



**NOTICE OF PROPOSED AMENDMENT (NPA) No 2011-11**

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

**on Certification Specifications, Acceptable Means of Compliance,  
and Guidance Material related to the development  
of a Master Minimum Equipment List (MMEL)**

**'CS-MMEL'**

### **Executive summary**

This NPA introduces CS-MMEL following the introduction of the Operational Suitability Data concept in Part 21 mandating the development of a Master Minimum Equipment List (MMEL) for all types. CS-MMEL contains the Certification Specifications for establishing the MMEL for motor-powered aircraft, and has been derived from existing JAA reference documents in the field.

The two main areas of change from the existing JAA material is the introduction of a Certification Specification with relation to quantitative analysis, in particular when it is needed to support the qualitative assessment, and to what level in relation to type design Certification Specifications requirements might be considered as achieving an acceptable level of safety. The second area is the transfer of MEL policy from JAA TGL 26 into MMEL guidance material. Both of these changes are covered in this NPA by Regulatory Impact Assessments.

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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 Certification Specifications for MMEL and related Guidance Material (GM). The scope of this rulemaking activity is outlined in the Terms of Reference (ToR) of task 21.039 and is described in more detail below.
2. The European Aviation Safety Agency (hereinafter 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<sup>1</sup> 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 a process has been adopted by the Agency's Management Board and is referred to as 'The Rulemaking Procedure'<sup>2</sup>.
4. This rulemaking activity is included in the Agency's Rulemaking Programme for 2012. It implements the rulemaking task 21.039(c) CS-MMEL for complex motor-powered aircraft.
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 rule text has 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 main partners as set out in the objectives of Article 2 of the Basic Regulation. The proposed text:
  - a. takes into account the proposed amendments to Part-21 related to Operational Suitability Data and the future air operations implementing rules;
  - b. ensures harmonisation with the applicable rules of Federal Aviation Administration (FAA) and Transport Canada (TCCA).

### II. Consultation

7. To achieve optimal consultation, the Agency is publishing the draft decision of the Executive Director on its internet site. Comments should be provided within 3 months in accordance with Article 6(4) of the Rulemaking Procedure. Comments on this proposal should be submitted by one of the following methods:

**CRT:** Send your comments using the Comment-Response Tool (CRT) available at <http://hub.easa.europa.eu/crt/>

**E-mail:** Comments can be sent by e-mail only in case the use of CRT is prevented by technical problems. The(se) problem(s) should be reported to the [CRT webmaster](mailto:CRT_webmaster@easa.europa.eu) and comments sent by email to [NPA@easa.europa.eu](mailto:NPA@easa.europa.eu).

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<sup>1</sup> 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, 19.3.2008, p. 1).

<sup>2</sup> 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 08-2007, 13.6.2007.

**Correspondence:** If you do not have access to internet or e-mail, you can send your comment by mail to:  
Process Support  
Rulemaking Directorate  
EASA  
Postfach 10 12 53  
D-50452 Cologne  
Germany

Comments should be submitted by **28 September 2011**. If received after this deadline, they might not be taken into account.

### **III. Comment response document**

8. 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**

9. Currently, approval of the Master Minimum Equipment List (MMEL) is the responsibility of the National Aviation Authority (NAA). To promote uniformity, the Joint Aviation Authorities (JAA) 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 was recommended to the NAAs for approval.
10. 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 training of pilots, cabin crew and maintenance personnel and includes the Master Minimum Equipment List (MMEL) and elements related to Flight Synthetic Training Devices (FSTD). The information is to be included and approved under the Operational Suitability Data (OSD) that will complement the Type Certificate (TC). The applicant for an aircraft type certificate will obtain approval of the 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 and training organisations to establish the appropriate training programmes or MEL.
11. Task 21.039 was set up to develop the Implementing Rules and associated Certification Specifications, AMC and GM 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.
12. An MMEL sub-group was created by the core group to address the MMEL task and members of the core group were invited to send participants to be involved in this sub-group activity. The sub-group members came from aircraft manufacturers, airline representatives, the pilot union, European NAAs and foreign aviation authorities.
13. The MMEL sub-group was tasked with taking the current guidance material in the field of MMEL; JAR-MMEL/MEL amendment 1, JAA MMEL Procedures Manual version 2 and JAA Administrative & Guidance Material, Section 4: Operations, Part Three: Temporary Guidance Leaflet 26 as far as possible, and use it to create CS-MMEL.
14. The sub-group held a total of six meetings in order to complete this activity. The group went through the proposed text based on the reference material; in particular, there were detailed discussions on the level of review and/or approval needed in the area of associated operational and maintenance procedures. It was concluded that the applicant

should present its procedures for validation rather than have any direct review or approval of them.

15. In addition to the already existing material, two areas were identified for further enhancement and attracted significant discussions; the first in relation to quantitative safety assessments, and the second in relation to the creation of an MMEL guidance book. These two topics have been addressed in the Regulatory Impact Assessments below.
16. As a result, changes have been introduced in relation to quantitative safety assessments reflecting the ARAC ASAWG recommendations.

Also an MMEL Guidance Book has been introduced to allow for a standardised and harmonised level of relief for common items as appropriate. This guidance is based on TGL 26. To allow comparison previous TGL 26 relief is listed in this NPA, where applicable, but will be removed from the final decision.

17. These two changes should facilitate further harmonisation and to ensure a level playing field for all applicants. Additionally, they should allow for better accommodation of new complex and highly integrated designs and airworthiness considerations. The MMEL sub-group also developed a set of criteria to be used as guidance material for the classification of change to the MMEL in accordance with Part 21A.91. The result of this work is provided in Annex 1 of this NPA, although it should eventually be introduced as guidance material to Part-21.
18. In order to properly address the availability of the operational and maintenance procedure associated to the MMEL, and the associated obligations on the holder of the type-certificate or restricted type-certificate, guidance material to Part 21A.62 'Availability of operational suitability data' is also proposed in Annex 2 of this NPA.
19. The text proposed for CS-MMEL presents some differences in drafting style compared to the already existing EASA CS. These differences do not change the nature or the use of the standards contained in the CS. They reflect the Agency's agreed guidelines for drafting of CS-ses. These guidelines did not exist at the time of adoption of the existing CS, which therefore followed the drafting style of the JARs that were the basis for their development.

Regardless of these differences in drafting style, the CS-MMEL will be used in the type certification process in the same way as any of the existing CS. Article 5 of Regulation (EC) No 216/2008 foresees that the type certificate will specify certain elements related to the operational use of the aircraft, one of them being the master minimum equipment list. In order to implement this provision of the Basic Regulation, the Agency has been working on amending Part-21. The current proposal is that the application for a type certificate (TC) or restricted type-certificate (RTC) will include or be supplemented by an application for the approval of operational suitability data (OSD) for specific types of operation. The MMEL will be part of this OSD.

The way the application for approval of the OSD will be handled is very similar to what happens with the application for the TC itself. As a first step, the Agency will define and notify to the applicant the OSD certification basis. This certification basis will be based on the applicable CS for OSD (including the CS-MMEL).

The function of the CS-MMEL will therefore be similar to the function of the existing CS: it will be the starting point for the establishment of the certification basis for the approval of the MMEL as part of the OSD. But the standards contained in the CS can be supplemented or replaced in accordance with what is foreseen in Part-21. When analysing the text proposed for this CS it is important to take into account how that text will be used.

The proposed text for CS-MMEL is divided into a Book 1 and a Book 2. Book 1 contains the technical standards that are the starting point for the establishment of the certification basis, as described above. The material contained in Book 2 is guidance

material, which either clarifies the content of some standards or provides guidance to the applicant on how to fulfil the standards in Book 1 and how to demonstrate that fulfilment to the Agency.

## **V. Regulatory Impact Assessment**

As explained above, two areas for change were identified which are addressed in this Regulatory Impact Assessment.

## **V(a) Regulatory Impact Assessment for Temporary Guidance Leaflet (TGL 26)**

### **0. Process and consultation**

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

### **1. Issue analysis and risk assessment**

#### **1.1 What is the issue?**

The current regulatory structure provides for JAA Administrative & Guidance Material, Section Four: Operations, Part Three: Temporary Guidance Leaflet, LEAFLET No 26: Guidance Document for MEL Policy (TGL 26). The principle use of this document was to provide operators with acceptable MEL entries, particularly where the item was marked 'as required by Operational Requirements' in the MMEL, while meeting the intent of the operational rules. However, relief in this document has been expanded over the years to the extent where a lot of the relief is clearly no longer meeting the intent of the operational rules, even though it may be considered to achieve an acceptable level of safety. Therefore, legally dispatching under the aforementioned statement which is defined as 'means that the listed item of equipment is subject to certain provisions (restrictive or permissive) expressed in the applicable operational requirements', and using TGL 26 (or equivalent) is no longer acceptable.

Furthermore, a number of items listed in TGL 26 are also required for the airworthiness of the aircraft. and increasing part of highly integrated systems offering far more functionality than the item listed. In such cases, the generic relief listed in TGL 26 may not be appropriate.

TGL 26 has also been used in the MMEL review as MMEL guidance material, which is consistent with the approach taken by other regulatory authorities such as FAA and TCCA. They both have MMEL policies to help addressing potentially similar items in a standardised manner. Material for this purpose still needs to be retained.

#### **1.2 Who is affected?**

TC and STC holders are affected as it will affect what they include into their MMEL. Aircraft operators are also affected as it will affect how they generate their MEL and relief that can be obtained against Operational Regulations for all aircraft on the European register. National authorities which have used in the past TGL 26 as guidance in the MEL approval process are also affected.

### **2. 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 1 of this RIA. The specific objective of this proposal is to maintain relief offered to operators today, but by including appropriate relief directly at MMEL level. This would then legally allow operators to continue to use relief that is below the prescribed equipage in the operational rules, as permitted in paragraph 2.a.3 of the essential requirements for air operations:

*The pilot-in-command must be satisfied that all equipment required for the execution of that flight are installed and operative, unless waived by the applicable Minimum Equipment List (MEL) or equivalent document.*

As the forthcoming MEL rules of Part ORO.MLR will drive constraints on the MEL to be based on the relevant Master Minimum Equipment List (MMEL) as defined in the operational suitability



data established in accordance with Commission Regulation (EC) No 1702/2003, only equipment which are given relief at MMEL level may be then included in the MEL<sup>3</sup>.

### 3. Identification of options

**Table 1: Selected policy options**

Option No	Description
0	Do nothing: TGL 26 would have no legal basis after 8 April 2012 and for all 'as required by...' items the operator would have to ensure compliance with associated operational requirement. No reference guidance to address standard items at MMEL level when relief is requested on a project by project basis would be available.
1	Create MMEL guidance using TGL 26 as basis: MMEL guidance to be incorporated at MMEL level for affected items, thus maintaining flexibility for operators and ensuring that accepted relief is compatible with the aircraft design and applicable airworthiness requirements.
2	Transfer content of TGL 26 into guidance material to the OPS IR: However, the level of relief offered would need to be restricted to compliance with operational requirements so as to meet its original intent. Furthermore, many items would also have to be removed as they also conflict with design and airworthiness requirements which can only be assessed at design level.

### 4. Analysis of impacts

#### 4.1 Safety impact

Option 0 would achieve an acceptable level of safety; however, the level of safety could vary greatly between projects. Option 1 allows for an acceptable level of safety that can be standardised across European operators and types. Option 2 cannot ensure an acceptable level of safety as the operator would be proposing the level of relief based on generic proposal, and with aircraft designs becoming more complex and integrated it is often difficult to know at operator level the full consequence the failure of a system may have at aircraft level.

#### 4.2 Economic impact

Having appropriate MEL relief at operator level is of economic benefit. Option 0 allows for possibility of relief, but with no standardisation between types; therefore operators of some fleets will have an economic and flexibility benefit over other fleets. Options 1 and 2 allow for a more standardised and equal treatment of all.

#### 4.3 Impact on regulatory coordination and harmonisation

Option 0 makes no allowance for a coordinated approach or any scope for harmonisation. Option 1 provides guidance for reference on the MMEL evaluation of all types, it also allows for possible future harmonisation as both FAA and TCCA have MMEL guidance or policy. Option 2 allows for some harmonisation in guidance material although application at different point would always lead to differences; it would make harmonisation of MMEL processes with other authorities difficult as they all use only MMEL guidance material.

<sup>3</sup> With the exception of non-safety related equipment.

## 5. Conclusion and preferred option

Option 1 is the preferred option as it allows for an acceptable level of safety to be ensured. It also allows a standardised approach for all applicants and provides a better foundation for potential harmonisation between different regulatory authorities.

### Annex A: Acronyms and definitions

EASA	European Aviation Safety Agency
FAA	Federal Aviation Administration
JAA	Joint Aviation Authorities
MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
OEM	Original Equipment Manufacturers
STC	Supplemental Type Certification
TCCA	Transport Canada Civil Aviation

From JAA MMEL Procedure Manual, Version 2, dated 22 January 2007.

'As Required by Operating Requirements', means that the listed item of equipment is subject to certain provisions (restrictive or permissive) expressed in the applicable operational requirements.

### Annex B: References

- JAA Administration & Guidance Material, Section Four: Operations, Part Three: Temporary Guidance Leaflet (JAR-OPS), LEAFLET No 26: Guidance Document for MEL Policy<sup>4</sup>.
- FAA MMEL Policy Letters<sup>5</sup>.
- TCCA MMEL Guidance Book<sup>6</sup>.

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<sup>4</sup> <http://easa.europa.eu/certification/flight-standards/OEB-supporting-documents.php>.

<sup>5</sup> <http://fsims.faa.gov/PICResults.aspx?mode=Publication&doctype=MMEL%20Policy%20Letters>.

<sup>6</sup> <http://www.tc.gc.ca/eng/civilaviation/certification/projects-mm-el-guide-menu-1394.htm>.

## **V(b) Regulatory Impact Assessment for Airplane-level Safety Analysis Working Group (ASAWG)**

### **0. Process and consultation**

This RIA was developed directly from the Aviation Rulemaking Advisory Committee (ARAC), Airplane-level Safety Analysis Working Group (ASAWG) 'Specific Risk Tasking' Report (Rev. 5.0) dated April 2010, which as part of their tasking produced recommendations in relation to rules and guidance material in the area of MMEL.

The ASAWG MMEL change recommendation includes guidance for a quantitative safety assessment which would provide a standardised methodology that would maintain fleet average reliability objectives when used to support a proposed MMEL item's qualitative assessment.

The ASAWG was made up of 13 different manufacturers, and representatives from four different regulators (ANAC, EASA, FAA and TCCA).

### **1. Issue analysis and risk assessment**

#### **1.1 What is the issue?**

Current MMEL practice is driven by JAR-MMEL/MEL, specifically by paragraph 010(a) which requests 'to maintain an acceptable level of safety as intended in the applicable JAR or equivalent Requirement', but there is no explicit guidance on methodology for conducting specific risk evaluation for dispatch under a MEL ('Limiting Residual Risk').

The final evaluation of the current policies and practices implemented by manufacturers and the various regulatory organisations concerning the development and approval of the MMEL over the past several decades has consistently demonstrated a high level of reliability and comprehensiveness in maintaining the necessary safety margins that both the engineering and operations communities have come to expect and require.

However, if a numerical analysis is used to support an MMEL proposed item, some MMEL policy guidance would be beneficial to ensure consistency in approaches and methodologies.

#### **1.2 Who is affected?**

TC and STC holders are affected as it is their responsibility to justify that, amongst other criteria, an acceptable level of safety has been maintained in the proposed dispatch configuration.

### **2. 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 1 of this RIA. The specific objective of this proposal is to maintain an acceptable level of safety in the proposed dispatch configuration while maintaining fleet average reliability objectives.

### 3. Identification of options

**Table 2: Selected policy options**

Option No	Description
0	Do nothing (No change in rules, risks remain as outlined in issue analysis.)
1	To recommend a standardised data-driven methodology for guidance on MMEL development.

Option 1 recommends that a standardised methodology be prepared for guidance on MMEL development. As a minimum, the following attributes were considered when developing this MMEL methodology:

- When specific risk analysis should be used to support an individual MMEL item proposal.
- Consideration of MMEL dispatches cases when the next worst case failure could lead to hazardous/catastrophic conditions; and
- Architectural considerations of complex and integrated systems where MMEL cases may be difficult to analyse using traditional methods.

Please refer to CS-MMEL-145 Justification of MMEL items and associated guidance material for the detailed proposal.

### 4. Analysis of impacts

#### 4.1 Safety impact

For option 0, no consistent level of safety or methodology is identified.

For option 1, a consistent safety level for all applicants will be clearly defined for dispatch under MEL, quantified for certain items.

#### 4.2 Economic, social and environmental impact

The application of a common methodology for MMEL development can be expected to induce some initial costs for the TC holders in order to apply the quantitative methodology, which also includes an exchange with the Agency. However, as similar processes are already in place, these costs are expected to be relatively low, and in some cases zero, while offering at the same time additional flexibility where previously full compliance with type design Certification Specifications standards had been demonstrated.

#### 4.3 Impact on regulatory coordination and harmonisation

Option 1 provides a better foundation for potential harmonisation between the authorities that participated in the ASAWG (ANAC, EASA, FAA and TCCA).

### 5. Conclusion and preferred option

Option 1 is the preferred option as it allows a standardised approach for all applicants and a minimum level of safety and provides a better foundation for potential harmonisation between different regulatory authorities.

**Annex A: Acronyms and definitions**

ANAC	Agência Nacional de Aviação Civil
ARAC	Rulemaking Advisory Committee
ASAWG	Airplane-level Safety Analysis Working Group
EASA	European Aviation Safety Agency
FAA	Federal Aviation Administration
JAR	Joint Aviation Requirements
MEL	Master Minimum Equipment List
OEM	Original Equipment Manufacturers
STC	Supplemental Type Certification
TCCA	Transport Canada Civil Aviation

The definition for Specific Risk is: ***'The risk on a given flight due to a particular condition'***.

**Annex B: References**

ARAC ASAWG Report Specific Risk Tasking (Rev. 5.0), April 2010<sup>7</sup>.

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<sup>7</sup> [http://www.faa.gov/regulations\\_policies/rulemaking/committees/arac/issue\\_areas/tae/als/](http://www.faa.gov/regulations_policies/rulemaking/committees/arac/issue_areas/tae/als/).

**B. DRAFT DECISION**

**I Draft Decision CS-MMEL**

**EASA Certification Specifications**

**for**

**Master Minimum Equipment List**

**CS-MMEL**

**Book 1**

**SUBPART A****GENERAL****CS-MMEL-100      Applicability**

This CS contains certification specifications for establishing the MMEL for complex motor-powered aircraft.

**CS-MMEL-105      Definitions**

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

- (a) 'Calendar Day', a 24-hour period from midnight to midnight based on either UTC or local time, as selected by the operator.
- (b) 'Day of discovery', the calendar day when a malfunction was recorded in the aircraft maintenance record/log book.
- (c) 'External Event', an occurrence which has its origin distinct from the aircraft or the system being examined, such as atmospheric conditions (e.g. wind gusts/shear, temperature variations, icing, lightning strikes), operating environment (e.g. runway conditions, conditions of communication, navigation and surveillance services), cabin and baggage fires, and bird strike.
- (d) 'Inoperative', an item which does not accomplish its intended purpose or is not consistently functioning within its approved operating limits or tolerances.
- (e) 'Item', an instrument, equipment or function.
- (f) 'Rectification Interval (RI)', a limitation on the duration of operations with inoperative items.

**SUBPART B****MASTER MINIMUM EQUIPMENT LIST****CS-MMEL-110 MMEL purpose**

The MMEL is a document that lists the items which may be temporarily inoperative under specified conditions for a specific aircraft type.

**CS-MMEL-115 Types of operation**

The MMEL covers all the types of operation for which the aircraft type is certified.

**CS-MMEL-120 Format and content of the MMEL**

- (a) The MMEL is written in a format acceptable to the Agency.
- (b) Each MMEL contains the following:
  - (1) Approval status, including date of approval and date of applicability.
  - (2) Relevant preamble based on Appendix A to CS-MMEL-120, on definitions and, if appropriate, on clarifying notes which adequately reflect the scope, extent and purpose of the list.
  - (3) The list of items, including for each item:
    - the rectification interval category,
    - the number installed,
    - the number required,
    - the operational procedure symbols,
    - the maintenance procedure symbols, associated dispatch condition identifying the intent and periodicity of its performance,
    - placarding instructions, and
    - any associated conditions and limitations.

**CS-MMEL-125 Operational and Maintenance Procedures**

The operational or maintenance procedures are prepared to ensure compliance with the associated MMEL items dispatch conditions.

**CS-MMEL-130 Rectification Interval**

A rectification interval is established for each MMEL item in accordance with the following categories:

- (a) Category A: No standard interval is specified; however, items in this category shall be rectified in accordance with the conditions stated in the MMEL.
  - (1) Where a time period is specified in days, the interval excludes the day of discovery.
  - (2) 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.
- (b) Category B: Items in this category shall be rectified within three calendar days, excluding the day of discovery.



- (c) Category C: Items in this category shall be rectified within ten calendar days, excluding the day of discovery.
- (d) Category D: Items in this category shall be rectified within one hundred and twenty calendar days, excluding the day of discovery.

Items in this category meet the following criteria:

- (1) the absence of the item does not affect crew workload;
- (2) the crew do not rely on the function of that item on a routine or continuous basis; and
- (3) the crew's training, subsequent habit patterns and procedures do not rely on the use of that item.

### **CS-MMEL-135 Rectification Interval Extension**

The MMEL indicates when the rectification interval extension as defined in Part-AR and Part-OR is applicable.

## **SUBPART C**

### **LEVEL OF SAFETY AND JUSTIFICATIONS OF MMEL ITEMS**

#### **CS-MMEL-140 Level of safety**

- (a) The MMEL items are prepared to ensure that an acceptable level of safety as intended by the applicable requirements is maintained taking into account the following factors:
  - (1) reduction of aircraft functional capabilities and/or safety margins;
  - (2) change in crew workload and/or degradation in crew efficiency;
  - (3) consequence(s) to the aircraft and its occupants of the next failure(s) having the worst safety-related impact on the aircraft's take-off, continued flight and landing when dispatching in a known degraded configuration;
  - (4) consequence(s) to the aircraft and its occupants of the next external event(s) for which the item was designed to protect against.
- (b) No system or component is included in the MMEL if powered by an emergency bus or equivalent and required to accomplish an emergency procedure.

#### **CS-MMEL-145 Justification of MMEL items**

- (a) The justifications are provided as part of the MMEL items proposal.
- (b) The inclusion of each item in the MMEL is justified following one or more methods as agreed or as defined by the Agency.
- (c) The substantiation of an acceptable level of safety for an MMEL item includes at least a qualitative safety assessment which:
  - (1) Ensures that the consequences of the proposed MMEL dispatch configuration only result in a slight reduction of the aircraft functional capabilities and/or safety margins, or in a slight increase in crew workload, or in a slight discomfort to occupants;

- (2) Evaluates the consequences of the next worst safety-related failure and the consequences of the external event, if applicable, on the aircraft functional capabilities and/or safety margins, as well as crew ability to cope with this failure or external event, and effects on occupants. Under MMEL conditions, single failures leading to a potentially hazardous or catastrophic failure condition are normally not allowed at dispatch.
- (3) Ensures that combination with another MMEL item providing mitigation means to meet paragraph (1) and (2) above is not allowed;
- (4) Evaluates the complexity of maintenance and/or operational procedures.
- (d) The qualitative safety assessment is supplemented by a quantitative safety assessment when both of the following considerations are met:
  - (1) Relief is proposed for items, functions and/or systems involved in catastrophic or hazardous failure conditions, and MMEL procedures do not mitigate the failure condition by operational procedures, limitations or maintenance action prior to dispatch; and
  - (2) When the operation with the inoperative item leaves the aircraft one failure away from a hazardous failure condition, or one or two failures away from a catastrophic failure condition.
- (e) The intent of the operational and maintenance procedures referenced in the MMEL is identified as part of the MMEL items proposal, and their content is made available to the Agency upon request.

#### **CS-MMEL-150     Multiple inoperative items**

The effects of multiple inoperative items are taken into account during the preparation of the MMEL, as appropriate.

**II GUIDANCE MATERIAL TO CS-MMEL**

**EASA Certification Specifications**

**for**

**Master Minimum Equipment List**

**CS-MMEL**

**Book 2**

## **SUBPART A**

### **GM1-CS-MMEL-105(a) Definitions**

#### **CALENDAR DAYS**

All calendar days are considered to run consecutively.

### **GM1-CS-MMEL-105(d) 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 instrument or equipment should not be removed.

### **GM1-CS-MMEL-105(e) Definitions**

#### **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 equipments and/or instruments that perform a function. (See AMC 25.1309)

## **SUBPART B**

### **GM1-CS-MMEL-110 MMEL purpose**

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

### **GM2-CS-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 equipment includes those items related to the convenience, comfort, or entertainment of the passengers. They may include items such as galley equipment, movie equipment, stereo equipment, and overhead reading lamps.

