through an electronic display indicator.
34-22-1	**Magnetic/Standby compass**				
34-22-1A	(ALL)	B	–	0	May be inoperative for single pilot operations provided: (a) a stabilised direction indication is operative on the pilot flying side, and (b) another source of magnetic heading is available and visible by the pilot flying.
34-22-1B	(ALL)	B	–	0	May be inoperative provided: (a) operations are conducted under day VFR, and (b) two independent stabilised direction indications are operative.
34-22-1C	(ALL)	B	–	0	May be inoperative provided: (a) two independent stabilised direction indications are operative, and (b) another source of magnetic heading is available and visible by the pilot flying.
34-31-1	**Marker beacon**				
34-31-1A	(ALL)	C	–	0	May be inoperative under IFR operations provided approach procedures do not require marker fixes.
34-31-1B	(ALL)	D	–	0	May be inoperative under VFR operations.
34-32-1	**Approach aids (e.g. ILS, SBAS)**				
34-32-1A	(ALL)	B	–	0	May be inoperative under IFR operations provided approaches and missed approaches where navigation is based on the affected item are not included in the flight plan.

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-32-1B	(ALL)	D	–	0	May be inoperative under VFR operations.
34-40-1	**Airborne collision avoidance system**				
34-40-1A	(CAT)	C	–	0	(O)(M) May be inoperative provided: (a) ACAS is deactivated, and (b) operating procedures do not require its use. *(O) Procedures must be established to provide alternate crew procedures, as applicable.* *(M) Procedures must be established to deactivate ACAS.*
34-40-1B	(NCO/SPO)	D	–	0	(O)(M) May be inoperative provided: (a) ACAS is deactivated, and (b) operations are not conducted in an airspace where ACAS is required. *(M) Procedures must be established to deactivate ACAS.*
34-41-1	**Weather detection system** (Antenna, XCVR, controllers, displays)				
34-41-1A	(Unpressurised aeroplanes)	D	–	0	May be inoperative.
34-41-1B	(Pressurised aeroplanes)	C	–	0	May be inoperative provided operations are conducted in day VMC.
34-41-1C	(Pressurised aeroplanes)	C	–	0	May be inoperative provided no thunderstorm or other potentially hazardous weather conditions, regarded as detectable with the airborne weather detection system, are forecasted along the intended route.

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions	
					Note: The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.	
34-41-1-1	Wind shear detection/ Warning system predictive function					
34-41-1-1A	(ALL)	C	–	0	May be inoperative.	
34-43-1	**Terrain awareness warning system (Class B TAWS)**					
34-43-1A	(ALL)	D	–	0	May be inoperative.	
34-43-1-1	Modes 1 and 3					
34-43-1-1A	(ALL)	C	–	0	One or more modes may be inoperative provided forward looking terrain avoidance (FLTA) and premature descent alert (PDA) functions are operative.	
34-43-1-2	Glideslope deviation (Mode 5)					
34-43-1-2A	(ALL)	B	–	0	May be inoperative.	
34-43-1-2B	(ALL)	C	–	0	May be inoperative for day VMC only.	
34-43-1-3	FLTA and PDA functions					
34-43-1-3A	(ALL)	B	–	0	May be inoperative provided: (a) modes 1 and 3 are operative, and (b) approaches procedures do not require its use.	
34-43-1-4	Advisory callouts					

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-43-1-4A	(ALL)	C	–	0	(O) May be inoperative provided: (a) low visibility approaches requiring the use of affected callouts are not performed, and (b) alternate procedures are established and used. *Note:* Check flight manual limitations for approach minima. *(O) Procedures must be established to provide alternate crew procedures, as applicable.*
34-51-1	**Navigation systems (based on VOR, DME, ADF, GNSS, INS)**				
34-51-1A	(CAT)	C	–	–	(O) One or more may be inoperative provided: (a) the navigation systems required for each segment of the intended route are operative, and (b) alternate procedures are established and used, where applicable. *Note:* The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules. *(O) Procedures must be established to give alternate procedures in case existing operational procedures are affected.*

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-51-1B	(NCO/SPO)	D	–	–	One or more may be inoperative provided: (a) operations are conducted under VFR, and (b) applicable airspace require-ments are complied with.
34-54-1	**SSR transponder mode A/C**				
34-54-1A	(ALL)	D	–	–	Any in excess of those required by the airspace may be inoperative.
34-54-2	**SSR transponder mode S**				
34-54-2A	(ALL)	D	–	–	Any in excess of those required for the intended route may be inoperative. *Note 1:* An SSR transponder with an operative mode S function is defined as a transponder which can provide, at least, elementary surveillance capability. *Note 2:* The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.
34-54-2B	(ALL)	C	–	0	One or more may be inoperative provided permission is obtained from the Air Navigation Service Provider(s) when required for the intended route.