Non-safety-related equipment does not include any items that have an effect on the airworthiness or operation of the aircraft.

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

**GM1-CS-MMEL-120 Format and content of MMEL**

- (a) The MMEL should normally be written in a 'five-column format'. Other formats may be accepted provided they are clear and unambiguous. Refer to examples in GM2-CS-MMEL-120.
- (b) Where appropriate, the MMEL should contain: cover page, revision history, detailed summary of changes at last revision, list of effective pages, and table of contents within the administrative control pages at the beginning of the MMEL.
- (c) A model of acceptable preamble can be found in GM3-CS-MMEL-120.
- (d) Each item listed in the MMEL should be described and identified in accordance with the Air Transport Association (ATA) specification 100 or 2200 code system. Consistency of terminology and identification means should be maintained, as far as possible, among aircraft documentation. Where appropriate, the MMEL should contain means to identify applicability of items.
- (e) Where a Message Oriented approach is used, the Messages displayed may be listed in place of the item title in the relevant section, as this will be considered as a representation of the item(s) affected. Number installed and number required are not needed for such an approach.
- (f) Rectification interval may be identified through a reference to another item.
- (g) Number installed and number required may not be listed if not practical and not relevant for dispatch determination.
- (h) Where there is a requirement for a specific maintenance procedure, then an (M) symbol should be included as part of the MMEL entry to indicate this. Where there is a requirement for a specific operations procedure, then an (O) symbol should be included as part of the MMEL entry to indicate this.
- (i) When a maintenance procedure is associated to an MMEL item, a dispatch condition, identifying the intent of the procedure (e.g. deactivation of an equipment), should be included in the associated item.
- (j) A decision on whether the necessary procedure can be assigned as an (O) or an (M) should be based on which is the most appropriately qualified trade to carry out the procedure and which trade would normally carry out such a task in their line of duty, based on the intended types of operation normally performed by the aircraft. On this basis deactivation and securing tasks should normally be assigned an (M) while procedures based on operation of equipment on the flight crew compartment should normally be assigned an (O).
- (k) 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 procedure 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.
- (l) Placarding instructions are provided as part of the dispatch conditions or in a generic manner in the preamble to inform the crew members and maintenance personnel of the item condition, to the extent practicable.

**GM2-CS-MMEL-120 Format and content of MMEL****FIVE-COLUMN FORMAT EXAMPLES**

**MASTER MINIMUM EQUIPMENT LIST**

<b>AIRCRAFT:</b>		<b>REVISION No:</b>		<b>PAGE:</b>
		<b>DATE:</b>		
(1) Systems & Sequence Numbers Item	(2) Rectification Interval Category			
		(3) Number Installed		
		(4) Number Required for Dispatch		
		(1) Remarks or Exceptions		

**MESSAGE ORIENTED MASTER MINIMUM EQUIPMENT LIST**

<b>Aircraft</b>	<b>Revision No:</b> Rev 3	<b>Sect</b>	<b>Page</b>
	<b>Date:</b>		
<b>1. Message</b>	<b>2. Rectification Interval Category</b>  <b>3. Dispatch Consideration</b>		

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**GM3-CS-MMEL-120 Format and content of MMEL****MMEL PREAMBLE****(SPECIMEN)****EUROPEAN AVIATION SAFETY AGENCY****MASTER MINIMUM EQUIPMENT LIST****(AIRCRAFT TYPE)****PREAMBLE****Introduction**

The following is applicable for operators under European air operations regulations (Part-OPS). 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 aircraft 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 interests of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system or installed items may not be necessary when the remaining operative equipment can provide an acceptable level of safety.

**Purpose and limitations**

This Master Minimum Equipment List (MMEL) is developed by the applicant and holders of (Supplemental) Type Certificate and approved by the Agency to improve aircraft use and thereby providing more convenient and economic air transportation for the public. This MMEL includes those items related to airworthiness and IR-OPS 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 allowed by this MMEL, an inoperative item may not be removed from the aircraft.

**Utilisation**

The MMEL is the basis for the development of individual operator's MELs which take into consideration the operator's particular aircraft equipment configuration and operational conditions. An operator's MEL may differ in format from the MMEL, but shall not be less restrictive than the MMEL. The individual operator's MEL, when approved, allows operation of the aircraft with inoperative items of equipment for a certain period of time until rectification can be accomplished.



The MEL cannot deviate from Airworthiness Directives, Safety Directives, or any other additional mandatory requirements. It is important to remember that all items related to the airworthiness and the operational regulations of the aircraft 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.

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 aircraft is in a condition for safe operation with items inoperative.

Prior to operation with any item inoperative acceptance by the crew is required in accordance with the continuing airworthiness management procedures.

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 aircraft operation and crew workload shall be considered.

#### Rectification interval extension

The operator may be permitted, by their competent authority, a one-time extension of the applicable rectification intervals B, C or D for the same duration as that specified in their MEL where indicated in this MMEL.

This extension policy, which allows, as a maximum, a one-time extension of the interval stipulated in the MMEL, has been taken into account during the development of this document.

### **DEFINITIONS AND EXPLANATORY NOTES**

*[In addition to a preamble arranged and worded along the lines of this Specimen, the MMEL should contain, as part of the preamble, sufficient definitions and explanatory notes to provide the user (this is primarily the operator when compiling the MEL) with a full and proper understanding of the intent and purpose of the items it contains.*

*While many of the definitions used will be common to all MMELs, others will be specific to particular or individual aircraft types. (Supplemental) TC holders should ensure, when preparing the MMEL, that all relevant definitions are included. Also explanatory notes should be provided in sufficient detail wherever the intent and purpose of a term or phrase or abbreviation etc. is necessary or advisable.]*

1. **'Airplane/Rotorcraft Flight Manual'** (AFM/RFM) means the document required for type certification and approved by the Agency. The AFM/RFM for the specific aircraft is listed on the applicable Type Certificate Data Sheet.

2. **'Alternate procedures are established and used'** or similar statement, means 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.
3. **'Any in excess of those required by regulations'** means that the listed item of equipment required by applicable legislation (applicable airworthiness codes, Part OPS, Single European Sky legislation or the applicable airspace requirements) must be operative and only excess equipment may be inoperative. When the equipment is not required, it may be inoperative for the time specified by its rectification interval category.
4. **'As required by applicable regulations'**, means that the listed item of equipment is subject to certain provisions (restrictive or permissive) expressed in the applicable legislation. When the equipment is not required, it may be inoperative for the time specified by its rectification interval category.
5. **'Calendar Day'** means 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.
6. **'Combustible Material'** means the material which is capable of catching fire and burning. In particular: if an MEL item prohibits loading of combustible (or flammable or inflammable) material, no material may be loaded except the following:
  - 1) Cargo handling equipment (unloaded, empty or with ballast);
  - 2) Fly away kits (excluding e.g. cans of hydraulic fluid, cleaning solvents, batteries, capacitors, chemical generators, etc.);  
 Note: If serviceable tyres are included, they should only be inflated to a minimum pressure that preserves their serviceability; and
  - 3) Inflight service material (return catering — only closed catering trolleys/boxes, no newspapers, no alcohol or duty free goods).
7. **'Commencement of flight'** is the point when an aircraft begins to move under its own power for the purpose of preparing for take-off.
8. **'Considered Inoperative'**, as used in the dispatch conditions, means that item must be treated for dispatch, taxiing 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.
9. **'Daylight'** means 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.
10. **'Day of discovery'** means the calendar day that a malfunction was recorded in the aircraft maintenance record/log book.
11. **'Deactivated'** and **'secured'** means that the specified component must be put into an acceptable condition for safe flight.
12. **'Flight'**, for the purposes of this MMEL, means the period of time between the moment when an aircraft begins to move under its own power, for the purpose of preparing for take-off, until the moment the aircraft comes to a complete stop on its parking area, after the first landing.
13. **'Item'** means instrument, equipment or function.
14. **'ETOPS'** or **'ER operations'** refers to extended range operations of a two-engine airplane as defined by SPA.ETOPS.

15. **'Icing Conditions'** means an atmospheric environment that may cause ice to form on the aircraft or in the engine(s) as defined in the AFM/RFM.
16. **'If installed'** means that the equipment is either optional or is not required to be installed on all aircraft covered by the MMEL.
17. **'Inoperative'** means that the item does not accomplish its intended purpose or is not consistently functioning within its approved operating limits or tolerances.
18. **'Is not used'** in the provisos, 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 component or system 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 a component or system is not to be used under normal operations.
19. **'Intended Route'** corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.
20. **'(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 Manual or MEL.
21. **'Master Minimum Equipment List'** means a document approved by the Agency that establishes the aircraft equipment allowed to be inoperative under conditions specified therein for a specific type of aircraft.
22. **'Maximum distance from an adequate aerodrome for two-engine aeroplanes'** as defined in **SPA.ETOPS** and **CAT.OP.AH.140**.
23. **'Minimum Equipment List'** means a document established as specified under 8.a.3. of Annex IV to Regulation (EC) No 216/2008 and approved by the competent authority, in accordance with ORO.MLR.105, that authorises an operator to dispatch an aircraft with aircraft equipment inoperative as per CAT.IDE.A/H.105, NCC.IDE.A/H.105 or NCO.IDE.A/H.105 under the conditions specified therein.
24. **'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.
25. **'Number Installed'** is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft configuration considered in developing this MMEL. Should the number be a variable (e.g. passenger cabin items), or not applicable, a number is not required; a '-' is then inserted.  
  
Note: Where the MMEL shows a variable number installed, the MEL should reflect the actual number installed.
26. **'Number required for dispatch'** is the minimum number (quantity) of items required for operation provided the conditions specified are met. Should the number be a variable (e.g. passenger cabin items) or not applicable, a number is not required; a '-' is then inserted.  
  
Note: Where the MMEL shows a variable number required for dispatch, the MEL should reflect the actual number required for dispatch or an alternate means of configuration control approved by the competent authority.

27. '-' in the Number Installed Column (respectively Number Required for Dispatch Column) indicates a variable number (quantity) of the item installed (respectively item required) or not applicable.

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

28. '(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 manual or MEL.

Note: The (M) and (O) symbols are required in the operator's MEL.

29. '**Operating minima**' means the set of requirements associated to operations requiring a specific approval (refer to Part-SPA).
30. '**Placarding**' Each inoperative item must be placarded, as applicable, to inform and remind the crew members and maintenance personnel of the item's condition.

Note: To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the operator.

31. '**Rectification intervals**' Inoperative items or components, deferred in accordance with the MEL, must be rectified at or prior to the rectification intervals established by the following letter designators:

Category A

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

- (i) Where a time period is specified in days, the interval excludes the day of discovery.
- (ii) 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.

32. '**Remarks or Exceptions**' include statements either prohibiting or allowing operation with a specific number of items inoperative, provisos (conditions and limitations), notes, (M) and/or (O) symbols, as appropriate for such operation.
33. '**Required Cabin Crew Seat**' is a seat in the aircraft cabin which meets the following conditions:
- 1) Where the certification of the cabin requires this seat to be occupied by a qualified cabin crew member as specified in the Operations Manual;
  - 2) This seat is a part of the station to which a qualified cabin crew member is assigned for the flight; and

- 3) The qualified cabin crew member assigned to the station is a member of the minimum cabin crew designated for the flight.
- 34. **'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.

**GM1-CS-MMEL-125 Operational and maintenance procedures**

## DEVELOPMENT PROCESS

A description of the operational and maintenance procedures development process should be made available to the Agency upon request.

**GM1-CS-MMEL-130 Rectification Interval**

## USE OF CATEGORY D

The rectification interval category D is normally used for MMEL items of an optional nature or items installed in excess of the requirements.

**GM2-CS-MMEL-130 Rectification Interval**

## RECTIFICATION INTERVAL EXTENSION

- (a) The MMEL should highlight in its preamble when rectification interval extensions have been considered in the development of the MMEL.
- (b) Where quantitative analysis forms part of the justification, rectification interval and rectification interval extensions, if any, should be considered in this analysis (see CS-MMEL 145 and GM1-CS-MMEL-145(c)).

## SUBPART C

### GM1-CS-MMEL-140 Level of safety

#### ITEMS REQUIRED FOR EMERGENCY PROCEDURES

In the case an MMEL item is part of an emergency procedure, it should be demonstrated that the unavailability of this item does not impair the accomplishment of the emergency procedure.

### GM2-CS-MMEL-140 Level of safety

#### MEANS TO MAINTAIN THE LEVEL OF SAFETY

- (a) An acceptable level of safety can be maintained for an MMEL item through one or a combination of the following means:
  - (1) Adjustment of operational limitations;
  - (2) Transfer of the function/information to an operating system/component performing the required function or providing the required information, provided the change in crew workload and/or crew training remains acceptable;
  - (3) Development of operational procedures (e.g. such as alternate procedures; additional pre-flight checks), provided the change in crew workload and/or crew training remains acceptable;
  - (4) Development of maintenance procedures (such as deactivating and securing the system/component of concern, additional verification tasks).

### GM1-CS-MMEL-145 Justification of MMEL items

#### MMEL GUIDANCE BOOK

- (a) The justification of an MMEL item may be based on the guidance material provided in Appendix 1 to GM1-CS-MMEL-145.
- (b) The guidance material provided in Appendix 1 to GM1-CS-MMEL-145 is as an acceptable basis for the development of associated MMEL items justifications. The main purpose of this guidance material is to standardise the level of relief granted in MMELs, in particular when dealing with items that are subject to operational requirements.
- (c) This guidance material is not intended to cancel the need to comply with CS-MMEL-140 and CS-MMEL-145 but is intended to alleviate this task by allowing the applicant to refer to this material as part of the MMEL justifications. The availability of a guidance material for an item does not prevent the applicant to prepare alternate MMEL content.
- (d) The guidance material for MMEL items is organised by ATA chapters order and proposes MMEL contents in a five-column format.
- (e) Additional interpretative material is proposed under the field 'Additional considerations' which is as an integral part of the guidance.
- (f) References to applicable requirements, when available, are also provided for information purposes only.
- (g) Items included in the Appendix 1 to GM1-CS-MMEL-145 marked with the symbol (MC) below the corresponding title are considered to be eligible for MMEL minor change classification under DOA privileges in accordance with Part-21.

**GM1-CS-MMEL-145(b) Justification of MMEL items****QUALITATIVE SAFETY ASSESSMENT – LATENT FAILURES**

Regarding MMEL dispatch configuration leaving the aircraft two failures away from a Catastrophic failure condition, particular attention should be paid to combinations involving one failure which is latent for more than one flight. Whenever practical, such combinations should be avoided per MMEL dispatch condition (e.g. verification task clearing the latent failure prior to each flight). Where these latent failures are not avoided, these combinations of failures should be highlighted and reviewed with the Agency.

**GM2-CS-MMEL-145(b) Justification of MMEL items****QUALITATIVE SAFETY ASSESSMENT – PREVIOUS APPROVALS**

The assessment may reflect experience with previous MMEL approvals. However, a previous MMEL approval of the same item on another aircraft type does not in itself imply that the level of safety is acceptable. Therefore, additional factors which could be considered include similarity of system operation and type of operations.

A flight test or a simulator/STD evaluation, on an aircraft or STD representative of the type design, may be used to help evaluate a candidate MMEL item.

**GM1-CS-MMEL-145(c) Justification of MMEL items****QUANTITATIVE SAFETY ASSESSMENT**

Items for which a quantitative safety assessment is carried out to supplement the qualitative MMEL development process in accordance with the above-mentioned considerations should be reported.

Items for which the probabilities per flight hour of  $1.10^{-8}$  for Catastrophic failure conditions and  $1.10^{-6}$  for Hazardous failure conditions are not met in that dispatch configuration should be reviewed with the Agency. The following guidance applies to these proposed dispatches. This guidance includes equations to control how long these configurations are allowed to exist, such that the fleet average objectives will be achieved.

For Catastrophic Failure Conditions:

- i. A probability per flight hour of  $\leq 1.10^{-8}$  is the objective when dispatching with the inoperative item. When this objective is met, no calculation for a maximum allowable dispatch time is considered necessary.
- ii. A limited number of items may be considered when  $1.10^{-8}/\text{FH}$  objective is not met. In these cases, the maximum allowable probability per flight hour when dispatching with the inoperative item should not exceed  $1.10^{-7}/\text{FH}$ , and the maximum dispatch time should be less than that calculated using the following Equation (1).
- iii. The  $1.10^{-8}/\text{FH}$  objective and  $1.10^{-7}/\text{FH}$  upper limit apply to each catastrophic top event involving the inoperative-at-dispatch MMEL item. If more than one top level event is involved, the maximum allowable dispatch time should be the smallest of those calculated for the affected top events.



Equation (1):

$$\text{Max\_Disp\_Time}_{\text{CAT}}[\text{FH}] = \frac{1.10^{-9} [\text{probability\_per\_FH}]}{\text{PF} \cdot \text{FR}}$$

Where

$\text{Max\_Disp\_Time}_{\text{CAT}}[\text{FH}]$  = Max Dispatch Time [flight hours]

PF [1/FH] = Probability of Failure condition [per flight hour] under dispatch condition

FR [1/FH] = Failure Rate of proposed MMEL item [per flight hour]

For Hazardous Failure Conditions:

- i. A probability per flight hour of  $\leq 1.10^{-6}$  is the objective when dispatching with the inoperative item. When this objective is met, no calculation for a maximum allowable dispatch time is considered necessary.
- ii. A limited number of items may be considered when  $1.10^{-6}/\text{FH}$  objective is not met. In these cases, the maximum allowable probability per flight hour when dispatching with the inoperative item should not exceed  $1.10^{-5}/\text{FH}$ , and the maximum dispatch time should be less than that calculated using the following Equation (2).
- iii. The  $1.10^{-6}/\text{FH}$  objective and  $1.10^{-5}/\text{FH}$  upper limit apply to each hazardous top event involving the inoperative-at-dispatch MMEL item. If more than one top level event is involved, the maximum allowable dispatch time should be the smallest of those calculated for the affected top events.

Equation (2):

$$\text{Max\_Disp\_Time}_{\text{HAZ}}[\text{FH}] = \frac{1.10^{-7} [\text{probability\_per\_FH}]}{\text{PF} \cdot \text{FR}}$$

Where

$\text{Max\_Disp\_Time}_{\text{HAZ}}[\text{FH}]$  = Max Dispatch Time [flight hours]

PF [1/FH] = Probability of Failure condition [per flight hour] under dispatch condition

FR [1/FH] = Failure Rate of proposed MMEL item [per flight hour]

Dispatch times should primarily be based on operational considerations. Allowed MMEL dispatch times may be considerably less than the maximum times calculated as per above equations.

Note: The two equations given above for maximum dispatch times for MMEL items or functions involved in Catastrophic or Hazardous failure conditions provide dispatch times that are compatible with the fleet average top level reliability requirements of CS 25.1309(b). Equation (1) would yield a maximum operating time in the particular configuration to be  $\leq 1\%$  of the fleet operating time when the dispatch configuration has a failure rate of  $1.10^{-7}/\text{FH}$ .

Maximum dispatch times, as calculated using the above equations or other appropriate methods, should be maintained by the applicant's operations/MMEL group. That group will work with the Operations Evaluation Boards (OEBs) to decide on an acceptable MMEL entry.

**GM2-CS-MMEL-145(c) Justification of MMEL items****QUANTITATIVE SAFETY ASSESSMENT — ENGINE TIME LIMITED DISPATCH (TLD)**

For applicable engine-related items, quantitative safety assessment may be carried out in compliance with CS-E 1030 (Time Limited Dispatch (TLD)). In this case, the applicant should ensure that assumptions made at engine level remain true at aircraft level for the purpose the MMEL.

**C. APPENDICES****I APPENDIX 1 to GM1-CS-MMEL-145: MMEL ITEMS GUIDANCE BOOK****ATA 22 AUTOFLIGHT****Summary of the guidance items:**

<b>Item</b>	<b>ATA</b>	<b>EU/JAR-OPS 1/3 reference</b>	<b>EASA IR reference</b>	<b>CS Reference</b>	<b>Existing Foreign Guidance</b>
Autopilot	22-10-1	1/3.655	CAT.IDE.A.13 5  CAT.IDE.H.13 5	25.1329	TCCA 22-10-1  FAA PL-101
Flight Director	22-10-2			25.1329	TCCA 34-20-1
Navigation Databases	22-71-1		GM1- SPA.PBN.100 CAT.IDE.A.35 5		FAA PL-98  TCCA 34-50-1

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 22 Autoflight				PAGE: 22-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
22-10 Autopilot (JAR-OPS 1.655)		<p><u>Note 1:</u> An automatic altitude control system is required to be operative for RVSM operations.</p> <p><u>Note 2:</u> Any autopilot function that is operative may be used.</p>		
(1) Single Pilot operations	D	-	1	Any in excess of one may be inoperative.
(2) Two Pilot operations	C	-	1	<p>(M)(O) One or more functions may be inoperative on the affected autopilot provided:</p> <p>(a) Inoperative functions are deactivated as applicable,</p> <p>(b) Applicable operating minima do not require their use, and</p> <p>(c) The navigation specifications of the route to be flown do not require their use.</p>
	B	-	0	(M)(O) One or more functions may be inoperative provided:

				<p>(a) For the intended operations, any increase in crew workload caused by the inoperative functions has been considered,</p> <p>(b) Inoperative functions are deactivated as applicable,</p> <p>(c) Applicable operating minima do not require their use, and</p> <p>(d) The navigation specifications of the route to be flown do not require their use.</p>
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**Helicopters:**

ATA Chapter: 22 Autoflight				PAGE: 22-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
				(5) Remarks or Exceptions
ATA				
22-10 Autopilot (JAR-OPS 3.655)				
(1) Single Pilot Operations	C	-	0	One or more may be inoperative provided the flight is conducted under day VMC.
	D	-	1	Any in excess of one may be inoperative

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 22 Autoflight					PAGE: 22-X
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
ITEM		(5) Remarks or Exceptions			
<b>22-10-1      Autopilot ( or Autopilot Channel)</b>					
22-10-1A	(Other than CAT)	C	-	0	(M) (O) May be inoperative provided:  (a) Affected autopilot/channel is deactivated, and  (b) Affected autopilot/channel is not part of the equipment required for intended operation.  <b>Procedures</b> (M) — To give guidance on a practical mean to ensure that the affected autopilot/channel will not engage during the flight, and (O) — To specify any applicable restriction for operations requiring a specific approval (e.g. PBN/MNPS, RVSM, Low Visibility, ETOPS, etc.)
22-10-1B	(CAT)	C	-	1	(M) (O) Any in excess of one may be inoperative provided:  (a) Affected autopilot/channel is deactivated, and  (b) Affected autopilot/channel is not part of the equipment required for intended operation.  <b>Procedures</b> See 22-10-1A

22-10-1C (CAT)	B	-	0	<p>(M) (O) May be inoperative provided:</p> <p>(a) Any increase in crew workload caused by the affected autopilot/channel has been considered for intended operation,</p> <p>(b) Operations are conducted under VFR for single pilot operations,</p> <p>(c) Affected autopilot/channel is deactivated, and</p> <p>(d) Affected autopilot/channel is not part of the equipment required for intended operation.</p> <p><b>Procedures</b></p> <p>See 22-10-1A</p>
22-10-1-1 Autopilot Functions/Modes				
22-10-1-1A (CAT)	C	-	-	<p>(M)(O) One or more functions/modes may be inoperative provided:</p> <p>(a) Any increase in crew workload caused by the inoperative functions/modes has been considered for intended operation,</p> <p>(b) Inoperative functions/modes are deactivated as applicable,</p> <p>(c) Autopilot heading mode and altitude hold are operative, and</p> <p>(d) Affected functions/modes are not part of the equipment required for intended operation.</p> <p><b>Procedures</b></p> <p><b>(M)</b> — To give guidance reference to ensure the affected function of the autopilot are properly deactivated and do not interact with functions used for the flight.</p> <p><b>(O)</b> — See 22-10-1A</p>

**References:** CAT.IDE.A.135; CAT.IDE.H.135

**Explanatory notes:**

22-10-1A entry is introduced to provide additional relief for other than Commercial Air Transport operations.

22-10-1B covers failure of autopilot (or autopilot channel) when more than one autopilot (or autopilot channel) are installed. The rectification interval is proposed to be restricted to C, including single pilot operations.

This is to limit the risk of exposing the flight crew to excessive workloads and fatigue is increased while operating without certain autopilot capabilities. Indeed the autopilot is considered to offer significant advantages in view of increased traffic, all-weather operations, and flight crew training factors.

22-10-1-1 sub-item is introduced to address failure of functions of the autopilot, which do not lead to the disconnection of the associated autopilot (autopilot channel). Dispatch condition 22-10-1-1A is introduced to ensure compliance with applicable operations rules.