ATA CHAPTER: 34 Navigation					PAGE: 34-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
					Note 1: An SSR transponder with an operative mode S function is defined as a transponder which can provide, at least, elementary surveillance capability. *Note 2:* Elementary surveillance (ELS) capability (mode S including aeroplane identification and pressure altitude reporting) is required in European mode S designated airspace. *Note 3:* Altitude reporting, provided by an SSR transponder mode S function, is required for ACAS II operation. Refer to item 34-40-1 for flight with ACAS II inoperative. *Note 4:* Altitude reporting, provided by an SSR transponder mode S function, is required for flight into RVSM airspace. *Note 5:* The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.
34-54-2-1	**Enhanced surveillance functions**				
34-54-2-1A	(ALL)	D	–	0	One or more downlinked aircraft parameters (DAPs) which provide enhanced surveillance may be inoperative when not required for the intended route. *Note:* The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
34-54-2-1B	(ALL)	C	–	0	One or more downlinked aircraft parameters (DAPs) which provide enhanced surveillance may be inoperative when required for the intended route. *Note 1:* Enhanced surveillance capability is required in mode S enhanced notified airspace. *Note 2:* The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.
34-54-2-2	**Extended squitter (ADS-B out) transmissions**				
34-54-2-2A	(ALL)	D	–	0	One or more extended squitter transmissions may be inoperative when not required for the intended route. *Note:* The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.
34-54-2-2B	(ALL)	C	–	0	One or more extended squitter transmissions may be inoperative when required for the intended route. *Note:* The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.

Additional considerations:

- **34-10-5 OAT indicator:** This item applies to reciprocating engine-powered aeroplanes of more than 2 722 kg (6 000 lbs) maximum weight and turbine engine-powered aeroplanes.
- **34-20-2A Primary attitude indication:** For electronic cockpits the standby horizon must be operative.
- **34-51-1 Navigation systems:** The listed items are applicable to simple avionics architecture. In case of more complex or more integrated architecture, the dispatch conditions need to be adapted accordingly.

ATA 35 — Oxygen

ATA CHAPTER: 35 Oxygen					PAGE: 35-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
35-00-1	**Supplemental oxygen system Non-pressurised aeroplanes**				
35-00-1A	(ALL)	D	–	–	Any in excess of those required may be inoperative.
35-10-1	**Flight crew fixed oxygen system** (Supplemental)				
35-10-1-1	Flight deck pressure indications				
35-10-1-1A	(ALL)	C	–	–	(O)(M) One or more may be inoperative provided a procedure is used to ensure the oxygen supply is above the minimum for the intended flight. *(O)/(M) Procedures must be established to provide an alternate means to compute the available oxygen quantity, e.g. using the pressure gauge located on the bottle.*
35-10-1-2	Bottle gauges				
35-10-1-2A	(ALL)	C	–	0	One or more may be inoperative provided the associated flight deck pressure indication is operative.
35-10-1-3	Additional oxygen masks (e.g. supernumerary)				
35-10-1-3A	(ALL)	D	–	–	Any in excess of those required may be inoperative.

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
35-20-1	**Passenger oxygen system (Supplemental oxygen)**				
35-20-1A	(ALL)	C	–	0	(O)(M) May be inoperative provided: (a) maximum altitude is limited to 10 000 ft pressure altitude. (b) an adequate supply of fresh air is provided to the cabin, and (c) passengers are appropriately briefed. *(O)/(M) Procedures must be established to set the aeroplane in a configuration providing an adequate supply of fresh air to the cabin.* *(O) Procedures must be established to provide a passenger briefing in accordance with the dispatch configuration.*
35-20-1B	(ALL)	D	–	0	May be inoperative provided no cabin occupant is carried.

Additional considerations:

- **35-20-1 Passenger oxygen system:** The fresh air is non-recirculated air.

ATA 38 — Water/Waste

ATA CHAPTER: 38 Water/Waste					PAGE: 38-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
38-30-1	**Lavatory waste system**				
38-30-1A	(ALL)	D	1	0	(M) May be inoperative provided: (a) waste is drained and system is inspected for leakage, (b) system components are deactivated, and (c) lavatory access is closed and placarded 'INOPERATIVE — DO NOT USE'. *(M) Procedures must be established to drain, inspect and deactivate the system.*
38-30-2	**Pilot relief tube**				
38-30-2A	(ALL)	D	-	0	May be missing or inoperative provided it is not used.

ATA 46 — Information systems

ATA CHAPTER: 46 Information systems					PAGE: 46-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
46-20-1	**Electronic flight bag (EFB) systems**				
46-20-1A	(ALL)	C	–	0	(M)(O) May be inoperative provided alternate procedures are established and used where operating procedures are dependent upon the use of the affected EFB.
46-20-2	**Class 2 EFB**				
46-20-2-1	Mounting device				
46-20-2-1A	(ALL)	C	–	1	(M)(O) Any in excess of one may be inoperative provided the affected EFB is secured by an alternative means.
46-20-2-1B	(ALL)	C	–	0	(M)(O) May be inoperative provided: (a) the associated EFB is used in accordance with class 1 EFB storage criteria, and (b) alternate procedures are established and used where operating procedures are dependent upon the use of the affected EFB.
46-20-2-2	Data connectivity				
46-20-2-2A	(ALL)	C	–	1	(M)(O) Any in excess of one may be inoperative provided an alternate means of data connectivity is used.
46-20-2-2B	(ALL)	C	–	0	(M)(O) May be inoperative provided alternate procedures are established and used where operating procedures are dependent upon the use of the affected EFB.

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(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
46-20-3	**Power connection for class 1 and class 2 EFB**				
46-20-3A	(ALL)	C	–	1	(M)(O) Any in excess of one may be inoperative provided an alternative power source is available and can be used for the planned duration of use of the affected EFB.
46-20-3B	(ALL)	C	–	0	(M)(O) May be inoperative provided alternate procedures are established and used. *(M) Procedures must be established to give guidance reference for deactivation of affected item, as appropriate, and provide alternate means, as applicable.* *(O) Procedures must be established to provide instructions to the crew for alternate procedures to be used.*

Additional considerations:

- The purpose of entry 46-20-1 is not to require inclusion of class 1 & 2 EFBs in an operator's MEL, but it is a means of controlling inoperative EFB equipment. Other means may also be agreed with the NAA.

  Any EFB function which operates normally may be used.

ATA 52 — Doors

ATA CHAPTER: 52 Doors					PAGE: 52-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
52-10-1	**Door key locks**				
52-10-1	(ALL)	D	–	–	(M) May be inoperative provided: (a) lock is secured in the UNLOCKED position, and (b) door is verified closed and latched prior to each departure. *(M) Procedures must be established to secure the lock in the unlocked position.*
52-70-1	**Cabin door warning light**				
52-70-1A	(ALL)	C	1	0	(O) May be inoperative provided: (a) a flight crew member confirms by visual inspection that all doors are properly closed and locked prior to each departure, (b) the doors are not reopened again prior to departure, (c) 'Fasten Seat Belt' sign remains ON, and (d) the passengers are briefed prior to each departure to have their seat belts fastened during the entire flight. *(O) Procedures must be established to brief the passengers prior to each departure.*

ATA 61 — Propellers

ATA CHAPTER: 61 Propellers					PAGE: 61-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
61-20-1	**Propeller synchrophasing system**				
61-20-1A	(ALL)	C	1	0	May be inoperative.

ATA 73 — Engine fuel and control

ATA CHAPTER: 73 Engine fuel and control					PAGE: 73-x
(1) System & sequence numbers item		(2) Rectification interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or exceptions
73-20-1	**Full authority digital electronic control (FADEC)**				
73-20-1A	Time limited dispatch message (ALL)	A	–	–	FADEC faults may be displayed provided repairs are made in accordance with the times established by either engine or aeroplane manufacturer, which-ever is more restrictive.

Additional considerations:

- **73-20-1 FADEC:** The time limited dispatch established by the engine or aeroplane manufacturer must be indicated in column (5).

GUIDANCE MATERIAL TO CS-GENERIC-MMEL

GM1 GEN.MMEL.105 Definitions

INOPERATIVE

(a) Some items have been designed to be fault tolerant and are monitored by computers which transmit fault messages for the purpose of maintenance. The presence of this category of message does not necessarily mean that the item is inoperative.