#### **Additional considerations:**

If the autopilot or autopilot functions are required to meet airworthiness requirements (e.g. stabilisation function for rotorcraft, single pilot IFR, etc.), this needs to be taken into account as part of the MMEL evaluation and compliance with CS-MMEL requirements has to be demonstrated.

Some autopilot installations are not dependent on flight director being operative, and basic attitude modes may still be available.

For highly integrated systems the autopilot may not function without the flight director, and therefore autopilot inoperative relief would also apply (see guidance item 22-10-2).

If flight director modes of the autopilot are used to show compliance with requirements applicable to the means of measuring and indicating turn and slip, aircraft attitude or stabilised aircraft heading, in combination with instruments, additional restrictions related to the loss of associated indications may be applicable.

For the intended operations, any increase in crew workload caused by the inoperative functions has to be considered. This condition needs to be specified in the MMEL (e.g. number of flights, leg duration, etc.)

Any additional limitations (e.g. flight time) may result from the above review.

Applicable operating minima (e.g. CAT2/CAT3 operations) or navigation specifications (e.g. B-RNAV, RNP) requirements may be specified at the level of the MMEL or refer to appropriate section of AFM or Operations Manual. The above guidance shows these restrictions covered at operational procedures level but having them reflected at dispatch conditions level is also acceptable.

If the aircraft is certified for ETOPS operations, associated restrictions may be included, as appropriate.

The above guidance indicates the need to deactivate the affected autopilot/channel for dispatch. Some autopilot design may not offer the possibility to fully comply with this requirement. Alternate conditions can in these cases be proposed provided adequate safeguards against erratic autopilot behaviour are demonstrated.

#### **22-10-1C**

For single pilot CAT operations, depending on the use of autopilot in routine procedures, the operations may be restricted to day VMC only.

22-10-1-1 sub-item covers failure of functions of the autopilot, which do not lead to the disconnection of the associated autopilot (autopilot channel).



**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 22 Autoflight				PAGE: 22-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA		(3) Number installed		
		C	-	(4) Number required for dispatch
				(5) Remarks or Exceptions
				(O) One or more may be inoperative provided:  (a) Applicable operating minima do not require their use, and  (b) The navigation specifications of the route to be flown do not require their use.
22-10 Flight Director				

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 22 Autoflight				PAGE: 22-
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ITEM		(3) Number installed		
		C	-	(4) Number required for dispatch
				(5) Remarks or Exceptions
				(O) May be inoperative provided:  (a) Affected flight director is not part of the equipment required for intended operation, and
22-10-2 Flight Director				
22-10-2A				

				<p>(b) Associated autopilot, if affected, is considered inoperative (Refer to 22-10-1)</p> <p><b>Procedures</b></p> <p>(O) — To specify any applicable restriction for operations requiring a specific approval (e.g. PBN/MNPS, RVSM, Low Visibility Operations (LVO), etc.)</p>
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**References:** N/A

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

**Additional considerations:**

This item covers display of symbols only (e.g. FD bars).

The C category may be upgraded to A or B Category at the MEL level based on operational considerations such as the amount of reliance that is placed on the FD and the level of training with the FD inoperative.

AFM limitations that may identify any approaches that cannot be flown if the FD is inoperative as a result of certification flight tests have to be taken into account.

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 22 Autoflight					PAGE: 22-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
22-71	Navigation Database(s) Note: Database(s) which is/are out of date is/are considered to be inoperative.	C	-	0	(O) One or more may be inoperative for the intended route where conventional (non-RNAV) navigation is sufficient, provided:  (a) Current aeronautical information (e.g. charts) is available for the entire route and for the aerodromes to be used, and  (b) Navigation database information is disregarded.
		C	-	1	Any in excess of one may be inoperative provided: (a) The operative database must be up to date for routes, departures, arrival and approach procedures that require the use of navigation Database for RNAV, and (b) This up-to-date Database is readily available to the flight crew member(s) responsible for navigation.
		A	-	0	(O) One or more may be out of date for a maximum of 10 calendar days provided: (a) Area Navigation (RNAV) departure, arrival and approach procedures do not depend on the data amended in the current database cycle, (b) Before each flight, current aeronautical information is used to verify the database Navigation Fixes, the coordinates, frequencies,

ATA Chapter: 22 Autoflight				PAGE: 22-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
		(3) Number installed		
			(4) Number required for dispatch	
ATA				(5) Remarks or Exceptions
	A	-	0	<p>(c) Radio navigation aids, which are required to be flown for departure, arrival and approach procedures and which have been amended in the current database cycle, are manually tuned and identified.</p> <p>(O) One or more may be out of date for a maximum of 10 calendar days provided:</p> <p>(a) Conventional (Non-RNAV) departure, arrival and approach procedures, when available, or ANSP assistance are used as an alternative to RNAV procedures which have been amended in the current database cycle,</p> <p>(b) Before each flight, current aeronautical information is used to verify the database Navigation Fixes, the coordinates, frequencies, status (as applicable) and suitability of Navigation Facilities required for the intended route, and</p> <p>(c) Radio navigation aids, which are required to be flown for departure, arrival and approach procedures and which have been amended in the current database cycle, are manually tuned and identified.</p>

**Proposed EASA Guidance Book item****Aeroplanes & Helicopters:**

ATA Chapter: 22 Autoflight				PAGE: 22-
(1) System & Sequence Numbers		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
ITEM		(5) Remarks or Exceptions		
<b>22-71-1      Navigation Database (MC)</b>		<b>Note:</b> A database which is out of date is considered to be inoperative.		
22-71-1A	C	-	0	<p>(O) One or more may be inoperative for the intended route where conventional (non-RNAV/RNP) navigation is sufficient, provided</p> <p>(a) Current aeronautical information (e.g. charts) is available for the entire route and for the aerodromes to be used, and</p> <p>(b) Navigation database information is disregarded, and</p> <p>(c) Radio navigation aids, which are required to be flown for departure, arrival and approach procedures are manually tuned and identified.</p> <p><b>Procedures (O)</b> — To give guidance reference to established operator's procedure to ensure the dispatch conditions requirements are met prior to release of the aircraft.</p>
22-71-1B	C	-	1	<p>(O) Any in excess of one may be inoperative provided:</p> <p>(a) The operative database must be up to date for routes, departures, arrival and approach procedures that require the use of navigation Database for RNAV/RNP, and</p> <p>(b) The operative database is available and used by the flight crew member(s) responsible for navigation, and</p>

ATA Chapter: 22 Autoflight				PAGE: 22-
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM			(3) Number installed	
			(4) Number required for dispatch	(5) Remarks or Exceptions
22-71-1C	A	-	0	<p>(c) Radio navigation aids, which are required to be flown for departure, arrival and approach procedures are manually tuned and identified.</p> <p><b>Procedures (O)</b> — To give guidance reference to established operator's procedure to ensure dispatch conditions requirements are met prior to release of the aircraft.</p> <p>(O) One or more may be out of date for a maximum of 10 calendar days provided:</p> <p>(a) Area Navigation (RNAV/RNP) departure, arrival and approach procedures are checked not to depend on the data amended in the current database cycle or Conventional (Non-RNAV/RNP) or ANSP assistance are used as an alternative to RNAV/RNP procedures which have been amended in the current database cycle,</p> <p>(b) Before each flight, current aeronautical information is used to verify the database Navigation Fixes, the coordinates, frequencies, status (as applicable) and suitability of Navigation Facilities required for the intended route, and</p> <p>(c) Radio navigation aids, which are required to be flown for departure, arrival and approach procedures and which have been amended in the current database cycle, are manually tuned and identified.</p> <p><b>Procedures (O)</b> — To give guidance reference to established operator's procedure to ensure the dispatch conditions requirements are met prior to release of the aircraft.</p>

**References:** GM1-SPA.PBN.100

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

Condition (c) of current TGL 26 guidance third and fourth set of provisos is required for system design where the radio nav aids are automatically tuned by using the database data.

This condition is proposed to be expanded to option 22-71-01A & B as it is also applicable for non-RNAV/RNP (conventional navigation).

**Additional considerations:**

The item in the current guidance is separated into two set of provisos:

- 22-71-1B applicable when RNAV/RNP operations are not conducted (C rectification interval), and
- 22-71-1C applicable to operations where RNAV/RNP may be conducted (A rectification interval maximum 10 calendar days). The wording of condition (a) may be customised to the specific types of operations intended to be conducted.

This is to reduce the exposure time for aircraft navigated in RNAV/RNP airspace with downgraded capability due to outdated databases.

Condition (c) is required for system design where the radio nav aids are automatically tuned by using the database data.

**ATA 23 COMMUNICATIONS****Summary of the guidance items:**

Item	ATA	EASA IR reference	CS Reference	Existing Foreign Guidance
Headset	23-10-1	CAT.IDE.A.170CAT.IDE.A.325 CAT.IDE.H.170	25.1307(d) 23.771(a) 27/29.771(a) ) &(c) 29.1307(e)	FAA PL-58 TCCA 23-50-3
Audio Selector Panel	23-10-2	CAT.IDE.A.335	25.1307(d)	TCCA 23-50-1 FAA PL-56
Flight Crew Compartment Speaker	23-10-3		25.1457 CVR AMC 25.1322 (6.3 Aural signals)	TCCA 23-50-2
HF Communication	23-11-1	CAT.IDE.A/H.345 NCC.IDE.A/H.220	25.1307(d) 29.1307 (e)	FAA PL-106 TCCA 23-10-1
VHF Communication	23-12-1	CAT.IDE.A.340CAT.IDE.A.345 CAT.IDE.H.340 CAT.IDE.H.345	25.1307(d)	FAA PL-95 TCCA 23-10-1
Audio Selector Panel	23-13-1	CAT.IDE.A.335 CAT.IDE.H.335	25.1307(d)	FAA PL-95
Public Address System	23-30-1	CAT.IDE.A.180 CAT.IDE.H.180	25.1423	FAA PL-9 TCCA 23-30-1
Datalink	23-30-2			
Flight Crew Interphone System	23-40-1	CAT.IDE.A.170 CAT.IDE.H.170	25.854	
Crew Member Interphone System	23-40-2	CAT.IDE.A.175 CAT.IDE.H.175	25.854	FAA PL-9 TCCA 23-40-1
Flight Crew Compartment Door Surveillance System	23-70-1			FAA PL-122 TCCA 25-10-4
Cockpit Voice Recorder	23-71-1	CAT.IDE.A.185 CAT.IDE.H.185	25.1457	FAA PL-29 TCCA 23-70-1



**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
23-10 Headset (JAR-OPS 1.650/652/3.647)	D	-	-	Any in excess of one headset (including boom microphone) for each required crew member on flight deck duty may be inoperative or missing.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ITEM			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
23-10-1 Headset (MC)	D	-	-	Any in excess of one headset (including boom microphone) for each required crew member on flight crew compartment duty may be inoperative or missing.
23-10-1A				

**References:** CAT.IDE.A.170; CAT.IDE.A.325; CAT.IDE.H.170

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

Additional certification requirements may impose additional restrictions (e.g. spare headset on single pilot helicopter).

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
ATA	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
23-10 Audio Selector Panel (JAR-OPS 1.855)	D	-	-	Any in excess of one for each required crew member on flight crew compartment duty may be inoperative.
	D	-	-	Any in excess of those required for the intended route may be inoperative provided the flight is conducted under VFR.
(1) Press To Transmit (PTT) Switches	B	-	-	(M) Any in excess of one for each required flight crew member may be inoperative provided the affected switch is either verified failed open or is deactivated.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-2
(1) System & Sequence Numbers Item	(2) Rectification Interval			
ITEM				(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
23-10-2      Audio Selector Panel 23-10-2A	D	-	-	Any in excess of one for each required crew member on flight crew compartment duty may be inoperative.
23-10-2B	D	-	-	May be inoperative provided:  (a) The flight is conducted under VFR, and  (b) Required communication can be ensured using alternate means.
23-10-2-1    Press To Transmit (PTT) Switch 23-10-2-1A	B	-	-	(M) Any in excess of one for each required flight crew member may be inoperative provided the affected switch is either verified failed open (non-transmitting) or is deactivated.  <b>Procedures</b>  (M) Check of the failure of the switch in open (non-transmitting) position or deactivation in open position.

**References:** CAT.IDE.A.335**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

Additional requirements may be introduced if the Audio Selector Panel failure has consequences on the aural warning broadcasting.

All aural alerts, messages and other communication which are normally routed through the flight crew compartment speakers must be audible through the headsets.

There may be components of the audio control panel inoperative; however, the panel is still adequate for flight. Above items do not address sub-components (e.g. ADF ident function) and it is considered the captain's decision to dispatch with necessary equipment operative.

Operators of Helicopter Emergency Medical Service (HEMS) or helicopters employing rescue equipment (i.e. winches, etc.) or human external cargo may need to consider whether additional crew members (not situated within the flight crew compartment) are included within their MEL alleviation.

**Existing TGL 26 item:**

None

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ITEM			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
23-10-3 <b>Flight Compartment Speaker</b> Crew				
23-10-3A	C	-	0	(O) May be inoperative provided: (a) A headset is operative for each required crew member on flight crew compartment duty, and (b) A spare operative headset is readily available in the flight crew compartment for use by any of the required crew member on flight crew compartment duty.  <b>Procedures</b> (O) To provide alternate procedures for the use of headsets, as appropriate.

**Explanatory notes:**

A new MMEL guidance is proposed to cover flight crew compartment Speaker item in order to standardise the approach when relief is provided for this system.

**Additional considerations:**

It should be ensured that the affected speaker is not used for crew intercommunication when smoke masks are used unless single pilot operations are conducted.

If there are emergency (e.g. smoke) procedures 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 and be recordable by the CVR (or the CVR should be considered inoperative). In the case aural alerts and required communications could be heard only through the headsets, these should be worn permanently by at least one crew member on flight crew compartment duty.

Considerations should be given to audio system configuration in degraded electrical configuration, in particular when credit has been taken on the availability of flight crew compartment speakers.

### **Existing TGL 26 item:**

#### **Aeroplanes:**

ATA Chapter: 23 Communications					PAGE: 23-1
(1) System & Sequence Numbers		(2) Rectification Interval			
Item		(3) Number installed			
ATA		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
23-11	HF Communications (if installed) (JAR-OPS 1.865)	D	-	-	Any in excess of those required for the intended route, may be inoperative.
		C	-	1	(O) Any in excess of one may be inoperative for flight on a route that requires two Long Range Communication Systems, provided:  (a) SATCOM air-ground communications with Air Navigation Service Provider(s) are available for the intended route, (b) SATCOM Voice or Data transfer functions are operative, (c) Prior to each flight, coordination with the appropriate Air Navigation Service Provider(s) is established where INMARSAT codes, or equivalent, are not available whilst using SATCOM voice function, and (d) Alternate communication procedures are established and used.  <b>Note 1:</b> SATCOM is to be used only as a backup to normal HF communications unless otherwise authorised by the appropriate Air Navigation Service Provider(s).  <b>Note 2:</b> For intended routes, consider the need for ACAS.

	A	-	1	<p>(O) Any in excess of one may be inoperative for a maximum of 3 calendar days for flight on a route that requires two Long Range Communication Systems, provided alternate communication procedures are established and used.</p> <p><b>Note 1:</b> When the route enters airspace for which an In Flight Blind Broadcast Procedure exists, select the appropriate I.F.B.F. VHF frequency and apply the procedure.</p> <p><b>Note 2:</b> For intended routes, consider the need for ACAS.</p>
	A	-	0	<p>(O) One or more may be inoperative for a maximum of 3 calendar days for flight on a route that requires two Long Range Communication Systems provided:</p> <p>(a) SATCOM air-ground communications with Air Navigation Service Provider(s) for the intended route</p> <p>(b) SATCOM voice function is operative,</p> <p>(c) Prior to each flight, coordination with the appropriate Air Navigation Service Provider(s) is established where INMARSAT codes, or equivalent, are not available whilst using SATCOM voice function,</p> <p>(d) Prior to each flight, permission is obtained from the appropriate Air Navigation Service Provider(s) to communicate via SATCOM only, and</p> <p>(e) Alternate communication procedures are established and used.</p> <p><b>Note 1:</b> When operative, the use of SATCOM Data transfer function should be part of these procedures.</p> <p><b>Note 2:</b> When the route enters airspace for which an In Flight Blind Broadcast Procedure exists, select the appropriate I.F.B.F. VHF frequency and apply the procedure.</p> <p><b>Note 3:</b> For intended routes, consider the need for ACAS.</p>

**Helicopters:**

ATA Chapter: 23 Communications					PAGE: 23-2
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
23-12	Radio Communications Systems (VHF / HF / UHF / FM) (JAR-OPS 3.860/865)	C	-	1	Any in excess of one, and not powered by an emergency bus, may be inoperative provided that flights are conducted under VFR over routes navigated by reference to visual landmarks.
		A	-	1	(O) Any in excess of one of the two required Radio Communication Systems not powered by the emergency bus may be inoperative provided that:  (a) The helicopter has not made more than one flight since the item was last serviceable, and  (b) The commander has satisfied himself that, taking into account the latest information available as to the route/are and heliport to be used (including any planned diversion) and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of the appropriate air traffic control unit.
	(a) Frequency Transfer Light	C	-	0	One or more may be inoperative.
	(b) Frequency Transfer Switch	C	-	0	One or more may be inoperative.
	(c) Frequency Selector Knob	C	-	1	Any in excess of one may be inoperative.



(d) Frequency Indication	C	-	1	Any in excess of one may be inoperative.
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-
(1) System & Sequence Numbers Item	(2) Rectification Interval			
ITEM		(3) Number installed		
				(4) Number required for dispatch
				(5) Remarks or Exceptions
<b>23-11-1 HF Communications</b>				
23-11-1A	D	-	-	Any in excess of those required for the intended route, may be inoperative.
23-11-1B	A	-	1	<p><b>Note 1:</b> The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.</p> <p>(O) Any in excess of one may be inoperative for a maximum of 3 calendar days, provided that:</p> <p>(a) SATCOM air-ground communications with ANSPs are available for the intended route,</p> <p>(b) SATCOM Voice or Data transfer functions are operative,</p> <p>(c) Prior to each flight, coordination with the appropriate Air Navigation Service Provider(s) is established where INMARSAT codes, or equivalent, are not available whilst using SATCOM voice function, and</p> <p>(d) Alternate communication procedures are established and used.</p> <p><b>Note:</b> The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.</p>

23-11-1C	A	-	1	<p><b>Procedures</b></p> <p>(O) To provide alternate communication procedures.</p> <p>SATCOM is to be used only as a backup to normal HF communications unless otherwise authorised by the appropriate Air Navigation Service Provider(s)</p> <p>(O) Any in excess of one may be inoperative for a maximum of 3 calendar days for flight provided alternate communication procedures are established and used.</p> <p><b>Procedures</b></p> <p>(O) To provide alternate communication procedures.</p> <p>When the route enters airspace for which an In Flight Blind Broadcast Procedure exists, select the appropriate I.F.B.F. VHF frequency and apply the procedure.</p>
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**References:** CAT.IDE.A.345, NCC.IDE.A.505. CAT.IDE.H.345, NCC.IDE.H.505.

#### **Explanatory notes:**

The proposed MMEL guidance for HF communications is consistent with existing relief provided in TGL 26 for aeroplanes except that the relief for dispatch with no HF operative on routes requiring two long range communication systems is removed.

Indeed, although SATCOM voice and data link may be used as long range communication systems in order to meet applicable operational requirements, not all ATC facilities are adequately equipped to handle SATCOM data or voice as the primary means of communication. Consequently the relief for dispatch with one HF and a backup SATCOM is restricted from rectification interval category C to A (3 calendar days) to ensure reliance on SATCOM is limited.

Sub-items a, b, c and d of TGL 26 guidance are moved to a new item 23-13-1 Communication Control Panel.

The TGL 26 guidance for helicopters is proposed to be superseded by the proposed MMEL guidance that becomes applicable to aeroplanes and helicopters.

#### **Additional considerations:**

When relief is foreseen for an HF communication system powered under an emergency bus, additional considerations should account for the capability to maintain an acceptable level of safety with residual means of communication and navigation, depending on the kind of operations (e.g. ETOPS) and impose additional restrictions, as necessary.

## 23-11-1A

This entry allows dispatch with HF communication in excess of the applicable requirements.

A radio communication system is required for operations in a controlled airspace, under IFR or at night.

In addition, for Commercial Air Transport operations under IFR or under VFR over routes that cannot be navigated by reference to visual landmarks, two independent means of communication are required and each system should have an independent antenna installation, except where rigidly supported non-wire antennae or other antenna installations of equivalent reliability are used.

## 23-11-1B&amp;C

These entries are applicable for flights on routes that require two long range communication systems.

Although SATCOM voice and data link may be used as long range communication systems in order to meet applicable operational requirements, not all ATC facilities are adequately equipped to handle.

SATCOM data or voice as the primary means of communication.

SATCOM data or voice may however be accepted as a backup to normal HF communication systems.

HF-voice is the only LRCS currently available for Air Traffic Control communications in many areas.

Therefore, in areas requiring two operational LRCSs, at least one must be HF-voice and in areas requiring one LRCS, that system must be HF-voice.

Additional restriction to ensure availability of ACAS may be considered.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 23 Communications						PAGE: 23-3	
(1) System & Sequence Numbers			(2) Rectification Interval				
Item			(3) Number installed				
			(4) Number required for dispatch				
			(5) Remarks or Exceptions				
ATA							
23-12	VHF Communications (JAR-OPS 1.860/865)	C	-	1	Any in excess of one, and not powered by an emergency bus, may be inoperative provided the flight is conducted under VFR over routes navigated by reference to visual landmarks.		
		C	-	2	Any in excess of two, and not powered by an emergency bus, may be inoperative.		
	(a) Frequency Transfer Light	C	-	0	One or more may be inoperative.		
	(b) Frequency Transfer Switch	C	-	0	One or more may be inoperative.		
	(c) Frequency Selector Knob	C	-	2	Any in excess of two may be inoperative.		
	(d) Frequency Indication	C	-	2	Any in excess of two may be inoperative.		

**Helicopters:**

ATA Chapter: 23 Communications					PAGE: 23-2
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
23-12	Radio Communications Systems (VHF / HF / UHF / FM) (JAR-OPS 3.860/865)	C	-	1	Any in excess of one, and not powered by an emergency bus, may be inoperative provided that flights are conducted under VFR over routes navigated by reference to visual landmarks.
		A	-	1	(O) Any in excess of one of the two required Radio Communication Systems not powered by the emergency bus may be inoperative provided that:  (a) The helicopter has not made more than one flight since the item was last serviceable, and  (b) The commander has satisfied himself that, taking into account the latest information available as to the route/are and heliport to be used (including any planned diversion) and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of the appropriate air traffic control unit.
	(a) Frequency Transfer Light	C	-	0	One or more may be inoperative.
	(b) Frequency Transfer Switch	C	-	0	One or more may be inoperative.
	(c) Frequency Selector Knob	C	-	1	Any in excess of one may be inoperative.

(d) Frequency Indication	C	-	1	Any in excess of one may be inoperative.
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
ITEM		(5) Remarks or Exceptions		
23-12-1 VHF Communications				
23-12-1A	D	-	-	Any in excess of those required may be inoperative.
23-12-1B	C	-	1	<p>(O) Any in excess of one, may be inoperative provided that:</p> <p>(a) Operations are conducted under VFR over routes navigated by reference to visual landmarks,</p> <p>(b) Applicable airspace requirements for the intended route are complied with, and</p> <p>(c) Alternate procedures are established and used, if applicable.</p> <p><b>Procedures</b></p> <p>(O) To provide alternate procedures if the affected VHF was used to accomplish procedures for the intended route.</p> <p>To provide procedures to address next in-flight failure of the remaining system, if not otherwise available.</p>



23-12-1D	C	-	2	<p><b>Note:</b> The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.</p> <p>(O) Any in excess of two, may be inoperative provided alternate procedures are established and used, if applicable.</p> <p><b>Procedures</b> See 23-12-1B.</p>
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**Aircraft applicability:**

**References:** CAT.IDE.A.340; CAT.IDE.A.345

**Explanatory notes:**

Proposed MMEL guidance for VHF communications is consistent with existing relief provided in TGL 26 for aeroplanes.

## 23-12-1A

This entry is proposed to be introduced to cover other than Commercial Air Transport operations.

## 23-12-1B&amp;C

Similar to the current TGL 26 guidance except that an additional condition is introduced on airspace requirements to cover aerodromes area for which two VHF may be required and another condition is also introduced to cover potential consequences of the VHF failure on crew procedures and total loss of VHF in-flight failure case.

The TGL 26 guidance for helicopters is proposed to be superseded by the proposed MMEL guidance that becomes applicable to aeroplanes and helicopters.

**Additional considerations:**

When relief is foreseen for a VHF communication system powered under an emergency bus, additional considerations should account for the capability to maintain an acceptable level of safety with residual means of communication and navigation, depending on the kind of operations and impose additional restrictions, as necessary.

Additional condition on SSR transponder availability to cover next in-flight failure may be needed.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications						PAGE: 23-	
(1) System & Sequence Numbers			(2) Rectification Interval				
Item			(3) Number installed				
			(4) Number required for dispatch				
ITEM			(5) Remarks or Exceptions				
23-13-1	Audio Selector Panel						
23-13-1-1	Frequency Transfer Light						
23-13-1-1A		C	-	0	May be inoperative.		
23-13-1-2	Frequency Transfer Switch						
23-13-1-2A		C	-	0	May be inoperative.		
23-13-1-3	Frequency Transfer Switch						
23-13-1-3A		C	-	2	Any in excess of two may be inoperative.		
23-13-1-4	Frequency Indication						
23-13-1-4A		C	-	2	Any in excess of two may be inoperative.		

**References:** CAT.IDE.A.335; CAT.IDE.H.335.

**Explanatory notes:**

Sub-items a, b, c and d of item 23-12 of the TGL 26 guidance are moved to a new item 23-13-1 Audio Selector Panel, in line with the Air Operations Implementing Rules denomination.

The sub-items of current guidance item on VHF are extended to cover also HF equipment, as appropriate.

Proposed MMEL guidance for Communication control panel is consistent with existing relief provided in TGL 26.

**Additional considerations:**

This guidance may be adapted to the aircraft's specific design.

**Existing TGL 26 item:****Aeroplanes & Helicopters**

ATA Chapter: 23 Communications				PAGE: 23-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
23-30 Datalink	C	-	0	(O) May be inoperative provided that alternate procedures are established and used.
	D	-	0	May be inoperative provided that procedures do not require its use.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 23 Communications				PAGE: 23-8
(1) System & Sequence Numbers Item	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
<b>23-20-1 Datalink (MC)</b>	C	-	0	(O) May be inoperative provided that alternate procedures are established and used.
23-20-1A				
				<b>Procedures</b> To provide alternate procedure to the crew to manage communications, as applicable in the airspaces in which aircraft is operated.

23-20-1B	D	-	0	May be inoperative provided that procedures do not require its use.
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**References:** Commission Regulation (EC) No 29/2009.

**Explanatory notes:**

Proposed MMEL guidance is consistent with existing relief provided in TGL 26 and updated to account current regulatory requirements.

After 5th February 2015 the option 23-20-1B will no more be applicable for dispatch in airspaces requiring datalink.

**Additional considerations:**

Option 23-20-1B is applicable for aircraft not required to have datalink installed as per Commission Regulation (EC) No 29/2009 or whenever aircraft is operated below FL285.

**Existing TGL 26 item:**

**Aeroplanes & Helicopters**

ATA Chapter: 23 Communications				PAGE: 23-4
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
ATA				(5) Remarks or Exceptions
23-30 Public Address (PA) System (JAR-OPS 1/3.695)				
(1) Passenger Configuration	B	-	0	(O) May be inoperative provided:  (a) Alternate normal and emergency procedures and/or operating restrictions are established and used, and (b) Flight crew compartment/cabin interphone system (including chime system) is operative.
(2) Cargo Configuration	D	-	0	(O) May be inoperative provided that alternate normal and emergency procedures and/or operating restrictions are established and used.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 23 Communications				PAGE: 23-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
				(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
<b>23-30-1 Public Address (PA) System</b>				
23-30-1A	D	-	-	Any in excess of those required may be inoperative procedures do not depend upon their use.
23-30-1B	C	-	-	(O) Any in excess of those required may be inoperative provided that alternate procedures are established and used.
23-30-1C	B	-	0	(O) May be inoperative provided that:  (a) Alternate procedures are established and used, and  (b) Flight crew compartment from and to cabin interphone system (including audio and visual alerting system) is operative.  <b>Procedures:</b> (O) To provide alternate normal and emergency communication procedures between flight crew compartment and cabin and/or operating restrictions as appropriate for the intended operations.
23-30-1D	D	-	0	(O) May be inoperative provided that operations are conducted in cargo only configuration with all occupants in the Flight Crew Compartment.  <b>Procedures:</b> (O) To provide alternate normal and emergency communication procedures and/or operating restrictions as appropriate for the intended operations.
23-30-1E	C	-	0	(O) May be inoperative provided that:

23-30-1F	D	-	0	<p>(a) Operations are conducted in cargo only configuration, and</p> <p>(b) Flight crew compartment/cabin interphone system (including audio and visual alerting system) is operative, and</p> <p>(c) Alternate procedures are established and used.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate normal and emergency communication procedures and/or operating restrictions as appropriate for the intended operations.</p> <p>(O) May be inoperative provided that:</p> <p>(a) Operations are conducted with no passengers,</p> <p>(b) All occupants are in the flight crew compartment.</p>
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**References:** CS-25.1423; CAT.IDE.A.180.

**Explanatory notes:**

23-30-1A and -1B entries are proposed to be introduced to cover other than Commercial Air Transport operations for which no PA is required.

23-30-1C is consistent with current TGL 26 guidance. This entry is applicable when public address system is required by operational rules. An additional condition on the visual alerting system of the cabin interphone is proposed to be introduced as the chime alert may not be sufficient in noisy flight crew compartment environment or with oxygen mask on.

23-30-1D is consistent with current TGL 26 guidance except that an additional dispatch condition is proposed to be added to take into account cargo operations with occupants located in a supernumerary/courier area. Relief for operations without PA is maintained provided that all occupants are located in the flight crew compartment.

23-30-1E entry is proposed to be introduced to cover cargo operations with occupants located outside of the flight crew compartment (courier, supernumerary area), a shorter rectification interval is proposed.

Similarly to cargo operations, 23-30-1F entry is proposed to be introduced to allow dispatch with no passengers.

**Additional considerations:**

The alternate procedures will have to be developed to account for any procedures based on the use of the PA, in particular in areas such as lavatories and crew rest, etc.

**Aeroplanes:**

ATA Chapter: 23 Communications				PAGE: 23-3
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA 23-40 Flight Crew Interphone System (Flight Deck Intercommunication) <i>(JAR-OPS 1.685)</i>	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
(1) Flight Crew to Ground	C	-	0	May be inoperative provided that alternate procedures are established and used, if applicable.
(2) Ground Call Horn (if installed)	D	-	0	

**Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-3
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA 23-40 Flight Crew Interphone System (Flight Deck Intercommunication) <i>(JAR-OPS 3.685)</i>	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
	D	-	-	Any system in excess of those required may be inoperative.



**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 23 Communications				PAGE: 23-8
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
23-40-1	Flight Crew Interphone System (Flight Crew Compartment Intercommunication)			
	(MC)			
23-40-1A		D	-	- Any system in excess of those required may be inoperative.

**Aircraft applicability:****References:** CAT.IDE.A.170;CAT.IDE.A.175**Explanatory notes:**

The proposed MMEL guidance is consistent with existing relief provided in TGL 26.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 23 Communications					PAGE: 23-5
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
23-40 Cabin Interphone System (JAR-OPS 1.690)					
(1) Flight Deck to Cabin / Cabin to Flight Deck		B	-	-	(O) May be inoperative provided that:  (a) Flight deck door keypad (where installed) is verified to operate normally, (b) Flight deck door automatic locking system (where installed) is verified to operate normally, (c) Alternate procedures are established and used for communications with the flight deck, and (d) The PA system is operative.  <u>Note:</u> Any station that is operative may be used.
(2) Cabin to Cabin		C	1	0	(O) May be inoperative provided that:  (a) Alternate normal and emergency procedures are established and used, and (b) The PA system is operative.
(3) Flight Crew to Ground/Ground to Flight Crew		C	1	0	(O) May be inoperative provided that alternate normal and emergency procedures are established and used.

(4) Alerting System	C	-	-	Visual signal may be inoperative on the flight deck.
	C	-	-	Both visual and aural signals may be inoperative in the cabin provided that the PA system is operative from the flight deck.
(5) Handsets	C	-	-	<u>Note:</u> Any station that is operative may be used. Handsets at non-required stations may be inoperative.
	C	-	-	(O) One handset may be inoperative provided that alternate procedures are established and used to compensate for the loss of PA and interphone function at the affected station.  Note: Any handset in excess of that required at each station may be inoperative.

**Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-3	
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
ATA  23-40    Crew Member Interphone System <i>(JAR-OPS 3.690)</i>		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			

<p>(1) Cabin / Service Interphone System (Flight Crew to Cabin / Ground, Cabin / Ground to Flight Crew, Cabin to Cabin)</p>	C	-	0	<p>(O) May be inoperative provided that:</p> <p>(a) Alternate normal and emergency procedures are established and used, and</p> <p>(b) The PA system is operative.</p> <p><u>Note:</u> Any station that is operative may be used.</p>
<p>(2) Alerting System</p>	C	-	-	<p>Visual signal may be inoperative on the flight deck.</p>
	C	-	-	<p>Both visual and aural signals may be inoperative in the cabin provided that PA system is operative from the flight deck.</p> <p><u>Note:</u> Any station that is operative may be used.</p>
<p>(3) Handsets</p>	C	-	-	<p>Handsets at non-required stations may be inoperative.</p>
	C	-	-	<p>(O) One handset may be inoperative provided that alternate procedures are established and used to compensate for the loss of PA and interphone function at the affected station.</p> <p><u>Note:</u> Any handset in excess of that required at each station may be inoperative.</p>

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 26 Fire Protection				PAGE: 26-1
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
<b>23-40-2</b>	<b>Crew Member Interphone System (MC)</b>			
23-40-2A		D	-	- Any in excess of those required may be inoperative provided that procedures do not depend upon their use.
23-40-2B		C	-	- (O) Any in excess of those required may be inoperative provided that alternate procedures are established and used.
<b>23-40-2-1</b>	<b>Flight Crew Compartment to Cabin / Cabin to Flight Crew Compartment Interphone</b>			
23-40-2-1A		B	-	- (O) May be inoperative provided:  (a) An adequate number of interphone terminals, accessible by each required cabin crew from its assigned area or from the nearest assigned area are operative, and  (b) Alternate procedures are established and used, and  (c) Flight crew compartment interphone aural alerting system is operative.

<p><b>23-40-2-2 Flight Crew Compartment Handset (if installed)</b></p>				<p><b>Procedures:</b></p> <p>(O) To provide alternate normal and emergency communication procedures between flight crew compartment and cabin including access to the flight crew compartment from the cabin and/or operating restrictions as appropriate for the intended operations</p>
<p>23-40-2-2A</p>	C	-	0	<p>(O) May be inoperative provided that:</p> <p>(a) Flight crew compartment to cabin communication is operative, and</p> <p>(b) Alternate procedures are established and used.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate normal and emergency communication procedures between flight crew compartment and cabin and/or operating restrictions as appropriate for the intended operations.</p>
<p><b>23-40-2-3 Cabin to Cabin Interphone</b></p>				
<p>23-40-2-3A</p>	C	-	0	<p>(O) May be inoperative provided that alternate procedures are established and used.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate normal and emergency communication procedures between affected crew members using or not the public address system and/or operating restrictions as appropriate for the intended operations.</p>
<p><b>23-40-2-4 Flight Crew Compartment and/or Cabin to Crew Rest Facility/Bunk</b></p>				
<p>23-40-2-4A</p>	C	-	0	<p>(O) May be inoperative provided that:</p> <p>(a) Public address system is operative, and</p> <p>(b) Alternate procedures are established and used.</p>

23-40-2-4B	C	-	0	<p><b>Procedures:</b></p> <p>(O) To provide alternate normal and emergency communication procedures between affected crew members and/or operating restrictions as appropriate for the intended operations.</p> <p>(O)(M) May be inoperative provided that:</p> <p>(a) Affected crew rest facility/bunk is not occupied, and</p> <p>(b) Affected crew rest facility/bunk is placarded 'DO NOT OCCUPY'.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate normal and emergency communication procedures between affected crew members and/or operating restrictions as appropriate for the intended operations.</p> <p>(M) To give guidance reference for placarding the affected area.</p>
<p><b>23-40-2-5 Alerting System (Audio/Visual)</b></p> <p>23-40-2-5A</p>	C	-	-	<p>(O) May be inoperative provided that:</p> <p>(a) Flight crew compartment call audio alerting system is operative,</p> <p>(b) Public Address system is operative, and</p> <p>(c) Alternate procedures are established and used.</p> <p><u>Note:</u> If the lavatory smoke alerting system is affected, the lavatory smoke detector is considered inoperative (refer to 26-17-1) or an alternate indication must be operative (e.g. flight crew compartment alert).</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate normal and emergency communication procedures for contacting crew members as appropriate for the intended operations.</p>
<p><b>23-40-2-6 Cabin Handset</b></p> <p>23-40-2-6A</p>	C	-	-	<p>(O) One or more may be inoperative provided that:</p> <p>(a) At least 50% of the cabin handset is operative,</p>

				(b) One handset is operative at each pair of floor level exit door,
23-40-2-6B	C	-	-	(c) Operative handsets are located at operative cabin crew seats, and (d) Alternate procedures are established and used. <b>Procedures:</b> (O) To provide alternate normal and emergency communication procedures as appropriate for the intended operations. (O) May be inoperative at any non-required cabin crew seat.
<b>23-40-2-7 Flight Crew to Ground/Ground to Flight Crew Interphone (MC)</b>				
23-40-2-7A	C	1	0	(O) May be inoperative provided that alternate procedures are established and used. <b>Procedures:</b> (O) To provide alternate communication procedures between flight crew compartment and ground as appropriate for the intended operations.

**References:** CAT.IDE.A.175

**Explanatory notes:**

23-40-2A&B entries are proposed to be introduced to cover other than commercial air transport operations for which no crew member interphone system is required.

23-40-2-1 Conditions on interphone terminals are introduced in order to enable the safe accomplishment of emergency communication procedures between flight crew compartment/cabin areas, required in case of planned evacuation, cabin smoke, etc.

The complete failure of the crew member interphone system when required is therefore no more allowed by this guidance.

23-40-2-2 new entry is proposed to be introduced to cover flight crew compartment handset.

23-40-2-3 Cabin to cabin interphone entry is consistent with the TGL 26 guidance. Clarifications on the dispatch conditions and operational procedures are proposed.

23-40-2-4 A new entry is proposed to be introduced to cover flight crew compartment and/or cabin/crew rest facility /bunk.

23-40-2-5 Alerting system (audio/visual) entry is consistent with the TGL 26 guidance. Clarifications on the dispatch conditions and operational procedures are proposed.

23-40-2-6 This entry is proposed to introduce new guidance on cabin handsets.



**Additional considerations:**

23-40-2-1

In order to determine the minimum required interphone terminals (handsets) in the cabin, the accessibility (cabin layout, monuments impairing visibility) and the distance from any point of the area assigned to the required cabin crew to the next operative interphone terminals have to be considered.

Any crew interphone station that is operative may be used.

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 23 Communications				PAGE: 23-
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA	D	-	(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
23-70      Flight Deck Door Surveillance System (e.g. CCTV) (if installed)			0	(0) May be inoperative.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 23 Communications				PAGE: 23-
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	

23-70-1	Flight Crew Compartment Door Surveillance System (e.g. CCTV) (MC)				
23-70-1A		D	-	0	(O) May be inoperative provided that alternate procedures are established and used.

**References:** N/A

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Aeroplanes & Helicopters**

ATA Chapter: 23 Communications					PAGE: 23-4
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
23-71 Cockpit Voice Recorder System (if installed) (JAR-OPS 1/3.700/705/1.710)					
(1) CVR		A	-	0	One or more may be inoperative provided that:

				<p>(a) The aeroplane/helicopter does not exceed 8 further consecutive flights with the cockpit voice recorder inoperative,</p> <p>(b) A maximum of 72 hours have elapsed since the cockpit voice recorder was found to be inoperative, and</p> <p>(c) Any Flight Data Recorder required to be carried is operative.</p> <p><u>Note:</u> This alleviation is not applicable to combined CVR/FDRs. For those combined systems, see the entries for combination recorders in item 31-31.</p>
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 23 Communications				PAGE: 23-1
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
23-71-1	Cockpit Voice Recorder System (MC)			
23-71-1A		D	-	- Any in excess of those required may be inoperative.
23-71-1B		A	-	0 May be inoperative provided that:  (a) The aircraft does not exceed 8 further consecutive flights with the cockpit voice recorder inoperative,  (b) A maximum of 72 hours have elapsed since the cockpit voice recorder was found to be inoperative, and  (c) Any Flight Data Recorder required to be carried is operative.  <u>Note:</u> This alleviation is not applicable to combined CVR/FDRs. For those combined systems, see the entries for combination recorders in item 31-31-2.

**References:** CAT.IDE.A.185; CAT.IDE.H.185.

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

## ATA 25 EQUIPMENT/FURNISHINGS

**Summary of the guidance items:**

Item	ATA	EASA IR reference	CS Reference	Existing Guidance Foreign
Exterior Lavatory Door Ashtrays	<u>25-40-1</u>		25.853(g)	FAA PL-85 TCCA 25-40-1
Interior Lavatory Ashtrays	<u>25-40-2</u>		25.853(g)	
Escape Slides	<u>25-60-1</u>		25.810	
Electric Torches/Flashlights	<u>25-60-2</u>	CAT.IDE.A.115 CAT.IDE.H.115	25.783(f) 25.1411(a)(b) 29.1411(a)(b)	TCCA 25-60-5
Protective Breathing Equipment	<u>25-60-3</u>		23.1197(b)(2) - commuter category 25.1197(b)(2) 25.1439(a) 29.1439(a)	FAA PL-43 TCCA 35-30-2
Megaphones	<u>25-60-4</u>			FAA PL-47 TCCA 25-60-4
Life rafts	<u>25-60-5</u>	CAT.IDE.A.285 CAT.IDE.H.300	23.1411(a) 23.1415 25.1411(d)(1)(2) 25.1415 27.1411(a) 27.1415 29.1411(d) 29.1415	
Survival Equipment	<u>25-60-6</u>			
Emergency Flotation Equipment	<u>25-60-7</u>			
Crash Axes and Crowbars	<u>25-61-1</u>			
First-Aid Kits	<u>25-62-1</u>			FAA PL-73 TCCA 25-60-2
Emergency Medical	<u>25-62-2</u>			FAA PL-73

Kits				TCCA 25-60-3
Emergency Locator Transmitters	<u>25-63</u>			FAA PL-120 TCCA 25-60-1
Life jackets	<u>25-64-1</u>			

**Existing TGL 26 item:**

None.

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
<b>25-40-1 Exterior Lavatory Door Ashtrays (MC)</b>				
25-40-1A	A	-	0	One or more may be inoperative or missing provided that repairs are made within three consecutive calendar days.
25-40-1B	A	-	-	One or more may be inoperative or missing provided that: (a) One operative exterior lavatory door ashtray can be readily seen and accessed from the affected lavatory door, and (b) Repairs are made within ten consecutive calendar days.
25-40-1C	D	-	0	(M)(O) One or more may be inoperative or missing provided that: (a) Affected lavatory door is locked closed and placarded to prohibit passengers' entrance, and (b) Affected lavatory is used only by crew members. <b>Procedures</b> (M) to provide instructions to lock closed and placard affected lavatory door. (O) to provide procedures to brief crew members.
25-40-1D	D	-	0	One or more may be inoperative or missing provided that flight is non-smoking.

**References:** CS 25.853 (g)

**Explanatory notes:**

Regardless of smoking or non-smoking flights, smoking is not allowed in lavatories, and lavatories are required to have self-contained removable ashtrays located conspicuously both inside and outside each lavatory. One ashtray located outside a lavatory door may serve more than one lavatory door if the ashtray can be seen readily from the cabin side of each lavatory door served.

MMEL exceptions 25-40-1A and 25-40-1B are derived from FAA MMEL Guidance Letter #85. Smoking flights are allowed.

MMEL exception 25-40-1C provides a less stringent rectification interval, still allowing smoking flights, but blocks the access to the affected lavatory for the passengers.

MMEL exception 25-40-1D provides relief for non-smoking flights. It is indeed considered that purpose of an exterior lavatory door ashtray is to provide the passenger with a safe, convenient and obvious place to dispose smoking materials before entering into the lavatories during a smoking flight.

**Additional considerations:**

N/A



**Existing TGL 26 item:**

None.

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-2
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
<b>25-40-2 Interior Lavatory Ashtrays (MC)</b>				
25-40-2A	B	-	0	One or more may be inoperative or missing provided that associated lavatory fire-extinguishing system, when installed, is operative.
25-40-2B	D	-	0	(M)(O) One or more may be inoperative or missing provided that: (a) The affected lavatory door is locked closed and placarded to prohibit passengers' entrance, and (b) The affected lavatory is used only by crew members. <b>Procedures</b> (M) to provide instructions to lock closed and placard affected lavatory door. (O) to provide procedures to brief crew members.

**References:** CS 25.853(g)**Explanatory notes:**

Regardless of smoking or non-smoking flights, smoking is not allowed in lavatories, and lavatories are required to have self-contained removable ashtrays located conspicuously both inside and outside each lavatory.

MMEL exception 25-40-2A takes credit of the lavatory fire-extinguishing system to mitigate the undesired situation where, during a non-smoking flight, a passenger goes on purpose into the lavatory for smoking. This relief does not take credit of the lavatory smoke detection system.

It is indeed assumed that such a passenger might also try to make it inoperative (e.g. using a wet towel).

MEL exception 25-40-2B provides a less stringent rectification interval and allows having the associated lavatory fire-extinguishing system inoperative, but then, the access to the affected lavatory is blocked for the passengers.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-10
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
25-60	Escape Slides (JAR-OPS 1.805)	-	-	<p>May be inoperative provided that the associated door/exit is considered inoperative. Refer to item 52-22.</p> <p><u>Note:</u> Refer to item 25-60 'Life Rafts and ELT for Extended Overwater Flights' when slides are used as rafts. Maintenance procedure should be retained to cover procedures required by aeroplane manufacturers, such as slide arming circuit deactivation.</p>

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>25-60-1 Escape Slides</b>  25-60-1A				(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
	-	-	-	One may be inoperative or missing provided that the associated door/exit is considered inoperative. Refer to item 52-22-xx.  <u>Note:</u> Refer to item 25-60-6 when escape slide is used as raft.

**References:** CS 25.810; EU-OPS 1.805.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

In addition, it is proposed to allow the affected slide to be missing.

The note is also proposed to be clarified. Information regarding the need to perform a maintenance task included in the note of TGL 26 guidance it proposed to be moved to the additional considerations field.

**Additional considerations:**

Additional maintenance task may be required depending on the failure modes intended to be covered under this entry (e.g. slide arming circuit deactivation).

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-8
(1) System & Sequence Numbers Item		(2) Rectification Interval			
		C	-	(3) Number installed	
				(4) Number required for dispatch	
				(5) Remarks or Exceptions	
25-60	Torches (JAR-OPS 1.640)			-	One or more may be inoperative provided that each required crew member assigned to affected position has an operative torch.

**Helicopters:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-3
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
ATA		C	-	(3) Number installed	
				(4) Number required for dispatch	
				(5) Remarks or Exceptions	
25-60	Torches (Cockpit/Cabin) (JAR-OPS 3.640)			-	One or more may be inoperative provided that each required crew member assigned to affected position has an operative torch.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-
(1) System & Sequence Numbers Item		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
25-60-2	Electric Torches/ Flashlights (MC)				
25-60-2A		C	-	-	May be inoperative or missing provided that each required crew member has an operative electric torch/flashlight readily available when seated at designated station.
25-60-2B	(Helicopters and Aeroplanes for other than commercial air transport operations)	D	-	-	May be inoperative or missing for daylight operations under VFR.

**References:** CS 25/29.1411(a)(b); CAT.IDE.A/H.115**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

In addition, it is proposed to introduce a new entry 25-60-1B to allow relief for daylight operations under VFR for helicopters and aeroplanes used in other than commercial air transport operations, in accordance with applicable requirements.

**Additional considerations:**

In compliance with CS 25/29.1411(a) and (b), an additional operational procedure may be required for entry 25-60-2A (e.g. holders) so as to ensure that required crew members are aware of the electric torch/flashlight change in terms of its location and/or alternate stowage provisions.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-4
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
25-60    Portable Protective Breathing Equipment (PBE) <i>(JAR-OPS 1.780)</i>	D	-	-	(M) Any in excess of those required may be inoperative or missing provided that the inoperative PBE is placarded inoperative, removed from the installed location, and placed out of sight so that it cannot be mistaken for a functional unit.

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-9
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>25-60-3 Protective Breathing Equipment (PBE) (MC)</b>  25-60-3A	D	(3) Number installed		
		-	(4) Number required for dispatch	
			(5) Remarks or Exceptions	
			(M) (O) Any in excess of those required may be inoperative or missing provided that: (a) Required distribution is maintained, (b) Inoperative PBE and its installed location are placarded inoperative, (c) Inoperative PBE unit is secured out of sight in an approved stowage, and (d) Procedures are established and used to alert crew members of inoperative or missing equipment. <u>Note:</u> Inoperative PBE units may be subject to dangerous goods requirements. <b>Procedures:</b> (M) To provide instructions to placard the inoperative PBE unit and its installed location, to secure the PBE unit in an approved stowage. (O) To provide procedures to alert crew members.	