(b) It should be highlighted that unless it is specifically allowed by the MMEL, the item should not be removed.

ITEM

(a) In the context of these Certification Specifications, a component is considered to be a piece of equipment or instrument.

(b) In the context of these Certification Specifications, a system is considered to be a collection of equipment and/or instruments that perform a function. (See AMC 25.1309)

GM1 GEN.MMEL.107 Status of provided data

(a) Because of the alleviative nature of the MEL, the fact that the MMEL is mandatory data means that the MEL is not less restrictive than the MMEL as specified under 8.a.3. of Annex IV to Regulation (EC) No 216/2008 but may be more restrictive.

(b) For CAT operations the content of the operational and maintenance procedures provided by the applicant is recommended to the end user as defined in ORO.MLR.105(g).

GM1 GEN.MMEL.110 MMEL purpose

AEROPLANE TYPE

The MMEL may cover more than one aeroplane type provided that benefits on commonality can be taken and the applicability of each item is clearly indicated.

GM2 GEN.MMEL.110 MMEL purpose

NON-SAFETY-RELATED ITEMS

All items not included in the list are required to be operative unless they are considered to be non-safety-related items.

Non-safety-related items are defined in GM1 ORO.MLR.105(a).

Non-safety-related items include those items related to the convenience, comfort, or entertainment of the passengers and equipment that is used only on ground for maintenance purpose. Convenience, comfort, or entertainment of the passengers may include items such as galley equipment, movie equipment, stereo equipment, overhead reading lamps.

Non-safety-related items need not be included in the MMEL, unless so desired by the applicant.

GM1 GEN.MMEL.130 MMEL cover page, control page and 'General' section

The applicant can also propose its own format provided the contents and structure are respected.

GM1 GEN.MMEL.150 Operational and maintenance procedures

The periodicity of the performance of the procedures should be clarified either in a generic manner in the MMEL preamble or specifically in the associated dispatch conditions. Maintenance deactivation procedures should normally be performed once prior to the first flight under the associated item. Maintenance verification procedures periodicity may vary and should therefore be clarified in the MMEL. Operational procedures should normally be performed or acknowledged by the flight crew members before each flight, unless otherwise specified.

Operational and maintenance procedures should be consistent with the existing operational and maintenance instructions (aeroplane flight manual, AMM, weight and balance manual, etc.).

II. Draft decision AMC/GM to Part-21

Proposed amendment to Decision 2003/1/RM of 17 October 2003 (AMC/GM to Part 21)

AMC and GM to Part-21

Amend GM No 1 to 21A.15(d) by adding the following text:

GM No 1 to 21A.15(d)
Clarification of the term 'as applicable'

The requirement to establish an MMEL is applicable to all aircraft that can be used for commercial operations since the relevant operators must have MELs for those aircraft. So this means that for small aircraft an MMEL will be required. However, in order to minimise the burden for the TC applicants, generic MMELs for other-than-complex aircraft by means of a dedicated CS are established by the Agency. The TC applicant for an aircraft within that category can suffice with identifying the items of the generic MMEL that are appropriate for its design.

For Very Light Aeroplanes, Light Sport Aeroplanes, Very Light Rotorcraft, sailplanes, powered sailplanes, balloons and ELA2 airships the Agency considers that the list of required equipment as included in the TCDS, in combination with equipment required for the flight by the associated operational implement rules, establishes the list of equipment that must be operative for all flights. Other equipment may be inoperative and this constitutes the MMEL. Design approval applicants for these aircraft are therefore not required to establish an MMEL.

C. Regulatory Impact Assessment — *light*

1 Process and consultation

This RIA was developed during the CS-GENERIC-MMEL rulemaking activity.

2 Issue analysis and risk assessment

2.1 What is the issue and the current regulatory framework?

To operate an aircraft with inoperative items, operators under the forthcoming Part-CAT, Part-SPO or Part-NCO will be mandated to have an MEL or to apply for a permit to fly, the latter generating more administrative burden.

This MEL, issued by the operator, will have to be based on an MMEL, issued by the type certificate (TC) holder, and approved by the Agency.

Therefore, the CS-MMEL rulemaking activity has been initiated with the purpose of creating a standard for MMEL to be complied with by the type certificate holders.

Nevertheless the Agency has acknowledged that CS-MMEL, while being tailored to complex and large aircraft, may bring too much burden and will not be well suited to the operations of other types of aircraft.