**References:** CS 23.1197(b)(2) — commuter category; CS 25.1197(b)(2); CS 25.1439(a); CS 29.1439(a); CAT.IDE.A.245.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

When determining the location for storage of the inoperative units, compliance with the dangerous goods requirements must be considered.



If an operator carries PBE other than in the approved location, it would be in contravention of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air and therefore also in contravention of European regulations, with the possible consequences of prosecution. Consequently it is proposed to clarify the dispatch conditions to ensure that the inoperative PBE are stowed in an adequate location.

Additional condition d) with associated (O) is proposed to ensure proper crew handovers and preclude any confusion in an emergency situation.

**Additional considerations:**

According to air operations rules for Commercial Air Transport (CAT.IDE.A.245), the number of required portable PBE may vary depending on whether the aeroplane is operated with a flight crew of more than one and a cabin crew member or not.

For helicopters, if one or more cargo or baggage compartments are to be accessible in flight, protective breathing equipment must be available for an appropriate crew member without leaving their seat.

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA				
25-60 Megaphones (JAR-OPS 1/3.810)				
(1) Passenger Configuration	D	-	-	(M) Any in excess of those required may be inoperative or missing provided that:  (a) The inoperative megaphone is placarded inoperative, removed from the installed location and placed out of sight so that it cannot be mistaken for a functional unit, and (b) Required distribution of operative megaphones is maintained.
(2) Cargo Configuration	D	-	0	May be inoperative.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
25-60-4	Megaphones (MC)			
25-60-4A		D	-	-
				(M) (O) Any in excess of those required may be inoperative or missing provided that:  (a) Required distribution is maintained, (b) Inoperative megaphone and its installed location are placarded inoperative, (c) Inoperative megaphone is secured out of sight, and (d) Procedures are established and used to alert crew members of inoperative or missing equipment.  <b>Procedures:</b> (M) To provide instructions to placard the inoperative megaphone and its installed location, and to secure the megaphone in an out of sight location. (O) To provide procedures to alert crew members.
25-60-4B	(Other than commercial air transport operations and cargo-only operations)	D	-	0
				May be inoperative.

**References:** CAT.IDE.A.270; CAT.IDE.H.270.**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

Additional condition (d) with associated (O) is proposed to ensure proper crew handovers and preclude any confusion in an emergency situation.

The existing entry of TGL 26 applicable to cargo-only operations is proposed to be extended to other than commercial air transport operations.

**Additional considerations:**

The number of required megaphones in the passenger compartment is depending upon the seating capacity of the aircraft.

Depending upon design, for cargo-only operations, additional limitation may be required in case of crew members/cargo attendants carried (e.g. to call them back from the cargo areas during an emergency).

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
25-60 Life rafts and Survival ELT(S) for Extended Overwater Flights (JAR-OPS 1/3.830)	D	-	-	(M) Any in excess of those required may be missing or inoperative provided that the inoperative equipment is placarded inoperative, removed from the installed location, and placed out of sight so that it cannot be mistaken for a functional unit.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-13
(1) System & Sequence Numbers Item	(2) Rectification Interval			
			(3) Number installed	(4) Number required for dispatch
				(5) Remarks or Exceptions
<b>25-60-5 Life rafts (MC)</b>				<u>Note:</u> For life raft used as slide, refer to 25-60-1.
25-60-5A	D	-	-	(O) May be inoperative or missing provided that:  (a) Extended overwater flights are not conducted, and  (b) Procedures are established and used to alert crew members of inoperative or missing equipment.  <b>Procedures:</b> (O) To provide procedures to alert crew members.
25-60-5B	C	-	-	(O) (M) Any in excess of those required for the intended flight may be inoperative or missing for extended overwater flights provided that :  (a) Required distribution is maintained,  (b) Inoperative life raft and its installed location are placarded inoperative, (c) When practical, the inoperative life raft is secured out of sight, and  (d) Procedures are established and used to alert crew members of inoperative or missing equipment.

				<b>Procedures:</b>  (M) To provide instructions to placard the inoperative life raft and its installed location and to secure life raft in an out of sight location.  (O) to provide procedures to alert crew members.
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**References:**

CS 23.1411(a); CS23.1415; CS 25.1411(d)(1)(2); CS 25.1415; CS 27.1411(a); CS 27.1415; CS 29.1411(d); CS 29.1415; CAT.IDE.A.285; CAT.IDE.H.300; CAT.IDE.H.310.

**Explanatory notes:**

The proposed guidance introduces a distinction between extended overwater flights when life rafts are required as per the operational rules and other operations for which a more flexible approach has been retained.

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance for extended overwater flights.

Additional condition with associated (O) is proposed to ensure proper crew handovers and preclude any confusion in an emergency situation.

**Additional considerations:**

Criteria to define extended overwater operations are available in CAT.IDE.A.285 and CAT.IDE.H.300.

This guidance may be adapted when dispatch conditions are not practical because of considerations related to the type of aircraft.

**Existing TGL 26 item:****Aeroplanes/Helicopters:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
25-60 Survival Equipment (JAR-OPS 1/3.835)	D	-	-	(M) Any in excess of those required may be missing or inoperative provided that the inoperative equipment is placarded inoperative, removed from the installed location and placed out of sight so that it cannot be mistaken for a functional unit.



**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-13
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>25-60-6 Survival Equipment (MC)</b>  25-60-6A	D	(3) Number installed		
		-	(4) Number required for dispatch	
			(5) Remarks or Exceptions	
			<p><u>Note:</u> For ELT(S), refer to item 25-63-3.</p> <p>(M) Any in excess of those required may be missing or inoperative provided that:</p> <p>(a) Inoperative equipment and its installed location are placarded inoperative, and</p> <p>(b) Inoperative equipment is secured out of sight, and</p> <p>(c) Procedures are established and used to alert crew members of inoperative or missing equipment.</p> <p><b>Procedures:</b></p> <p>(M) To provide instructions to placard the inoperative equipment and its installed location and to secure the inoperative equipment in an out of sight location.</p> <p>(O) To provide procedures to alert crew members.</p>	

**References:** CAT.IDE.H.310; CAT.IDE.H.305.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

An additional condition with associated (O) is proposed to ensure proper crew handovers and preclude any confusion in an emergency situation.

**Existing TGL 26 item:****Helicopters:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-5
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
25-60	Emergency Flotation Equipment (JAR-OPS 3.843)				
	(1) Helicopters in Performance Class 1	D	-	0	May be inoperative for flights overland.
		C	-	0	May be inoperative for flights over water which are at a distance which is less than 10 minutes flying time from land, at normal cruise speed.
	(2) Helicopters in Performance Class 2				
	(a) En route	D	-	0	May be inoperative for flights overland.
		C	-	0	May be inoperative for flights over water which are at a distance which is less than 10 minutes flying time from land, at normal cruise speed.
	(b) Take-off & Landing over water	-	-	1	Must be operative.
	(3) Helicopters in Performance Class 3				

(a) En route	D	-	0	May be inoperative for flights over land.
(b) Take-off & Landing over water	-	-	1	Must be operative.

**Proposed EASA Guidance Book item:****Helicopters**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-13
(1) System & Sequence Numbers Item		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
<b>25-60-7</b>	<b>Emergency Flotation Equipment</b>				
25-60-7A	(Other than commercial air transport operations)	D	-	0	Any in excess of those required may be inoperative.
25-60-7B		C	-	0	May be inoperative for flights over land (including take-off and landing).
25-60-7C	(Performance Class 1)	C	-	0	May be inoperative for flights over water at a distance from land not beyond 10 minutes flying time, at normal cruise speed.
25-60-7D	(Performance Class 2)	C	-	0	May be inoperative provided:  (a) Take-off and landing are not performed over water, and  (b) En route operations are not conducted over water at a distance from land not beyond 10 minutes flying time, at normal cruise speed.
25-60-7E	(Performance Class 3)	C	-	0	May be inoperative provided that:  (a) Take-off and landing are not performed over water, and  (b) Flight is not conducted over water beyond safe forced landing distance.

**References:**

CAT.IDE.H.320

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

Clarifications are proposed to be introduced for the entry 25-60-6B Flights over land include take-off and landing, and for 25-60-6E Performance Class 3.

**Additional considerations:**

The need for additional deactivation/securing conditions should be considered, based on the design of the system.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA				
25-61	Crash Axes and Crowbars (JAR-OPS 1.795)	D	-	-
				Any in excess of those required may be inoperative or missing.

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-15
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>25-61-1    Crash Axes and Crowbars (MC)</b>  25-61-1A	D	(3) Number installed		
		-	(4) Number required for dispatch	
			(5) Remarks or Exceptions	
		-	Any in excess of those required may be inoperative or missing.	

**References:** CAT.IDE.A.255.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA	D	-	(3) Number installed	(4) Number required for dispatch
			-	(5) Remarks or Exceptions
25-62 First-Aid Kit (JAR-OPS 1.745)				Any in excess of those required may be incomplete or missing.  If more than one is required, only one of the required first-aid kits may be incomplete for a maximum of 2 calendar days.

**Helicopters:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA	A	-	(3) Number installed	(4) Number required for dispatch
			-	(5) Remarks or Exceptions
25-62 First-Aid Kit (JAR-OPS 3.745)				May be incomplete for 1 calendar day.
	D	-	1	Any in excess of one may be incomplete or missing.



**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-15
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
<b>25-62-1 First-Aid Kits (MC)</b>				
25-62-1A (Aeroplanes)	D	-	-	Any in excess of those required may be incomplete or missing.
25-62-1B (Aeroplanes)	A	-	-	If more than one is required, only one of the required first-aid kits may be incomplete for two calendar days.
25-62-1C (Helicopters)	A	-	0	May be incomplete for one calendar day.
25-62-1D (Helicopters)	D	-	1	Any in excess of one may be incomplete or missing.

**References:**

CAT.IDE.A.220; CAT.IDE.H.220.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	(4) Number required for dispatch
				(5) Remarks or Exceptions
ATA				
25-62 Emergency Medical Kits (JAR-OPS 1.755)	D	-	-	Any in excess of those required may be inoperative.
	A	-	-	The required emergency medical kits may be incomplete for flight to a destination where repairs or replacements can be made but not to exceed a maximum of 2 calendar days.

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-15
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
<b>25-62-2    Emergency Medical Kits (MC)</b>				
25-62-2A	D	-	-	Any in excess of those required may be incomplete or missing.
25-62-2B	A	-	-	The required emergency medical kits may be incomplete for two calendar days..

**References:**

CAT.IDE.A.225

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-10
(1) System & Sequence Numbers Item		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
25-63	ELT (JAR-OPS 1.820) (if installed)	A	-	0	May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first.
		D	-	-	Any in excess of those required may be inoperative.

**Helicopters:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-3
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
25-60	Automatically Deployable Emergency Locator Transmitter (ADELT) (where required) <i>(JAR-OPS 3.820)</i>				
	(1) Flights over land and overwater flights not beyond 10 minutes flying time from land at normal cruise speed.	C	-	-	May be inoperative.

<p>(2) Overwater flights beyond 10 minutes flying time from land at normal cruise speed.</p>	A	-	-	<p>May be inoperative provided that:</p> <p>(a) The helicopter shall not fly for more than 6 flight hours after the ADELT was found to be inoperative, and</p> <p>(b) A maximum of 24 hours have elapsed since the ADELT was found to be inoperative.</p>
<p>25-63 Emergency Locator Transmitter (ELT) (JAR-OPS 3.820)</p>	A	-	0	<p>May be inoperative provided that:</p> <p>(a) The helicopter shall not fly for more than 6 hours after the ELT was found to be inoperative, and</p> <p>(b) A maximum of 24 hours have elapsed since the ELT was found to be inoperative.</p>

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
<b>25-63</b>	<b>Emergency Locator Transmitter (ELT) (MC)</b>			
25-63-1	Automatic Emergency Locator Transmitter ELT(AF) ELT(AP)			
25-63-1A		D	-	- Any in excess of those required may be inoperative.
25-63-1B	(Aeroplanes)	A	1	0 May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first.
25-63-1C	(Aeroplanes)	C	-	1 Any in excess of one may be inoperative.
25-63-1D	(Helicopters)	A	-	0 May be inoperative provided that:  (a) The helicopter shall not fly for more than 6 hours after the ELT was found to be inoperative, and  (b) A maximum of 24 hours have elapsed since the ELT was found to be inoperative.
25-63-2	Automatic Deployable Emergency Locator Transmitter ELT(AD)			
25-63-2A		D	-	- Any in excess of those required may be inoperative.

25-63-2B	(Aeroplanes)	A	-	0	May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first.
25-63-2C	(Helicopters)	C	-	0	May be inoperative for overland operations or overwater operations at a distance from land not beyond 10 minutes flying time at normal cruise speed.
25-63-3	Survival Emergency Locator Transmitter ELT(S)	D	-	-	(M) Any in excess of those required may be inoperative or missing provided: (a) Inoperative equipment and its installed location are placarded inoperative, and (b) Inoperative equipment is secured out of sight, and (c) Procedures are established and used to alert crew members of inoperative or missing equipment.  <b>Procedures</b> (M) To provide instructions to placard the inoperative equipment and its installed location and to secure the inoperative equipment in an out of sight location. (O) To provide procedures to alert crew members.
25-63-3A					

**References:**

CAT.IDE.A.280; CAT.IDE.H.280.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance except for ELT(AF) and ELT(AP) where additional restriction for aeroplanes equipped with two ELTs as per operational requirements (CAT.IDE.A.280) are introduced to account for the evolution of the requirement that was not accounted for in TGL 26.

It is proposed to regroup the different types of ELT under the same guidance entry 25-63-1.

**Additional considerations:**

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

- a. Automatic Fixed (ELT(AF)). An automatically activated ELT which is permanently attached to an aircraft;
- b. Automatic Portable (ELT(AP)). An automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft;
- c. Automatic Deployable (ELT(AD)). An ELT which is rigidly attached to the aircraft and which is automatically deployed and activated by impact and, in some cases, also by hydrostatic sensors. Manual deployment is also provided;
- d. Survival ELT (ELT(S)). An ELT which is removable from an aircraft, 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.

An automatic portable ELT (ELT(AP)) may be used to replace one ELT(S) provided that it meets the ELT(S) requirements. A water-activated ELT(S) is not an ELT(AP).]



**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings						PAGE: 25-5	
(1) System & Sequence Numbers ITEM			(2) Rectification Interval				
ATA  25-64 Life jackets (Land aeroplane, Seaplanes & Amphibians) (JAR-OPS 1.825)			D	-	(3) Number installed		
					(4) Number required for dispatch		
					(5) Remarks or Exceptions		
					(M) Any in excess of those required may be missing or inoperative, provided that:  (a) Inoperative life jacket is placarded inoperative, removed from the installed location and placed out of sight so that it cannot be mistaken for a functional unit, and  (b) Required distribution of operative life jackets is maintained.		

**Helicopters:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-5
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
ATA  25-64    Life jackets  (JAR-OPS 3.825)		D	-	-	(3) Number installed
					(4) Number required for dispatch
					(5) Remarks or Exceptions
					(M) Any in excess of those required may be missing or inoperative, provided that:  (a) Inoperative life jacket is placarded inoperative, removed from the installed location and placed out of sight so that it cannot be mistaken for a functional unit, and  (b) Required distribution of serviceable life jackets is maintained.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-
(1) System & Sequence Numbers Item	(2) Rectification Interval			
		(3) Number installed		
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
<b>25-64-1 Life jackets (MC)</b>  25-64-1A	D	-	-	<p>(M) (O) Any in excess of those required may be inoperative or missing, provided that:</p> <p>(a) Required distribution is maintained,</p> <p>(b) Inoperative lifejacket and its installed location are placarded inoperative,</p> <p>(c) Inoperative life jacket is secured out of sight, and</p> <p>(d) Procedures are established and used to alert crew members of inoperative or missing equipment.</p> <p><b>Procedures:</b></p> <p>(M) To provide instructions to placard the inoperative life jacket and its installed location and to secure the inoperative life jacket in an out of sight location and to placard affected seat, as applicable.</p> <p>(O) To provide procedures to alert crew members.</p>

**References:**

CAT.IDE.A.285; CAT.IDE.H.290.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

The dispatch conditions wording is standardised and an additional condition to ensure crew awareness is proposed to be introduced.

**Additional considerations:**

N/A

## ATA 25 EQUIPMENT/FURNISHINGS

### SEATS

#### Summary of the guidance items:

Item	ATA	EASA IR Reference	CS-25 Reference	Existing Guidance	Foreign
<b>Flight Crew Seats</b>	<b><u>25-11-1</u></b>	CAT.IDE.A/H. 205	23.785 25.785 27.785 29.785	TCCA 25-10-2	
Power Adjustments (if installed)	<u>25-11-1-1</u>				
Manual Adjustments	<u>25-11-1-2</u>				
<b>Observer Seats</b>	<b><u>25-11-2</u></b>	CAT.IDE.A/H. 205	25.785 (I)	FAA PL-56 TCCA 25-10-3	
<b>Passenger Seats</b>	<b><u>25-21-1</u></b>	CAT.IDE.A/H. 205	23.785 25.785 27.785 29.785	FAA PL-79 TCCA 25-20-3	
Recline Functions	<u>25-21-1-1</u>				
Underseat Baggage Restraining Bars	<u>25-21-1-2</u>				
Passenger Seat Armrests with Recline Control Mechanism	<u>25-21-1-3</u>				
Passenger Seat Armrests without Recline Control Mechanism	<u>25-21-1-4</u>				
Swivel/Travel Mechanisms	<u>25-21-1-5</u>				
<b>Cabin Crew Seat Assembly (single or dual position)</b>	<b><u>25-21-2</u></b>	CAT.IDE.A/H. 205	23.785 25.785 27.785 29.785	FAA PL-97 TCCA 25-20-2	
Required Cabin Crew Seats	<u>25-21-2-1</u>				
Non-required Cabin Crew Seats	<u>25-21-2-2</u>				

**Existing TGL 26 item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-1
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA				
25-11 Flight Crew Seats (JAR-OPS 1/3.730)				
(1) Power Adjustments (if installed)	D	-	0	May be inoperative for each flight crew member.
(2) Manual Adjustments				
(a) Horizontal Adjustments	-	-	-	Must be operative for each flight crew member.
(b) Vertical and Recline Adjustments	B	-	0	One or more may be inoperative provided that the associated power adjustment of the affected flight crew member seat is operative.
	B	-	0	(M) One or more may be inoperative provided that the associated seat is secured or locked in a position acceptable to the flight crew member.
(c) Other Adjustments	C	-	0	(M) One or more may be inoperative provided that the associated seat is secured in a position acceptable to the flight crew member.

				<u>Note</u> : If an inoperative armrest will hinder an emergency evacuation or any other flight duties it should be removed.
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-1
(1) System & Sequence Numbers Item		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
<b>25-11-1</b>	<b>Flight Crew Seats (MC)</b>				
<b>25-11-1-1</b>	<b>Power Adjustments</b>				
25-11-1-1A		D	-	0	May be inoperative for each flight crew member.
<b>25-11-1-2</b>	<b>Manual Adjustments</b>				
25-11-1-2-1	Horizontal Adjustments				
25-11-1-2-1A		-	-	-	Must be operative for each flight crew member.
25-11-1-2-2	Vertical and Recline Adjustments				
25-11-1-2-2A		B	-	0	One or more may be inoperative provided that the associated power adjustment of the affected flight crew member seat is operative.
25-11-1-2-2B		B	-	0	(M) One or more may be inoperative provided that the affected seat is secured or locked in a position acceptable to the flight crew member.
25-11-1-2-3	Other Adjustments				
25-11-1-2-3A		C	-	0	(M) One or more may be inoperative provided that the affected seat is secured in a position acceptable to the flight crew member.
		<u>Note:</u> If an inoperative armrest will hinder an emergency evacuation or any other flight duties it should be removed.			

				<b>Procedures</b> (M) To give guidance reference for a practical means of securing the seat position.
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**References:**

CS 23.785; CS 25.785; CS 27.785; CS 29.785; CAT.IDE.A/H.205

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes and Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-2
(1) System & Sequence Numbers Item	(2) Rectification Interval			
25-11 Supernumerary Seats (Observer Seats) (JAR-OPS 1/3.730)	D	-	(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
			0	One or more may be inoperative provided the seat is not required and is correctly stowed.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-2
(1) System & Sequence Numbers Item	(2) Rectification Interval			
25-11-2 Observer Seats (MC)	D	-	(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
25-11-2A			0	One or more may be inoperative provided the affected seat is not occupied and is correctly stowed.

**References:**

CS 25.785(I); CAT.IDE.A/H.205

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance. As no operational rule requires the observer seat, the wording is modified to focus on the occupancy.

**Additional considerations:**

N/A



**Existing TGL 26 item:****Aeroplanes and Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-1
(1) System & Sequence Numbers		(2) Rectification Interval		
ITEM		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
25-21	Passenger Seats (JAR-OPS 1.730)	D	-	(M) One or more may be inoperative secured in the upright position.
		D	-	(M) One or more may be inoperative provided that the inoperative seat: <ul style="list-style-type: none"> <li>(a) Does not block an emergency exit,</li> <li>(b) Does not restrict any passenger from access to the main aeroplane aisle, and</li> <li>(c) Is blocked and placarded 'DO NOT OCCUPY'.</li> </ul> <p>Note: A seat with an inoperative or missing seat belt is considered inoperative.</p>

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-3
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>25-21-1 Passenger Seats (MC)</b>  25-21-1A	D	(3) Number installed		
		-	(4) Number required for dispatch	
			(5) Remarks or Exceptions	
			(M) One or more may be inoperative provided that:  (a) Inoperative seat does not block an emergency exit,  (b) Inoperative seat does not restrict any passenger from access to the main aircraft aisle, and  (c) Affected seat(s) are blocked and placarded 'DO NOT OCCUPY'.  <u>Note:</u> A seat with an inoperative or missing occupant restraint system (seat belt, safety harness, as applicable) is considered inoperative.  <b>Procedures:</b>  (M) To give guidance reference for identifying the affected seat(s) and a practical mean of prohibiting the use of the affected seat(s).	

**References:**

CS 23.785; CS 25.785; CS 27.785; CS 29.785; CAT.IDE.A/H.205

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

The first proviso of the existing guidance is transferred under the dedicated sub-item for Recline Function (see 25-21-1-1).

The condition (c) is proposed to be modified to account for seat(s) that may be affected by the failure of inoperative seat.

**Additional considerations:**

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

The passenger seat item includes seat back but the recline function (if installed) is covered under a dedicated item 25-21-1-1.

This item or associated sub-items do not include tray tables that may, if inoperative in other than stowed position, render the seat or 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 and for seats in the left and right (outboard) sections of two-aisle aircraft, the affected seat(s) may include the seat behind and/or the adjacent outboard seats.

For the centre section of two-aisle configurations, the affected seat may only be the seat aft of the inoperative seat.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-3
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
<b>25-21-1</b>	<b>Passenger Seats</b>			
25-21-1-1	Recline Functions (MC)			
25-21-1-1A		D	-	(M) One or more may be inoperative and the affected seat occupied provided that the seat is secured in the take-off and landing position.
				<b>Procedures:</b>  (M) To give guidance reference for a practical means of securing the seat in the upright position.
25-21-1-1B		C	-	One or more may be inoperative and the affected seat occupied provided that the seat back is immovable in the take-off and landing position.

**References:**

CS 23.785; CS 25.785; CS 27.785; CS 29.785; CAT.IDE.A/H.205

**Explanatory notes:**

An additional entry 25-21-1-1B is proposed to be incorporated to enable dispatch when the seat mechanism allow failure modes where the seat is failed locked in the adequate position without the need to perform an (M) task.

**Additional considerations:**

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

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

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
25-21	Passenger Seats (JAR-OPS 1.730)			
	(1) Underseat Baggage Restraining Bars	D	-	-
				(O) May be inoperative or missing provided that:  (a) Baggage is not stowed under associated seat, (b) Associated seat is placarded 'DO NOT STOW BAGGAGE UNDER THIS SEAT', and (c) Procedures are established to alert cabin crew of inoperative restraining bar.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-4
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
<b>25-21-1</b>	<b>Passenger Seat</b>			
25-21-1-2	Underseat Baggage Restraining Bars (MC)			
25-21-1-2A		D	-	<p>(O) May be inoperative or missing provided that:</p> <p>(a) Baggage is not stowed under associated seat,</p> <p>(b) Associated seat is placarded 'DO NOT STOW BAGGAGE UNDER THIS SEAT', and</p> <p>(c) Procedures are established and used to alert cabin crew of inoperative restraining bars.</p> <p><b>Procedures:</b></p> <p>(O) To ensure the cabin crew is briefed about affected seat position.</p>

**References:**

CS 23.785; CS 25.785; CS 27.785; CS 29.785; CAT.IDE.A/H.205

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

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

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

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-1
(1) System & Sequence Numbers		(2) Rectification Interval		
ITEM		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
25-21	Passenger Seats (JAR-OPS 1.730)			
	(2) Passenger Seat Armrests	D	-	<p>(M) One or more may be inoperative, damaged or missing and the affected seat occupied, provided that:</p> <p>(a) The affected armrest does not block an emergency exit,</p> <p>(b) The affected armrest is not in such a position that it restricts any passengers from access to the aircraft aisle, and</p> <p>(c) For affected armrests with a seat recline mechanism, that seat is secured in the upright position.</p> <p>Note: Any damage to passenger seats and components must not be detrimental to passenger safety.</p>

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
<b>25-21-1</b>	<b>Passenger Seats</b>			
25-21-1-3	Passenger Seat Armrests with Recline Control Mechanism <b>(MC)</b>			
25-21-1-3A		D	-	(M) May be inoperative, damaged or missing and the affected seat occupied, provided that:  (a) The affected armrest does not block an emergency exit,  (b) The affected armrest is not in such a position that it restricts any passengers from access to the aircraft aisle, and  (c) If armrest is missing, seat is secured in the full upright position.  <b>Procedures</b>  (M) To give guidance reference for a practical means of securing the seat in the upright position.
25-21-1-4	Passenger seat armrests without recline control mechanism <b>(MC)</b>			
25-21-1-4A		D	-	May be inoperative, damaged or missing, and the affected seat occupied provided that:



				<p>(a) The affected armrest does not block an emergency exit, and</p> <p>(b) The affected armrest is not in such a position that it restricts any passengers from access to the aircraft aisle.</p>
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**References:**

CS 23.785; CS 25.785; CS 27.785; CS 29.785; CAT.IDE.A/H.205

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

It is proposed to have a dedicated entry for armrest with recline control mechanism and for armrest without recline control mechanism, to clarify the applicability of the maintenance task.

**Additional considerations:**

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

**Existing TGL 26 item:**

None

**Proposed EASA Guidance Book item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings				PAGE: 25-5
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
<b>25-21-1 Passenger Seats</b>				
25-21-1-5 Swivel/Travel Mechanisms (MC)				
25-21-1-5A	D	-	-	(M) One or more may be inoperative and the affected seat occupied provided that: (a) Affected seat is secured in take-off and landing position, (b) Affected seat does not block an emergency exit, and (c) Affected seat does not restrict any passenger from access to the main aircraft aisle.  <b>Procedures:</b>  (M) To give guidance reference for a practical means of securing the seat in required position.
25-21-1-5B	C	-	-	One or more may be inoperative and the affected seat occupied provided that the affected seat is immovable in take-off and landing position.

**References:**

CS 23.785; CS 25.785; CS 27.785; CS 29.785; CAT.IDE.A/H.205

**Explanatory notes:**

It is proposed to create a new entry to cover passenger seat swivel/travel mechanisms.

**Additional considerations:**

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

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-3
(1) System & Sequence Numbers		(2) Rectification Interval			
ITEM		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
25-21	Required Cabin Crew Seat(s) (JAR-OPS 1.730)	B	-	-	<p>(M)(O) One seat or seat assembly may be inoperative provided that:</p> <p>(a) Inoperative seat or seat assembly is not occupied,</p> <p>(b) Cabin crew displaced by inoperative seat occupies the adjacent cabin crew seat or the passenger seat most suitable to perform assigned duties,</p> <p>(c) Alternate procedures are established and used for displaced cabin crew,</p> <p>(d) Folding type seat is stowed or secured in the retracted position, and</p> <p>(e) Where a passenger seat is assigned to the displaced cabin crew it is placarded 'FOR CABIN CREW USE ONLY'.</p> <p><u>Note 1:</u> A seat with an inoperative or missing seat belt or harness is considered inoperative.</p> <p><u>Note 2:</u> This requirement does not preclude use of passenger seats by cabin crew members carried in excess of the required cabin crew complement.</p> <p><u>Note 3:</u> Any aeroplane which is subject to the direct view requirements of JAR/CS 25.785(h) may have one of the required cabin crew seats inoperative, provided that the aeroplane does not depart a maintenance base where repairs or replacements can be made.</p>

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-4
(1) System & Sequence Numbers		(2) Rectification Interval			
ITEM		(3) Number installed			
ATA		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
25-21	Non-Required Cabin Crew Seat(s) (JAR-OPS 1.730)	C	-	0	<p>(M)(O) Seat or seat assembly may be inoperative provided that:</p> <p>(a) Inoperative seat or seat assembly is not occupied,</p> <p>(b) Alternate procedures are established and used for displaced cabin crew,</p> <p>(c) Folding type seat is stowed or secured in the retracted position, and</p> <p>(d) Where a passenger seat is assigned to the displaced cabin crew it is placarded 'FOR CABIN CREW USE ONLY'.</p> <p><u>Note:</u> A seat with an inoperative or missing seat belt or harness is considered inoperative.</p>

**Helicopters:**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-2
(1) System & Sequence Numbers		(2) Rectification Interval			
ITEM		(3) Number installed			
ATA		(4) Number required for dispatch			
		(5) Remarks or Exceptions			

25-21	Cabin Crew Seats (where required) (JAR-OPS 3.730)	C	-	-	<p>(M)(O) One seat or seat assembly may be inoperative provided that:</p> <p>(a) Inoperative seat or seat assembly is not occupied,</p> <p>(b) Cabin crew displaced by inoperative seat occupies the passenger seat most accessible to his or her assigned exits,</p> <p>(c) Alternate procedures are established and used for displaced cabin crew,</p> <p>(d) Folding type seat is stowed or secured in the retracted position, and</p> <p>(e) Passenger seats assigned to cabin crew are placarded 'FOR CABIN CREW USE ONLY'.</p> <p><u>Note 1</u>: A seat with an inoperative or missing seat belt or harness is considered inoperative.</p> <p><u>Note 2</u>: This requirement does not preclude use of passenger seats by cabin crew members carried in excess of the required cabin crew complement.</p>
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 25 Equipment/Furnishings					PAGE: 25-6
(1) System & Sequence Numbers Item		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
<b>25-21-2</b>	<b>Cabin Crew Seat Assembly (single or dual position)</b>				
25-21-2-1	Required Cabin Crew Seat				<u>Note:</u> See definition of 'required cabin crew seat'
25-21-2-1A		B	-	1	<p>(M)(O) One seat or seat assembly may be inoperative provided that:</p> <p>(a) Inoperative seat or seat assembly is not occupied,</p> <p>(b) Cabin crew displaced by inoperative seat occupies the adjacent cabin crew seat or the passenger seat most suitable to perform assigned duties,</p> <p>(c) Alternate procedures are established and used for displaced cabin crew,</p> <p>(d) Folding type seat is stowed or secured in the retracted position, and</p> <p>(e) Where a passenger seat is assigned to the displaced cabin crew it is placarded 'FOR CABIN CREW USE ONLY'.</p> <p><u>Note:</u> A seat with an inoperative or missing seat belt or harness is considered inoperative.</p> <p><b>Procedures:</b></p> <p>(M) to give guidance reference for placarding and securing the folding type seat in the retracted position if failure modes preventing stowage are existing.</p> <p>(O) to give guidance reference for normal, abnormal and emergency procedures affected by cabin crew displacement.</p>

25-21-2-2	Excess Cabin Crew Seat				
25-21-2-2A		C	-	0	<p>(M)(O) Seat or seat assembly in excess of requirements and assigned to a cabin crew may be inoperative provided:</p> <p>(a) Inoperative seat or seat assembly is not occupied,</p> <p>(b) Alternate procedures are established and used for displaced cabin crew,</p> <p>(c) Folding type seat is stowed or secured in the retracted position, and</p> <p>(d) Where a passenger seat is assigned to the displaced cabin crew it is placarded 'FOR CABIN CREW USE ONLY'.</p> <p><u>Note:</u> A seat with an inoperative or missing seat belt or harness is considered inoperative.</p> <p><b>Procedures:</b></p> <p>(M) To give guidance reference for placarding and securing the folding type seat in the retracted position if failure modes preventing stowage are existing.</p> <p>(O) To give guidance reference for normal, abnormal and emergency procedures affected by cabin crew displacement.</p>
25-21-2-2B		C	-	0	<p>(M) Seat or seat assembly in excess of requirements and not assigned to a cabin crew may be inoperative provided that:</p> <p>(a) Inoperative seat or seat assembly is not occupied, and</p> <p>(b) Folding type seat is stowed or secured in the retracted position or removed.</p> <p><b>Procedures:</b></p> <p>(M) To give guidance reference for placarding and securing the folding type seat in the retracted position if failure modes preventing stowage are existing.</p>

**References:**

CS 23.785; CS 25.785; CS 27.785; CS 29.785; CAT.IDE.A/H.205



**Explanatory notes:**

As per TGL 26 guidance, it is proposed to split the cabin crew seat item into two entries respectively applicable to 'Required Cabin Crew Seats' and 'Non-Required Cabin Crew Seats' to facilitate separate rectification interval and dispatch conditions.

The definition of the TGL 26 of 'Required Cabin Crew Seat' is proposed to be included into the additional considerations field.

The minimum number of required cabin crew seat is proposed to be set at '1'.

This is for safety reasons to ensure that at least one cabin crew is seated in a proper flight attendant's seat in the cabin. The Note 2 of TGL 26 entry 25-21 Required Cabin Crew Seat(s) is removed as redundant with sub-item 25-21-2-2 (non-required seat) of the proposed guidance.

The Note 3 under TGL 26 entry 25-21 Required Cabin Crew Seat(s) intended to cover additional limitations linked to direct view requirements is proposed to be removed. Guidelines in the additional considerations field are proposed instead.

25-21-2-2B entry is proposed to be included to cover seats not assigned to cabin crew in excess of the requirements.

**Additional considerations:**

A definition for 'Required Cabin Crew Seat' is provided in GM- GM3-CS-MMEL-120.

The above-mentioned relief is only permissible if more than one cabin crew is assigned to duty or more than one seat or seat assembly is located in the passenger cabin. This is for safety reasons to ensure that at least one cabin crew is seated in a proper cabin crew seat in the cabin.

When only one cabin crew seat is required and the maximum operational passenger seating configuration (MOPSC) is of 20 or more, this cabin crew seat is not allowed to be included in the MMEL. This item has been split into 25-21-2-1 'seats required by regulation' and 25-21-2 'seats in excess of requirements' to facilitate separate categorisations.

If additional cabin crew are carried and duties assigned, then the seat occupied by that cabin crew is no longer considered excess to requirements and that seat must meet the appropriate design requirements. Hence the wording 'assigned' in 25-21-2-2..

A cabin crew seat must be located in the passenger cabin; this excludes a seat located in the cargo area of a passenger/cargo combi configured aircraft. Individual operators, when operating with inoperative seats, must consider the locations and combinations of seats to ensure that the proximity to exits and distribution requirements of the applicable regulations are met.

Because of safety reasons, a note indicates that the use of cabin crew seats with no shoulder harness is not acceptable.

A good view of the area(s) of the cabin for which the displaced cabin crew is responsible has to be maintained, as far possible.

Cabin crew direct view pertains to direct visual contact between the flight attendant and the passenger cabin. It is possible that not all cabin crews will have a direct view of the cabin.

However, the important consideration is that the majority of the passenger cabin is in direct view of some cabin crews.

**ATA 26 FIRE PROTECTION****Summary of the guidance items:**

<b>Item</b>	<b>ATA</b>	<b>EASA IR Reference</b>	<b>CS Reference</b>	<b>Existing Guidance</b>	<b>Foreign</b>
Hand Fire Extinguishers	<u>26-24-1</u>	CAT.IDE.A/H.250	25.851(a) 23.851 29.851	FAA PL-75 TCCA 26-20-4	
Lavatory Smoke Detection System	<u>26-17-1</u>		25.854 (a)	FAA PL-24 TCCA 26-10-6	
Lavatory Waste Receptacle Fire-Extinguishing System	<u>26-25-1</u>		25.854 (b)	FAA PL-24 TCCA 26-20-3	

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 26 Fire Protection				PAGE: 26-1
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA				
26-24 Hand Fire Extinguishers (JAR-OPS 1/3.790)	D	-	-	<p>(M) Any in excess of those required may be inoperative or missing provided that:</p> <p>(a) The inoperative fire extinguisher is placarded inoperative, removed from the installed location and placed out of sight so that it cannot be mistaken for a functional unit, and</p> <p>(b) Required distribution is maintained.</p>

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 26 Fire Protection				PAGE: 26-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>26-24-1 Hand Fire Extinguishers (MC)</b>  26-24-1A	D	(3) Number installed		
		-	(4) Number required for dispatch	
			(5) Remarks or Exceptions	
			(M) (O) Any in excess of those required may be inoperative or missing provided that: (a) The inoperative hand fire extinguisher is removed from the aircraft and its installed location is placarded inoperative; or it is removed from the installed location, secured out of sight, and the hand fire extinguisher and its installed location are placarded inoperative, (b) Required distribution of operative units is maintained throughout the aircraft, and (c) Procedures are established and used to alert crew members of inoperative or missing equipment. <b>Procedures</b> (M) to provide instructions to placard the inoperative hand fire extinguisher and its location and to secure hand fire extinguisher in an out of sight location. (O) to provide procedures to inform crew members.	

**References:**

CAT.IDE.A/H.250

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

Additional procedures are proposed to ensure the crew is alerted about the status of the affected hand fire extinguishers.

**Additional considerations:**

N/A

**Existing TGL 26 item:**

None

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 26 Fire Protection				PAGE: 26-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
<b>26-17-1 Lavatory Smoke Detection System</b>				
26-17-1A	C	-	0	(M) (O) May be inoperative provided that: (a) Lavatory waste receptacle is empty, (b) Associated lavatory door is locked closed and placarded to prohibit passengers from entering, (c) Affected lavatory is used only by crew members, and (d) Associated lavatory is not used for storage of any inflammable or combustible materials. <b>Procedures</b> (M) to provide instructions to lock closed and placard the inoperative lavatory. (O) to provide procedures to brief crew members.
26-17-1B	B	-	0	(M) (O) May be inoperative provided that: (a) Lavatory waste receptacle fire-extinguishing system is verified operative, and (b) Procedures are established and used to check periodically absence of smoke in affected lavatory, and

26-17-1C (Aeroplanes with passenger capacity of less than 20)	C	-	0	<p>(c) Associated lavatory is not used for storage of any inflammable or combustible materials.</p> <p><b>Procedures</b></p> <p>(M) to provide instructions to verify/test the agent bottle of the lavatory waste receptacle fire-extinguishing system.</p> <p>(O) to provide procedures to ensure affected lavatory is visited periodically by the cabin crew.</p> <p>May be inoperative.</p>
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#### References:

CS 25.854/JAR 26.160: An operator shall not operate a large aeroplane with passenger capacity of more than 19 after 1 October 2000 that is not equipped with a smoke detector system or equivalent and a fire extinguisher for each waste receptacle.

#### Explanatory notes:

A new guidance entry is proposed to cover Lavatory Smoke Detection System.

26-17-1A entry allows dispatch of the aircraft with failed smoke detector in the lavatory with a restricted utilisation in-flight to crew members only. This option ensures no fire will develop in the affected lavatory.

26-17-1B is less restrictive regarding the utilisation of the affected lavatory than 26-17-1A and relies on the operative waste bin extinguisher and a periodic check of the absence of smoke in the affected lavatory performed by the cabin crew to reduce fire risks.

26-17-1C provides guidance for aeroplanes not required to have smoke detection or lavatory waste receptacle fire-extinguishing system installed, including cargo configurations.

#### Additional considerations:

Use of the affected lavatory by the crew members does not authorise storage of inflammable or combustible materials, such as in-flight service waste bags.

The definition of the interval for the periodic check by the crew may appear as arbitrary and this guidance does not mandate any specific interval.

It is proposed to let the operator develop its own procedure depending on the conducted operations under the control of the authority approving the MEL.

Regarding the extinguisher verification, bearing in mind the system is usually verified only through maintenance programme with a period of time between two consecutive checks exceeding the proposed rectification interval, a one-time check before the release for a B (3 days maximum) interval is judged acceptable.

Relief provided under 26-17-1C is applicable only if the installation of lavatory smoke detection system is not required by the type certification basis.

**Existing TGL 26 item:**

None

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 26 Fire Protection				PAGE: 26-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
		(3) Number installed		
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
<b>26-25-1 Lavatory Waste Receptacle Fire-Extinguishing System</b>				
26-25-1A	C	-	0	(M) May be inoperative provided that:  (a) Lavatory waste receptacle is empty,  (b) Associated lavatory door is locked closed and placarded to prohibit passengers from entering, and  (c) Affected lavatory is used only by crew members.  <b>Procedures:</b>  (M) To provide instructions to lock closed and placard the inoperative lavatory.  (O) To provide procedures to brief crew members.
26-25-1B (Aeroplanes with passenger capacity of less than 20)	C	-	0	May be inoperative.

**References:**

CS 25.854/JAR 26.160: An operator shall not operate a large aeroplane with an passenger capacity of more than 19 after 1 October 2000 that is not equipped with a smoke detector system or equivalent and a fire extinguisher for each waste receptacle.



**Explanatory notes:**

A new guidance entry is proposed to cover the lavatory waste receptacle fire-extinguishing system.

The lavatory smoke detection system is not considered as an acceptable alternate means to the waste receptacle fire-extinguishing system. The lavatory fire-extinguishing system is the most appropriate means to mitigate the undesired situation where, during a non-smoking flight, a passenger goes on purpose into the lavatory for smoking. It is assumed that such a passenger might indeed try to make the lavatory smoke detection system inoperative (e.g. using a wet towel).

Proposed dispatch conditions ensure no fire can develop in the affected waste receptacle by restricting the access to crew members only.

26-25-1B provides guidance for aeroplanes not required to have lavatory waste receptacle fire-extinguishing system installed, including cargo configurations.

**Additional considerations:**

The lavatory smoke detection system is not considered as an acceptable alternate means to the waste receptacle fire-extinguishing system. However, additional relief may be considered if adequate fire containment capability of the waste receptacle can be demonstrated.

Relief provided under 26-25-1B is applicable only if the installation of lavatory waste receptacle fire-extinguishing system is not required by the type certification basis.

**ATA 30 ICE PROTECTION****Summary of the guidance items:**

<b>Item</b>	<b>ATA</b>	<b>EASA IR reference</b>	<b>CS Reference</b>	<b>Existing Foreign Guidance</b>
Inertial Separator Monitoring System	<u>30-00-1</u>	Regulation (EC) No 216/2008 (Essential requirements for air operations) Annex IV 2.a.5 CAT.IDE.A/H.165 AMC1CAT.OP.MPA.255 GM2-CAT.OP.MPA.250		
Surface De-icing/Anti-icing Systems – Wing, Vertical/Horizontal Stabilizers Monitoring System	<u>30-10-1</u>	Regulation (EC) No 216/2008 (Essential requirements for air operations) Annex IV 2.a.5 CAT.IDE.A/H.165 AMC1-CAT.OP.MPA.255 GM2-CAT.OP.MPA.250		
Engine Inlet De-icing/Anti-icing Systems Monitoring System	<u>30-21-1</u>	Regulation (EC) No 216/2008 (Essential requirements for air operations) Annex IV 2.a.5; CAT.IDE.A/H.165 AMC1-CAT.OP.MPA.255 GM2-CAT.OP.MPA.250	25.1093 CS.25J1093	TCCA 30-20-1
Propeller De-ice/Anti-ice System Monitoring System	<u>30-61-1</u>		CS 23.1093 (a)	
Ice Evidence Probes (visual indicator)	<u>30-80-1</u>			
Visual Ice Evidence Indication Lighting system	<u>30-80-1-1</u>			
Ice Detection System	<u>30-80-2</u>			
Wing Illumination Lights	<u>33-43-1</u>		25.1403	FAA PL-72 TCCA 33-40-5

Pitot Heating Systems	<u>30-31-1</u>	CAT.IDE.A/H.130 CAT.IDE.A/H.125	CS 23.1323; CS 27 Appendix B; CS 25/29.132 3	TCCA 30- 30-1
Pitot Heating Failure Indication System	<u>30-31-2</u>	CAT.IDE.A/H.130 CAT.IDE.A/H.125	23/25.132 6	FAA PL-90 TCCA 30- 30-2
Static Port Heating System	<u>30-31-3</u>		23.1325 (b) (3) 25.1325 (b)	TCCA 30- 30-3
Stall Warning Vane Heaters	<u>30-32-1</u>			

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
30-00 Inertial Separators (JAR-OPS 1.675(a))	B	-	0	<p><u>Note:</u> In the absence of any Flight Manual limitations, icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +5°C.</p>
(1) Position Indicating System				<p>One or more may be inoperative for day VMC only, provided the aeroplane is not operated at any time in known or forecast icing conditions.</p> <p><u>Note:</u> Inertial Separators includes pneumatic de-icing systems.</p>

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
<b>30-00-1 Inertial Separators — Position Indicating System</b>  30-00-1A	B	-	0	May be inoperative provided that operations are not conducted at any time in known or forecasted icing conditions.  <u>Note 1:</u> Inertial separators includes pneumatic de-icing systems.  <u>Note 2:</u> In the absence of any Aircraft Flight Manual limitations, icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +5°C.

**References:** Regulation (EC) No 216/2008 (Essential requirements for air operations)  
Annex IV 2.a.5.

**Explanatory notes:**

The proposed MMEL guidance is based on existing TGL 26.

It is proposed to remove the restriction to day visual meteorological conditions (VMC) operations. Indeed, the proposed guidance covers the failure of the monitoring of the ice protection system.

Operation of the aircraft with this monitoring system inoperative may result in undetected failure of the ice protection system. However, this is mitigated by the fact that operations in known or forecasted icing conditions are prohibited by the dispatch conditions.

**Additional considerations:**

Depending upon the aircraft design, failure of the position indicating system may be compensated by crew monitoring from the flight crew compartment and appropriate wing inspection lights (or alternate means) are operative for night operations.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
30-10 Surface De-icing/Anti-icing Systems — Wing, Vertical/Horizontal Stabilisers <i>(JAR-OPS 1.675(a))</i>				
(1) Monitoring Systems	B	-	0	<p><u>Note:</u> In the absence of any Flight Manual limitations, icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +5°C.</p> <p>One or more may be inoperative for day VMC only, provided that the aeroplane is not operated at any time in known or forecast icing conditions.</p>

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes & Helicopters**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>30-10-1    Airframe Aerodynamic Surface Ice Protection Monitoring System</b>  30-10-1A	B	-	(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
			<u>Note:</u> In the absence of any Aircraft Flight Manual limitations, icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +5°C.	
			One or more may be inoperative provided that operations are not conducted at any time in known or forecasted icing conditions.	

**References:** Regulation (EC) No 216/2008 (Essential requirements for air operations)  
Annex IV 2.a.5; OPS.GEN.445; AMC1 OPS.GEN.100; AMC2 OPS.GEN.100.

**Explanatory notes:**

The proposed MMEL guidance is based on existing TGL 26. It is proposed to remove the restriction to day VMC operations. Indeed, the proposed guidance covers the failure of the monitoring of the ice protection system.

Operation of the aircraft with this monitoring system inoperative may result in undetected failure of the ice protection system. However, this is mitigated by the fact that operations in known or forecasted icing conditions are prohibited by the dispatch conditions.

**Additional considerations:**

The above guidance covers items such as wing, vertical/horizontal stabilisers and ice protection monitoring system on airplanes. Additional relief can be granted based on the condition that the airframe aerodynamic surface ice protection system is considered inoperative, provided that such a relief is available in the MMEL. Associated dispatch conditions and rectification intervals may then become applicable.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
30-21 Engine Inlet De-icing / Anti-icing Systems (JAR-OPS 1.675(a))				<p><u>Note:</u> In the absence of any Flight Manual limitations, icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +5°C.</p>
(1) Monitoring Systems	B	-	0	One or more may be inoperative for day VMC only, provided that the aeroplane is not operated at any time in known or forecast icing conditions.



**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
<b>30-21-1 Engine Inlet De-icing/Anti-icing System</b>				
<b>Monitoring System</b>				
30-21-1A	B	-	-	<p><u>Note:</u> In the absence of any Aircraft Flight Manual limitations, engine icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +10°C.</p> <p>May be inoperative provided that operations are not conducted at any time in known or forecasted icing conditions.</p>

**References:** Regulation (EC) No 216/2008 (Essential requirements for air operations) Annex IV 2.a.5; CAT.IDE.A/H.165; AMC1-CAT.OP.MPA.255; GM2-CAT.OP.MPA.250.