This issue is the lack of appropriate requirements in the current legislation (i.e. CS-MMEL) for the following categories of aircraft: other-than-complex aircraft, very light aeroplanes (VLA), very light rotorcraft (VLR), sailplanes, powered sailplanes, balloons and ELA2 airships.

In addition, for very light aeroplanes (VLA), light sport aeroplanes (LSA), very light rotorcraft (VLR), sailplanes, powered sailplanes, balloons and ELA2 airships the Agency has acknowledged that the current rules for establishing a list of required equipment is sufficient to deal with the question which equipment shall be operative at dispatch. For these aircraft an MMEL is not required.

2.2 Who is affected?

TC holders (for other-than-complex aircraft in production) as well as applicants for a TC for such aircraft are affected as they will have to generate an MMEL, which was not necessarily the case before. As explained above, TC holders and applicants for VLA, LSA, VLR, sailplanes, balloons and small airships will not be affected.

Operators are also affected as it will affect the way they generate their MEL and the relief that can be obtained against the Air Operations regulation for all aircraft on the European register. National authorities which have used the JAA TGL 26 in the past as guidance in the MEL approval process are also affected.

2.3 What are the safety risks?

The safety risks may be that in the absence of a generic MMEL a TC applicant for an other-than-complex aeroplane will be forced to comply with CS-MMEL and in trying to reduce the burden will limit the amount of MMEL items. In practical operations this could lead to uncontrolled use of dispatch with inoperative equipment.

3 Objectives

The overall objectives of the Agency are defined in Article 2 of Regulation (EC) No 216/2008 (the Basic Regulation). This proposal will contribute to the overall objectives by addressing the issues outlined in Section 2.

The specific objective of this proposal is to solve implementation issues with the current CS-MMEL by offering the TC holder/applicant for other-than-complex aircraft appropriate requirements for the MMEL.

4 Identification of options

Table 1: Selected policy options

Option No	Description
0	Do nothing: TC holders of other-than-complex aeroplanes would use the CS-MMEL to generate their MMELs.
1	**Other-than-complex aeroplanes:** Create a generic MMEL for non-complex aeroplanes, derived from the CS-MMEL and harmonised with the similar guidance material from foreign authorities. **Very light aeroplanes (VLA), light sport aeroplanes (LSA), very light rotorcraft (VLR), sailplanes, powered sailplanes, balloons and ELA2 airships:** The current rules for establishing a list of required equipment is sufficient to deal with the question which equipment shall be operative at dispatch. For these aircraft an MMEL is not required.

5 Analysis of impacts

5.1 Safety impact

Option 0 would formally achieve an acceptable level of safety; however, the level of safety could vary greatly between projects. However, as explained under 2.3 above there may also be a safety risk in illegal dispatch with inoperative equipment.
Option 1 provides proportionate requirements which ensure that operators can define adequate lists of MMEL to ensure safety.

5.2 Economic impact

Option 0 would be the costliest for the industry as it requires a specific knowledge to be acquired and specific working procedures to be implemented by the TC holders which today are not used to generate MMELs.

Option 1 would limit greatly the additional costs of generating an MMEL as the MMEL guidance would give in a straightforward manner the authorised MMEL items.

5.3 Proportionality issues

Option 0 would force General Aviation manufacturers to follow rules made for complex motor-powered aircraft without taking into consideration their specific needs. It would generate burden on both TC holders and operators whereas the Agency is working on simplifying the certification process for non-complex aeroplanes through CS-LSA and CS-VLA.

Option 1 is adapted to General Aviation and would give the relief needed while maintaining an adequate level of safety.

5.4 Impact on regulatory coordination and harmonisation

Option 0 doesn't allow for harmonisation with a similar approach already existing by the FAA.

Option 1 would be harmonised with the existing FAA generic MMEL document on single engine aeroplanes.

6 Conclusion and preferred option

Option 1 is the preferred option as it provides TC holders with a simple and cost-effective tool to generate MMELs with proportionate requirements for different kinds of operators and aircraft while keeping the same level of safety as the CS-MMEL.

Annex A: Acronyms and definitions

EASA European Aviation Safety Agency
FAA Federal Aviation Administration
MEL Minimum Equipment List
MMEL Master Minimum Equipment List

Annex B: References

- CS-MMEL, NPA 2011-11
- Opinion No 02/2012 — Air Operations — OPS (Part SPO)
- Opinion No 01/2012 — Air Operations — OPS (Part-NCC and Part-NCO)
- Opinion No 04/2011 — Air Operations