**Explanatory notes:**

The default definition for icing conditions provided in current TGL 26 guidance note is proposed to be updated to a conservative value for engine icing protection.

The proposed MMEL guidance is based on existing TGL 26.

It is proposed to remove the restriction to day VMC operations. Indeed, the proposed guidance covers the failure of the monitoring of the ice protection system.

Operation of the aircraft with this monitoring system inoperative may result in undetected failure of the ice protection system. However, this is mitigated by the fact that operations in known or forecasted icing conditions are prohibited by the dispatch conditions.

**Additional considerations:**

Additional relief can be granted based on the condition that the engine inlet de-icing/anti-icing system is considered inoperative, provided that such a relief is available in the MMEL. Associated dispatch conditions and rectification intervals may then become applicable.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-6
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA  30-61 Propeller De-ice/Anti-ice Systems (if installed) <i>(JAR-OPS 1.675(a))</i>  (1) Monitoring Systems	B	-	(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
		0	One or more may be inoperative for day VMC only, provided the aeroplane is not operated at any time in known or forecast icing conditions.	

**Proposed EASA Guidance Book item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
30-61-1 Propeller De-ice/Anti-ice System Monitoring System  30-21-1A	B	-	(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
		0	<p><u>Note:</u> In the absence of any Aircraft Flight Manual limitations, engine icing conditions should be taken as visible moisture or precipitation when the OAT is less than +10°C.</p> <p>One or more may be inoperative provided that operations are not conducted at any time in known or forecasted icing conditions.</p>	

**Aircraft applicability: Aeroplanes**

**References:** Regulation (EC) No 216/2008 (Essential requirements for air operations); Annex IV 2.a.5; CS 23.1093 (a).

**Explanatory notes:**

The default definition for icing conditions provided in current TGL 26 guidance note is proposed to be updated to a conservative value for propeller icing protection.

The proposed MMEL guidance is based on existing TGL 26.

It is proposed to remove the restriction to day VMC operations. Indeed, the proposed guidance covers the failure of the monitoring of the ice protection system.

Operation of the aircraft with this monitoring system inoperative may result in undetected failure of the ice protection system. However, this is mitigated by the fact that operations in known or forecast icing conditions are prohibited by the dispatch conditions.

**Additional considerations:**

Additional relief can be granted based on the condition that the propeller de-ice/anti-ice system is considered inoperative, provided that such a relief is available in the MMEL. Associated dispatch conditions and rectification interval may then become applicable.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-6
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
30-80 Ice Evidence Probes (visual indicator) (if installed) (JAR-OPS 1.675(a))	B	-	0	One or more may be inoperative for day VMC only, provided the aeroplane is not operated at any time in known or forecast icing conditions.

ATA Chapter: 33 Lights				PAGE: 33-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
33-40 Ice Evidence Probe Light (visual indicator) (if installed) (JAR-OPS 1.675(a))	D	-	0	May be inoperative for daylight operations.
	B	-	0	May be inoperative for night operations provided that the aeroplane is not operated at any time in known or forecasted icing conditions.  <u>Note:</u> See ATA 30 for the definition of icing conditions.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
<b>30-80-1 Visual Ice Evidence Indication</b>				<u>Note:</u> In the absence of any Aircraft Flight Manual limitations, icing conditions should be taken as visible moisture or precipitation when the OAT is less than +5°C.
30-80-1A	B	-	0	May be inoperative provided that operations are not conducted in known or forecasted icing conditions.
30-80-1B	D	-	0	May be inoperative provided that procedures are not dependent upon its use.
<b>30-80-1-1 Visual Ice Evidence Indication Lighting system</b>				
30-80-1-1A	D	-	0	May be inoperative for daylight operations provided that procedures are not dependent upon its use.
30-80-1-1B	B	-	0	(O) May be inoperative for night operations provided that an alternate means is used to illuminate the affected indicator.
				<b>Procedures</b>
				(O) An alternate means can be that a portable lamp/light of adequate capacity for wing and/or control surface inspection is available for night operations in icing conditions.

**References:** Regulation (EC) No 216/2008 (Essential requirements for air operations); Annex IV 2.a.5.

**Explanatory notes:**

The proposed guidance is based on the existing TGL 26 guidance.

It is proposed to remove the restriction to day VMC operations. Indeed, the visual ice evidence indication may be used by procedures to detect icing conditions.

The failure of the indication is mitigated by the fact that operations in known or forecasted icing conditions are prohibited by the dispatch conditions.

A new entry is proposed to be introduced to cover the case where the ice evidence indication is not used by procedures and alternate means or procedures are available to detect icing conditions.

A new guidance entry 30-80-1-1 visual ice evidence indication lighting system is proposed. The level of relief is consistent with the existing TGL 26 guidance 33-40 entry for ice evidence probe light.

**Additional considerations:**

30-80-1B entry applies to systems which are not used as a mean to monitor the ice accretion.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-6
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
30-80 Ice Detection System (if installed) (JAR-OPS 1.675(b))	B	-	0	(O) May be inoperative provided that alternate procedures are established and used to illuminate ice accretion on an outside surface visible from the flight deck.

**Helicopters:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
30-80 Ice Detection System (JAR-OPS 3.675)	D	-	0	(O) May be inoperative provided that operations are not conducted into known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C.
	D	-	0	(O) May be inoperative provided that alternate procedures are established and used to monitor the presence of ice.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 30 Ice and Rain Protection					PAGE: 30-1	
(1) System & Sequence Numbers Item		(2) Rectification Interval				
		(3) Number installed				
		(4) Number required for dispatch				
		(5) Remarks or Exceptions				
<b>30-80-2    Ice Detection System</b>						
30-80-1A	<i>System certified as an Advisory System</i>	D	-	0	May be inoperative provided that procedures do not depend upon its use.	
30-80-1B	<i>System certified as a Primary Detection System</i>	C	-	0	(O) May be inoperative provided that alternate procedures are established and used.  <b>Procedures:</b>  (O) To provide a procedure to the crew to determine conditions where ice protection system must be activated manually.	

**References:** Regulation (EC) No 216/2008 (Essential requirements for air operations); Annex IV 2.a.5.

**Explanatory notes:**

It is proposed to distinguish between ice detection system certified as advisory system or as primary detection system.

A new entry 30-80-1A is proposed to be introduced to cover the case where the ice detection system is certified as an advisory system and not used by procedures.

If the ice detection system is certified as the primary detection system or if procedures are depending on its use, entry 30-80-1B applies and alternate procedures are required.

**Additional considerations:**

Advisory detection system on which procedures are based may obtain relief in accordance with the guidance for primary detection system.

Definitions of primary and advisory detection system are provided as follows:

Beside the pilot's appraisal of actual ice built-up (on wiper blades, window frames or propeller spinner), some aeroplane use in-flight ice detection systems (IIDS). IIDS may either directly detect the presence of ice on the aeroplane surface or detect that the aeroplane is in icing conditions. There are basically two classes of IIDS:



1. The advisory IIDS which trigger a signal in the flight crew compartment. The flight crew is responsible for monitoring the icing conditions or the ice accretion as defined in the Aircraft Flight Manual and activation by the pilot of the ice protection systems remains a requirement.
2. The primary IIDS which is the prime means used to determine when the ice protection systems should be activated. The ice protection systems may be automatically or manually activated.

Considerations for aircraft certified for 'limited' icing conditions have to be taken into account and may result in a different level of relief.

For helicopters, with an optional ice protection/detection system installed for operations into ice conditions, a D rectification interval may be accepted provided that operations are not conducted into known or forecast icing conditions.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 33 Lights				PAGE: 33-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA 33-43 Wing Illumination Lights (JAR-OPS 1.675(b))	D	-	(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
			0	One or more may be inoperative for daylight operations.
	B	-	0	(O) One or more may be inoperative for night operations provided that an alternate means is operative and used to illuminate ice accretion on an outside surface visible from the flight deck.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

ATA Chapter: 33 Lights				PAGE: 33-x
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>33-43-1 Wing Illumination Light</b>  33-43-1A  33-43-1B  33-43-1C			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
	D	-	0	One or more may be inoperative for daylight operations.
	C	-	0	One or more may be inoperative provided that operations are not conducted at any time into known or forecast icing conditions.
	B	-	0	(O) One or more may be inoperative provided that a portable lamp/light of adequate capacity for wing and/or control surface inspection is available for night operations in icing conditions.  <b>Procedures</b> (O) To provide crew procedures in accordance with the above conditions.

**References:** CS 25.1403; CAT.IDE.A/H.165**Explanatory notes:**

The proposed guidance is based on the existing TGL 26 guidance.

33-43-1B new entry is proposed to be introduced to allow dispatch with inoperative wing illumination light provided that operations are not conducted at any time into known or forecast icing conditions.

**Additional considerations:**

Further relief might be granted when the wing illumination lights are not required to ensure ice accretion monitoring (flight/ground).

33-43-1C: For passenger and cargo aeroplanes where view of the wing surfaces from the flight crew compartment is restricted, additional alternate procedures may be required unless procedures do not require their use.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection					PAGE: 30-2
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
30-31	Pitot Heating Systems (if installed) (JAR-OPS 1.650/652)				<u>Note:</u> Pitot heating is required to be operative for RVSM operations.
	(1) Flight under day VFR				
	(i) Aeroplanes with a MCTOM not over 5700 kg and with a MAPSC of 9 or less seats	B	-	0	One or more may be inoperative for day VMC only provided that the aeroplane is not operated at any time in known or forecast icing conditions.
	(ii) Aeroplanes with a MCTOM over 5700 kg or with a MAPSC of more than 9 seats	B	-	1	(O) (M) Any in excess of one may be inoperative for day VMC only provided that: (a) The pilot's or co-pilot's pitot heater is verified to be operative prior to each flight, and (b) The aeroplane is not operated at any time in known or forecast icing conditions.
	(2) Flights under IFR or at night				
	(i) Single pilot operations	C	-	1	Any in excess of one may be inoperative.
	(ii) Two pilot operations	C	-	2	Any in excess of two may be inoperative.
		B	-	1	(O)(M) Any in excess of one may be inoperative provided that: (a) The remaining pitot heater is verified to be operative prior to each flight,

				<p>(b) The pitot heat failure indication is verified to be operative prior to each flight, and</p> <p>(c) The aeroplane is not operated at any time in known or forecast icing conditions.</p>
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**Helicopters:**

ATA Chapter: 30 Ice and Rain Protection					PAGE: 30-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
30-31	Pitot Heating Systems (JAR-OPS 3.650/652)	D	-	2	Any in excess of two may be inoperative.
	(1) Day VFR operations	C	-	0	One or more may be inoperative provided that the helicopter is not operated at any time in known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C.
	(2) IFR or Night operations	C	-	1	(O)(M) Any in excess of one may be inoperative provided that:  (a) The remaining pitot heater is verified to be operative prior to each flight, (b) The pitot heat failure indication (if installed) for the remaining pitot heater is verified to be operative prior to each flight, (c) Flight is conducted under VMC with the surface in sight, and (d) The helicopter is not operated at any time in known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
		(3) Number installed		
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
<b>30-31-1 Pitot Heating System</b>				
30-31-1A	C	-	2	(M) Any in excess of two may be inoperative provided that: (a) Primary independent airspeed indications at each required pilot station are not affected, (b) Standby airspeed indication, if installed, is not affected, (c) Operative pitot heater are verified operative prior to each flight, and (d) Failure indication system associated with operative pitot heaters is verified to be operative prior to each flight. <b>Procedures:</b> (M) to provide instructions to perform required pre-flight checks.
30-31-1C (Aeroplanes)	B	-	1	(O) (M) Any in excess of one may be inoperative provided that: (a) Operations are conducted under day VMC, (b) Operations are not conducted in visible moisture or into known or forecast icing conditions, and (c) The operative pitot heater is verified operative prior to each flight. <b>Procedures:</b> (M) to provide instructions for required pre-flight checks.

30-31-1D (Helicopters)	C	-	1	<p>(O) Alternatively, to provide instructions for the flight crew to perform required pre-flight checks using pitot heating failure indication system, if installed.</p> <p>(O)(M) Any in excess of one may be inoperative provided that:</p> <p>(a) Flight is conducted under VMC with the surface in sight,</p> <p>(b) Primary airspeed indication on the pilot's-in-command side is not affected,</p> <p>(c) The operative pitot heater is verified to be operative prior to each flight,</p> <p>(d) The pitot heat failure indication (if installed) for the remaining pitot heater is verified to be operative prior to each flight, and</p> <p>(e) The helicopter is not operated at any time in known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C.</p>
30-31-1E (Helicopters)	C	-	0	<p>May be inoperative for operations under VFR provided that the helicopter is not operated at any time in known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C.</p>

**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

#### **Explanatory notes:**

The proposed guidance entries 30-31-1D and 30-31-1E applicable to helicopters are in line with the existing TGL 26 guidance.

The TGL 26 guidance for helicopters relief for any pitot heater in excess of two is proposed to be removed as aircraft equipped with three pitot probe heaters may be subject to specific evaluation before granting relief in the MMEL, in particular when considering operations under IFR into icing conditions.

The proposed guidance for aeroplanes has a more conservative approach than the existing TGL 26 guidance to ensure that applicable airworthiness and operational requirements are met.

In particular the repercussions on the level of protection against malfunctions due to either condensation or icing for the means of measuring airspeed when dispatch is allowed with degraded pitot heating system is proposed to be considered on a case-by-case basis, depending on the certification basis and design-related factors.



**Additional considerations:**

30-31-1A

Condition (a) can be achieved through switching of the airspeed data sources as a pre-flight procedure or as in-flight procedure when operations into icing conditions or visible moisture are conducted, as applicable.

This system may be part of the air data system function that is required to support the RVSM certification of the aircraft.

With this item inoperative, RVSM qualification may be invalid and the MMEL will need a proviso for addressing the loss of RVSM capability.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection					PAGE: 30-3
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
30-31	Pitot Heater Failure Indication System  (where required) <i>(JAR-OPS 1.650/652)</i>				
	(1) Day VFR operations	D	-	0	May be inoperative.
	(2) IFR or Night operations				
	(a) Single pilot operations	B	-	1	(O)(M) Any in excess of one may be inoperative, provided that:  (a) The associated heater is verified to operate normally prior to each flight, (b) Flight is conducted under VMC, and (c) The aeroplane is not operated at any time in known or forecast icing conditions.  Any in excess of one may be inoperative provided that the associated heater(s) is(are) considered inoperative.
	(b) Two pilot operations	B	-	1	(O)(M) Any in excess of one may be inoperative, provided that:  (a) The associated heater is verified to operate normally prior to each flight, (b) Flight is conducted under VMC, and

				<p>(c) The aeroplane is not operated at any time in known or forecast icing conditions.</p> <p>Any in excess of one may be inoperative provided that the associated heater(s) is(are) considered inoperative.</p>
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**Helicopters:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
ATA				(5) Remarks or Exceptions
30-31 Pitot Heater Failure Indication System (JAR-OPS 3.650/652)				
(1) Day VFR operations	D	-	0	May be inoperative.
(2) IFR or Night Operations	C	-	1	<p>(O)(M) Any in excess of one may be inoperative provided that:</p> <p>(a) The associated pitot heater is verified to be operative prior to each flight,</p> <p>(b) Flight is conducted under VMC with the surface in sight, and</p> <p>(c) The helicopter is not operated at any time in known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C.</p>

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
<b>30-31-2 Pitot Heating Failure Indication System</b>				
30-31-2A	-	-	-	May be inoperative provided that the associated pitot heating system is considered inoperative. (refer to 30-31-1)

**Aircraft applicability:****References:** CAT.IDE.A/H.130**Explanatory notes:**

The proposed guidance has a more conservative approach than the existing TGL 26 guidance to ensure that applicable airworthiness and operational requirements are met.

Indeed, airworthiness requirements may require the pitot probe heating system failure indication system if pitot probe heating is installed. In such a case, a case-by-case analysis has to be conducted to evaluate relief that may be granted considering the compliance with both airworthiness and operational requirements.

**Additional considerations:**

Additional relief may be granted based on the certification basis and the applicable operational requirements.

Particular attention shall be paid to design where the failure indication system is covering multiple heaters (e.g. pitot, static, angle-of-attack, TAT/SAT). Cumulative effects should in these cases be evaluated.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-4
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
30-31 Static Port Heaters (JAR-OPS 1.675(a))		<p><u>Note:</u> Static port heating is required to be operative for RVSM operations.</p>		
(1) Day VFR operations				
(a) Single pilot operations	D	-	0	One or more may be inoperative provided that:
				(a) Flight is conducted under VMC, and
				(b) The aeroplane is not operated at any time in known or forecast icing conditions.
(b) Two pilot operations	D	-	0	One or more may be inoperative provided that:
				(a) Flight is conducted under VMC, and
				(b) The aeroplane is not operated at any time in known or forecast icing conditions.
(2) IFR or Night operations				
(a) Single pilot operations	B	-	1	(O)(M) Any in excess of one may be inoperative provided that:
				(a) The remaining static port heater is verified to operate normally prior to each flight,
				(b) Flight is conducted under VMC, and
				(c) The aeroplane is not operated at any time in known or forecast icing conditions.

(b) Two pilot operations	B	-	1	<p>(O)(M) Any in excess of one may be inoperative provided that:</p> <p>(a) The remaining static port heater is verified to operate normally prior to each flight,</p> <p>(b) Flight is conducted under VMC, and</p> <p>(c) The aeroplane is not operated at any time in known or forecast icing conditions.</p>
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**Helicopters:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA  30-31 Static Port Heaters (where required) <i>(JAR-OPS 3.675)</i>  (1) Day VFR operations  (2) IFR or Night operations			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
	D	-	0	One or more may be inoperative provided that the helicopter is not operated at any time in known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C.
	B	-	1	<p>(O)(M) Any in excess of one static port heater may be inoperative provided that:</p> <p>(a) Flight is conducted under VMC with the surface in sight,</p> <p>(b) The helicopter is not operated at any time in known or forecast conditions of visible moisture or precipitation when the OAT is less than +5°C, and</p>

				(c)The remaining static port heating system and all connected flight instruments are verified to be operative prior to each flight.
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 30 Ice and Rain Protection					PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval				
	(3) Number installed				
	(4) Number required for dispatch				
				(5) Remarks or Exceptions	
<b>30-31-3 Static Port Heating System</b>					
30-31-3A (Aeroplanes)	C	-	0	May be inoperative provided that:  (a) Operations are conducted under day VFR, and (b) Operations are not conducted at any time into known or forecast icing conditions.	
30-31-3B (Aeroplanes)	B	-	1	(O) (M) Any in excess of one may be inoperative operations provided that: (a) Operations are conducted under VMC, and (b) The remaining static port heating system is verified operative before each flight, and (c) Operations are not conducted at any time into known or forecasted icing conditions.  <b>Procedures:</b> (M) To provide instructions for required pre-flight checks. (O) Alternatively, to provide instructions for the flight crew to perform required pre-flight checks using static port heating failure indication system, if installed.	
30-31-3D (Helicopters)	B	-	1	(O)(M) Any in excess of one may be inoperative provided that:  (a) Flight is conducted under VMC with the surface in sight, and	



30-31-3D (Helicopters)	C	-	0	<p>(b) The remaining static port heater <u>and all connected primary indications</u> are verified to be operative at the pilot-in-command station prior to each flight, and</p> <p>(c) The helicopter is not operated at any time in known or forecasted conditions of visible moisture or precipitation when the OAT is less than +5°C.</p> <p>May be inoperative for operations under day VFR provided that the helicopter is not operated at any time in known or forecasted conditions of visible moisture or precipitation when the OAT is less than +5°C.</p>
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**Aircraft applicability:****References:****Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26 guidance.

Additional considerations are proposed to account for design specificities.

Indeed, airworthiness requirements may require the pitot probe heating system failure indication system if pitot probe heating is installed. In such a case, a case-by-case analysis has to be conducted to evaluate relief that may be granted considering the compliance with both airworthiness and operational requirements.

**Additional considerations:**

At least one static source must be heated unless it was confirmed during icing certification that icing in flight had no effect on static sources.

Because of their location and as determined during certification flight tests, it may be that static sources are unaffected by flight in icing.

The prohibition of flight into known or forecasted icing conditions includes ground operations where ice and slush may be splashed onto the static sources.

This system may be part of the air data system function that is required to support the RVSM certification of the aircraft.

With this item inoperative, RVSM qualification may be invalid and the MMEL will need a proviso for addressing the loss of RVSM capability.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
30-32 Stall Warning Vane Heaters (if installed) (JAR-OPS 1.675(a))	B	-	0	One or more may be inoperative for day VMC only, provided that the aeroplane is not operated at any time in known or forecast icing conditions.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
30-32-1 Stall Warning Vane Heating System  30-32-1A			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
	B	-	0	One or more may be inoperative provided that:  (a) Operations are conducted in day VMC, and  (b) Operations are not conducted at any time into known or forecasted icing conditions.

**References:** N/A

**Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
30-41 Windshield Heating/ De-icing Systems (JAR-OPS 1.675(a))				
(1) Window Heat Indicating System	C	-	0	(O) One or more may be inoperative provided that an alternate procedure is established and used to ensure correct operation.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes & Helicopters**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
30-41-1 Windshield Heating/ De-icing Indicating System				
30-41-1A	C		1	(O) May be inoperative provided that:  (a) The indicating system associated with the pilot handling/flying station is operative, and

30-41-1B	C	-	0	<p>(b) An alternate procedure is established and used to ensure correct operation of the affected windshield heating system.</p> <p><b>Procedures</b></p> <p>(O) To give guidance to perform a pre-flight check of the affected heating system.</p> <p>May be inoperative provided that operations are not conducted into known or forecasted icing conditions.</p>
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**References:** N/A

**Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

The next failure of the heating system may be undetected. Consequently the dispatch is allowed provided that at least the indicating system on the flying pilot's side is operative. This will ensure safe operation into icing conditions.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-5
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
30-42 Windshield Wipers (JAR-OPS 1.645)				
(1) Wipers	C	-	0	May be inoperative provided that the aeroplane is not operated in known or forecasted precipitation within the arrival and departure areas.  <u>Note:</u> Check Flight Manual for minimum required equipment for Cat II or III approaches and low visibility take-offs.
(2) High Speed Function	C	-	0	May be inoperative provided that the associated low speed function is operative.
(3) Low Speed Function	C	-	0	May be inoperative provided that the associated high speed function is operative.

**Helicopters:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				

30-42 Windshield Wipers (JAR-OPS 3.675)	C	-	-	One or more may be inoperative provided that the aircraft is not operated in known or forecast precipitation that requires their use.
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
				(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
<b>30-42-1 Windshield Wipers (MC)</b>				
30-42-1A	C	-	0	May be inoperative provided that:  (a) No precipitation is forecasted during a period from one hour before until one hour after the estimated time of departure and arrival at the take-off and destination aerodromes,  (b) Affected wiper is not part of the equipment required for the intended operation.  <b>Note:</b> Take-off and destination aerodromes include any take-off and destination alternate aerodromes required by the operational rules.
30-42-1B	D	-	0	(O) (M) May be inoperative provided that an alternative windshield rain protection mean (e.g. Rain Repellent System, Coating, etc.) is installed and verified operative.  <b>Procedures</b> (O) or (M) To provide guidance to check correct operation of the system.
30-42-1-1 High Speed Function				
30-42-1-1A	C	-	0	May be inoperative provided that the associated low speed function is operative.
30-42-1-2 Low Speed Function				



30-42-1-2A	C	-	0	May be inoperative provided that the associated high speed function is operative.
30-42-1-3 Other Control Function (e.g. Park, Intermittent, etc.)				
30-42-1-3A	C	-	0	One or more may be inoperative provided that:  (a) It does not affect operation of the wipers, and  (b) It is acceptable to the affected flight crew member(s).

**Aircraft applicability:****References:** CAT.IDE.A.120**Explanatory notes:**

The proposed guidance is based on the existing TGL 26 guidance.

The first dispatch condition of entry 30-42-1A is changed compared to the existing TGL 26. 'Arrival and departure areas' wording was not considered clear enough. The proposed wording is now based on operational requirements. An additional dispatch condition is proposed to be added to account for the operational requirements on wipers (low visibility operations, etc.)

30-42-1B new entry is proposed to allow dispatch with windshield wipers inoperative when an equivalent system is installed (rain repellent, etc.).

30-42-1-1 & 30-42-1-2 are consistent with the existing TGL 26 guidance.

30-42-1-3 new entry is proposed to allow dispatch with other windshield wipers control function inoperative.

**Additional considerations:**

30-42-1A Condition (b) ensures that when low visibility conditions are known or forecasted, approach or take-off minima do not require their use.

This can be verified, for example, by checking the Aircraft Flight Manual for minimum required equipment for Cat II or III approaches and low visibility take-offs.

30-42-1B allows dispatch with windshield wipers inoperative when an equivalent system is installed (rain repellent, etc.)

30-42-1-1

It is assumed in this guidance that the efficiency of wipers under low speed is adequate for all kind of precipitations.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	(4) Number required for dispatch
				(5) Remarks or Exceptions
30-40    Equivalent means to being equipped with windshield wipers (if installed) (JAR-OPS 1.645)	C	-	0	<p>May be inoperative provided that:</p> <p>(a) The aeroplane is not operated in known or forecast precipitation within the arrival and departure areas, and</p> <p>(b) When low visibility conditions are known or forecast, approach or take-off minima do not require their use.</p> <p><u>Note 1:</u> Check Flight Manual for minimum required equipment for Cat II or III approaches and low visibility take-offs.</p> <p><u>Note 2:</u> Equivalent systems may include rain repellent or other systems.</p> <p><u>Note 3:</u> A deactivated rain repellent system can be considered as a non-installed system.</p>

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 30 Ice and Rain Protection				PAGE: 30-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
<b>30-40-1    Alternative Windshield Rain Protection Means (e.g. Rain Repellent System, Coating, etc.)  (MC)</b>				
30-40-1A	C	-	0	May be inoperative provided that:  (a) No precipitation is forecasted during a period from one hour before until one hour after the estimated time of departure and arrival at the take-off and destination aerodromes, and  (b) Affected system is not part of the equipment required for the intended operation.  <b>Note:</b> Take-off and destination aerodromes include any take-off and destination alternate aerodromes required by the operational rules.
30-40-1B	C	-	0	May be inoperative provided that windshield wipers are operative.

**Aircraft applicability:****References:** CAT.IDE.A.120

**Explanatory notes:**

The first dispatch condition of entry 30-42-1A is changed compared to the existing TGL 26. 'Arrival and departure areas' wording was not considered clear enough. The proposed wording is now based on operational requirements.

An additional dispatch condition is proposed to be added to account for potential additional operational requirements (low visibility operations, etc.)

30-40-1B new entry is proposed to allow dispatch when windshield wipers are installed and operative.

**Additional considerations:**

30-40-1A Condition (b) ensures that when low visibility conditions are known or forecasted, approach or take-off minima do not require their use.

This can be verified, for example, by checking the Aircraft Flight Manual for minimum required equipment for Cat II or III approaches and low visibility take-offs.

**ATA 31 INDICATING/RECORDING SYSTEMS****Summary of the guidance items:**

<b>Item</b>	<b>ATA</b>	<b>EASA IR reference</b>	<b>CS Reference</b>	<b>Existing Foreign Guidance</b>
Clocks (MC)	31-21-1	CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130	25.1303	TCCA 31.1
Flight Data Recorder (MC)	31-31-1	CAT.IDE.A.185; CAT.IDE.H.185	25.1459	FAA PL-87 TCCA 31.3
Combination Recorder (MC)	31-31-2	CAT.IDE.A.200; CAT.IDE.H.200		FAA PL-87
Quick Access Recorder (MC)	31-31-3	GM1-ORO.AOC.130 AMC1-ORO.AOC.130		FAA PL-87
Flight Data Recorder (FDR) Required Parameters (MC)	31-31-4	CAT.GEN.MPA.195		FAA PL-87

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 31 Indicating/Recording Systems					PAGE: 31-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
31-21 Clocks (JAR-OPS 1.650/1.652)		C	-	0	<p>May be inoperative provided that an accurate timepiece is operative on the flight crew compartment indicating the time in hours, minutes and seconds.</p> <p><u>Note 1:</u> The above is applicable only to those aeroplanes where the clock has no implication on other equipment, e.g. FDR; otherwise the effects on such other systems must be considered.</p> <p><u>Note 2:</u> On the basis that the timepiece required does not need to be approved, an accurate pilot's wristwatch which indicates hours, minutes and seconds would be acceptable.</p>

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

ATA Chapter: 31 Indicating/Recording Systems				PAGE: 31-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>31-21-1          Clock                       (MC)</b>  31-21-1A	C	-	0	(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
				May be inoperative provided that an accurate timepiece is operative in the flight crew compartment indicating the time in hours, minutes and seconds.  <u>Note:</u> On the basis that the timepiece required does not need to be approved, an accurate pilot's wristwatch which indicates hours, minutes and seconds would be acceptable.

**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

The above is applicable only to those aircraft where the clock has no implication on other equipment, e.g. FDR; otherwise the effects on such other systems must be considered.

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 31 Indicating/Recording Systems					PAGE: 31-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
31-31	Flight Data Recorder (FDR) (if installed) (JAR-OPS 1.715/720/725) (JAR-OPS 3.715 / 3.720)	A	-	0	<p>One or more may be inoperative provided that:</p> <p>(a) The aeroplane/helicopter does not exceed 8 further consecutive flights with the FDR inoperative,</p> <p>(b) A maximum of 72 hours have elapsed since the FDR was found to be inoperative, and</p> <p>(c) Any Cockpit Voice Recorder required to be carried is operative.</p> <p><u>Note 1:</u> This alleviation is not applicable to combined CVR/FDRs. For those combined systems, see the entries for combination recorders in item 31-31.</p> <p><u>Note 2:</u> The flight data recorder is considered to be inoperative when any of the following conditions exist:</p> <p>(i) Loss of the flight recording function is evident to the flight crew during the pre-flight check, e.g. by means of a system status monitor, or</p> <p>(ii) The need for maintenance has been identified by the system monitors, where available, with the setting of an indicator and the cause of that setting has not been determined, or</p> <p>(iii) Analyses of recorded data or maintenance actions have shown that more than 5% of the total number of individual parameters (variable and discrete) required to be recorded for the particular aircraft are not being recorded properly.</p>



				<p><u>Note 3:</u> Where improper recording affects 5% of the parameters or less, timely corrective action will need to be taken by the aeroplane operator in accordance with the approved maintenance procedures.</p>
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 31 Indicating/Recording Systems				PAGE: 31-1
(1) System & Sequence Numbers Item		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
31-31-1	Flight Data Recorder (FDR) <b>(MC)</b>			
31-31-1A		D	-	- Any in excess of those required may be inoperative provided that the FDR parameters are not required for monitoring purpose.
31-31-1B		A	-	0 May be inoperative provided that:  (a) The aircraft does not exceed 8 further consecutive flights with the FDR inoperative, and  (b) A maximum of 72 hours have elapsed since the FDR was found to be inoperative, and  (c) Any Cockpit Voice Recorder required to be carried is operative.  <u>Note 1:</u> This alleviation is not applicable to combined CVR/FDRs. For those combined systems, see the entries for combination recorders in item 31-31-3.

<p>31-31-2      Flight Data Recorder (FDR) Required Parameters (MC)</p> <p>31-31-2A</p>	A	-	0	<p><u>Note 2:</u> The flight data recorder is considered to be inoperative when any of the following conditions exist:</p> <p>(i) Loss of the flight recording function is evident to the flight crew during the pre-flight check, e.g. by means of a system status monitor; or</p> <p>(ii) The need for maintenance has been identified by the system monitors, where available, and the failure origin has not been identified; or</p> <p>(iii) Analyses of recorded data or maintenance actions have shown that more than 5% of the total number of individual parameters (variable and discrete) required to be recorded for the particular aircraft, are not being recorded properly (refer to 31-31-1C).</p> <p><u>Note 3:</u> Where improper recording affects 5% of the required parameters or less, refer to item 31-31-4.</p> <p>Up to 5% of the required parameters may be inoperative for a maximum of 90 calendar days or until the next maintenance inspection, whichever occurs first.</p>
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**References:** CAT.IDE.A.190; CAT.IDE.H.190.

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

31-31-1A entry is proposed to be introduced to allow relief for equipment or functions installed in addition to the requirements.

Condition (ii) under Note 2 wording has been clarified.

**Additional considerations:**

Cockpit voice recorder is covered under item 23-71-1.

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 31 Indicating/Recording Systems					PAGE: 31-2
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
31-31	Combination Recorder (If installed) (JAR-OPS 1.727) (JAR-OPS 3.715 / 3.720)	A	1	0	<p>If one combination recorder is installed, the flight data recorder or the cockpit voice recorder function may be inoperative provided:</p> <p>(a) The other function, where required, is operative,</p> <p>(b) The aeroplane/helicopter does not exceed 8 further consecutive flights with the inoperative function, and</p> <p>(c) A maximum of 72 hours have elapsed since the inoperative function was found.</p>
		A	2	1	<p>If two combination recorders are installed, one may be inoperative provided:</p> <p>(a) The other combination recorder is operative, and</p> <p>(b) A maximum of 10 days have elapsed since the combination recorder was found to be inoperative.</p> <p><u>Note 1:</u> A combination recorder is a single flight recorder that combines the functions of two or more accident recording functions in a single, crash-protected box.</p> <p><u>Note 2:</u> The flight data recorder is considered to be inoperative when any of the following conditions exist:</p>

				<p>(i) Loss of the flight recording functions is evident to the flight crew during the pre-flight check, e.g. by means of a system status monitor, or</p> <p>(ii) The need for maintenance has been identified by the system monitors, where available, with the setting of an indicator and the cause of that setting has not been determined, or</p> <p>(iii) Analyses of recorded data or maintenance actions have shown that more than 5% of the total number of individual parameters (variable and discrete) required to be recorded for the particular aircraft are not being recorded properly.</p> <p><u>Note 3:</u> Where improper recording affects 5% of the parameters or less, timely corrective action will need to be taken by the aeroplane operator in accordance with approved maintenance procedures.</p>
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 31 Indicating/Recording Systems				PAGE: 31-
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA				
<b>31-31-2 Combination Recorder (MC)</b>				
31-31-2A	D	-	-	(O) (M) Any function may be inoperative provided that:  (a) The affected function is not required, and  (b) The affected data is not required for monitoring purposes.
31-31-2B	A	1	0	Flight data recorder and/or cockpit voice recorder function may be inoperative provided that:  (a) The other function, where required, is operative,  (b) The aircraft does not exceed 8 further consecutive flights with the inoperative function, and  (c) A maximum of 72 hours have elapsed since the inoperative function was found.  <u>Note 1:</u> A combination recorder is a single flight recorder that combines the functions of two or more accident recording functions in a single, crash-protected box.

31-31-2C	A	2	1	<p><u>Note 2:</u> The flight data recorder is considered to be inoperative when any of the following conditions exist:</p> <p>(i) Loss of the flight recording function is evident to the flight crew during the pre-flight check, e.g. by means of a system status monitor; or</p> <p>(ii) The need for maintenance has been identified by the system monitors, where available, and the failure origin has not been identified; or</p> <p>(iii) Analyses of recorded data or maintenance actions have shown that more than 5% of the total number of individual parameters (variable and discrete) required to be recorded for the particular aircraft are not being recorded properly.</p> <p>Note 3: Where improper recording affects 5% of the required parameters or less, refer to item 31-31-4.</p> <p>One of the two required combination recorders may be inoperative for a maximum of 10 calendar days.</p>
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**References:** CAT.IDE.A.200; CAT.IDE.H.200.

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

31-31-2A entry is proposed to be introduced to allow relief for equipment or functions installed in addition to the requirements.

Condition (ii) under Note 2 wording has been clarified.

**Additional considerations:**

Cockpit voice recorder is covered under item 23-71-1.

**Existing TGL 26 item:****Aeroplanes**

ATA Chapter: 31 Indicating/Recording Systems				PAGE: 31-3
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
31-31 Quick Access Recorder (QAR) (JAR-OPS 1.037) (if installed)	C	1	0	(O)(M) May be inoperative for Flight Data Monitoring (FDM) purposes, provided that approved alternate procedures, if appropriate to other programmes using associated data, are established and used.
	D	1	0	(M) May be inoperative provided that procedures do not require its use.

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 31 Indicating/Recording Systems				PAGE: 31-3
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
31-31-3 Quick Access Recorder (QAR) (or any equivalent Flight Data Monitoring equipment) (MC)				

31-31-3A	C	1	0	(O)(M) May be inoperative when used for Flight Data Monitoring (FDM) purposes, provided that approved alternate procedures, if appropriate to other programmes using associated data, are established and used.  <b>Procedures</b> (O) or (M) To provide guidance for alternate procedures associated to data monitoring programmes, as applicable.
31-31-3B	D	1	0	May be inoperative provided that procedures do not depend upon its use.

**References:** GM1-ORO.AOC.130, AMC1-ORO.AOC.130

**Explanatory notes:**

The level of relief of the proposed MMEL guidance is consistent with the existing TGL 26 guidance.

The maintenance task under entry 31-31-3B is proposed to be removed.

**Additional considerations:**

N/A

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 31 Indicating/Recording Systems				PAGE: 31-1
(1) System & Sequence Numbers Item	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
31-31-4      Flight Data Recorder (FDR) Required Parameters  (MC)				
31-31-4A	A	-	-	Up to 5% of the required parameters may be inoperative for a maximum of 90 calendar days or until the next maintenance inspection, whichever occurs first.

**References:** CAT.GEN.MPA.195**Explanatory notes:**

This item is proposed to ensure that inoperative required FDR parameters are repaired within a reasonable period of time. This proposal is consistent with the operational check of the FDR recording introduced in AMC1-CAT.GEN.AH.195.

**Additional considerations:**

This item applies whenever the FDR is not considered inoperative in accordance with item 31-31-1B or 31-31-2B but some required parameters have been discovered inoperative.

## ATA 33 LIGHTS

**Summary of the guidance items:**

Item	ATA	EASA IR Reference	CS Reference	Existing Guidance Foreign
Flight Crew Compartment Lighting	<u>33-10-1</u>	CAT.IDE.A.115; CAT.IDE.H.115	23.1381 25.1381 27.1381 29.1381	FAA PL-77 TCCA 33-10-1
Passenger Compartment Lighting	<u>33-20-1</u>	CAT.IDE.A.115; CAT.IDE.H.115		TCCA 33-20-1
Cabin Signs (Fasten seat belts, etc.)	<u>33-20-2</u>	CAT.IDE.A.210; CAT.IDE.H.210	23.791 25.791	FAA PL-89 FAA PL-123 TCCA 33-20-2
Lights for Amphibians and Seaplanes	<u>33-29-1</u>	CAT.IDE.A.115; CAT.IDE.H.115		
Navigation/Position Lights	<u>33-41-1</u>	CAT.IDE.A.115; CAT.IDE.H.115	23.1385 to 23.1397 25.1385 to 25.1397 27.1385 to 27.1397 29.1385 to 29.1397	FAA PL-91 (wing and tail white position lights only) TCCA 33-40-3
Anti-Collision Light System	<u>33-42-1</u>	CAT.IDE.A.115; CAT.IDE.H.115	23.1401 25.1401 27.1401 29.1401	TCCA 33-40-2
Landing Lights	<u>33-44-1</u>	CAT.IDE.A.115; CAT.IDE.H.115	23.1383 25.1383 27.1383 29.1383	TCCA 33-40-1
Cabin Emergency Lighting (Aeroplanes)	<u>33-50-1</u>	CAT.IDE.A.275	23.811 (Emergency exit marking) 23.812 25.811 (Emergency	TCCA 33-50-2

Item	ATA	EASA IR Reference	CS Reference	Existing Guidance	Foreign
			exit marking) 25.812		
Overhead Emergency Lighting (each aisle)	<u>33-50-1-1</u>	CAT.IDE.A.275			
EXIT Signs	<u>33-50-1-2</u>	CAT.IDE.A.275			
Exit Area Lighting	<u>33-50-1-3</u>	CAT.IDE.A.275			
Floor Proximity Lighting	<u>33-50-1-4</u>	CAT.IDE.A.275		TCCA 33-50-1	
Individual Lights/ Strips	<u>33-50-1-4-1</u>	CAT.IDE.A.275			
EXIT Markers	<u>33-50-1-4-2</u>	CAT.IDE.A.275			
Cabin Emergency Lighting (Helicopters)	<u>33-50-1</u>	CAT.IDE.H.275	29.811 (Emergency exit marking) 29.812		
Cabin Emergency Lighting System	<u>33-50-1-1</u>	CAT.IDE.H.275			
EXIS Lighting	<u>33-50-1-2</u>	CAT.IDE.H.275			
Helicopter Emergency Egress Lighting System (HEELS)	<u>33-50-1-3</u>	CAT.IDE.H.275			
Exterior Emergency Lighting Systems	<u>33-50-2</u>	CAT.IDE.A.275	25.812(g)(h)	TCCA 33-50-3	
Escape Slide Lighting	<u>33-50-2-1</u>	CAT.IDE.A.275			
Overwing Escape Route Lighting	<u>33-50-2-2</u>	CAT.IDE.A.275			

**Existing TGL 26 item:****Aeroplanes & Helicopters**

ATA Chapter: 33 Lights					PAGE: 33-1
(1) System & Sequence Numbers		(2) Rectification Interval			
ITEM		(3) Number installed			
ATA		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
33-10	Flight Crew Compartment Lighting (JAR-OPS 1.640)	C	-	0	One or more may be inoperative for daylight operations.
		C	-	-	Individual lights may be inoperative provided that: (a) Sufficient lighting is operative to make each required instrument, control, and other device for which it is provided easily readable, (b) Sufficient flight crew compartment emergency lighting is operative, and (c) Lighting configuration at dispatch is acceptable to the flight crew.
		C	-	-	Co-pilot's station instrument lights may be inoperative for single pilot operation, provided that no co-pilot's station instrument is required to be used by the pilot.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 33 Lights						PAGE: 33-x	
(1) System & Sequence Numbers			(2) Rectification Interval				
Item			(3) Number installed				
<div>33-10-1</div> <div>Flight Crew Compartment Lighting</div> <div>33-20-1A</div> <div>33-20-1B</div> <div>33-20-1C</div> <div>33-20-1D (Helicopters and other than CAT Aeroplanes operations)</div>			(4) Number required for dispatch				
			(5) Remarks or Exceptions				
			C	-	0	May be inoperative for daylight operations.	
			C	-	-	Individual lights may be inoperative provided that:  (a) Sufficient lighting is operative to make each required instrument, control, and other device for which it is provided easily readable,  (b) Required flight crew compartment emergency lighting is operative, and  (c) Lighting configuration at dispatch is acceptable to the flight crew.	
			C	-	-	Co-pilot’s station instrument lights may be inoperative for single pilot operations, provided that no co-pilot’s station instrument is required to be used by the pilot.	
			C	-	0	May be inoperative for daylight operations under VFR.	

**References:**

CS 23.1381; CS 25.1381; CS 27.1581; CS 29.1381; CAT.IDE.A.115; CAT.IDE.H.115.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

An additional entry is proposed to be introduced to reflect the applicable requirements.



**Additional considerations:**

Based on the aircraft flight crew compartment emergency lighting configuration, condition (b) under 33-20-1B has to be clarified to indicate the lights that remain supplied under emergency power supply (e.g. DOME light, etc.).

**Existing TGL 26 item:****Aeroplanes**

ATA Chapter: 33 Lights				PAGE: 33-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
33-20 Passenger Compartment Lighting (JAR-OPS 1.640)	C	-	-	Individual lights may be inoperative provided that: (a) Lighting is acceptable for the cabin crew to perform their required duties, and (b) Inoperative lights are not part of the cabin emergency lighting.  <u>Note:</u> For cabin emergency lighting, refer to item 33-50.
	D	-	-	May be inoperative provided that passengers are not carried.  <u>Note:</u> Reading lights are not included as they are considered as non-safety-related items.

**Helicopters:**

ATA Chapter: 33 Lights				PAGE: 33-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	

33-20 Passenger Compartment Lighting (JAR-OPS 3.640)	D	-	0	May be inoperative for daylight operations.
	D	-	0	May be inoperative provided that passengers are not carried.
	C	-	-	Individual lights may be inoperative provided that:  (a) Inoperative lights do not exceed 50% of the total installed,  (b) Inoperative lights are not part of the cabin emergency lighting, and  (c) Lighting is acceptable for the crew located in the cabin to perform their required duties.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes & Helicopters**

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				
33-20-1	Passenger Compartment Lighting					
33-20-1A		D	-	0	May be inoperative provided that passengers are not carried.	
33-20-1B	(Aeroplanes)	C	-	-	Individual lights may be inoperative provided that:  (a) Lighting is acceptable for the crew located in the cabin to perform their required duties, and  (b) Inoperative lights are not part of the cabin emergency lighting.	
33-20-1B	(Helicopters)	C	-	-	Individual lights may be inoperative provided that:  (a) Inoperative lights do not exceed 50% of the total installed,  (b) Lighting is acceptable for the crew located in the cabin to perform their required duties, and  (c) Inoperative lights are not part of the cabin emergency lighting.	
33-20-1C	(Helicopters)	D	-	0	May be inoperative for daylight operations.	

**References:**

CAT.IDE.A.115; CAT.IDE.H.115.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

Some lights installed on the aircraft may be part of the cabin emergency lighting equipment. In this case, relief cannot be granted in the MMEL beyond the minimum required configuration.

For cargo and non-passenger carrying operations there must be sufficient lighting for the inspection of cargo for the verification of cargo restraint or for firefighting purposes.

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 33 Lights				PAGE: 33-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	(4) Number required for dispatch
				(5) Remarks or Exceptions
33-20 Cabin Signs (‘Fasten Seat Belt’ & ‘No Smoking’ Signs) (JAR-OPS 1/3.731)	C	-	-	(M)(O) One or more may be inoperative provided that no passenger seat, crew member seat or lavatory is occupied from which a ‘No Smoking/Fasten Seat Belt’ sign is not readily legible.
	C	-	-	(M)(O) ‘No Smoking/Fasten Seat Belt’ signs may be inoperative and the affected passenger seat(s), cabin crew seat(s) or lavatories may be occupied provided that:  (a) The PA system is operative and can be clearly heard throughout the cabin during flight, and  (b) A procedure is used to notify passengers when the seat belts must be fastened and smoking is prohibited, as appropriate.
	C	-	-	May be inoperative provided that passengers are not carried.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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
33-20-2 Cabin Signs ('Fasten Seat Belt', 'No Smoking' Signs, Return to Cabin, NO PED)				
33-20-2A	C	-	-	(M)/(O) One or more may be inoperative provided that affected passenger seats, crew member seats or lavatories from which a cabin sign is not readily legible are blocked and placarded 'DO NOT OCCUPY'.
33-20-2B	C	-	-	<p><b>Procedures:</b></p> <p>(M)/(O) to give guidance reference for a practical mean of prohibiting the use of the affected seat.</p> <p>(O) To alert the crew about affected seats/lavatories.</p> <p>(O) One or more may be inoperative and the affected passenger seats, crew member seats or lavatories may be occupied provided that:</p> <p>(a) The passenger address system is operative and can be clearly heard throughout the cabin during flight, and</p> <p>(b) A procedure is used to notify passengers as appropriate.</p> <p><b>Procedures:</b></p> <p>(O) To provide the alternate procedure to crew located in the cabin to notify passengers and crew members when using crew rest facility – bunk, as applicable.</p>

33-20-2C	C	-	-	May be inoperative provided that passengers are not carried.
33-20-2-1 Aural Tone Function	C	-	0	(O) May be inoperative provided that a procedure is established and used to verify that visual indications are taken into account by passengers.
33-20-2-2 Automatic Function	C	-	0	(O) May be inoperative provided that:  (a) Manual control function is operative, and  (b) An alternate procedure is established and used.

**References:**

CS 23.791; CS 25.791; CAT.IDE.A.210; CAT.IDE.H.210.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

New entries to cover operations without passengers and failure modes affecting aural tone function or automatic function of the system are proposed.

**Additional considerations:**

The requirement of condition 33-20-2B (a) may not apply to aircraft which are not required to install a passenger address system.



**Summary of the requirements on aircraft external lights:**

Candidate MMEL relief	Operating Environment		
	Day VFR	Night VFR	IFR
CS 23.1383  CS 23.1385 /87/89/9 1/93/95/ 97  CS 23.1401  CS 23.1399  NCC.IDE. A/H.125/ 130 (TBC)	Taxi (Spec.)    Anti-Coll. Sys. (Req.+Spec.)	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. Sys. (Req.+Spec.)  Riding (Seaplane, Amph.) (Spec.)  Navigation/Position Lights One landing Light Anti-Coll. Syst. Lights Inter.Reg. for Preventing Collisions at Sea (Amph. only)	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. Sys. (Req.+Spec.)  Riding (Seaplane, Amph.) (Spec.)  Navigation/Position Lights One landing Light Anti-Coll. Syst Lights Inter.Reg. for Preventing Collisions at Sea (Amph. only)
CS 23.1383  CS 23.1385 /87/89/9 1/93/95/ 97  CS 23.1401  CS 23.1399  CAT.IDE. A/H.125/ 130	Taxi (Spec.)    Anti-Coll. Sys. (Req.+Spec.)   Anti-Coll. Syst.	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. Sys. (Req.+Spec.)  Riding (Seaplane, Amph.) (Spec.)  Navigation/Position Lights Two landing Lt. (or 2 Fil.) Anti-Coll. Syst. Lights Inter. Reg. for Preventing Collisions at Sea (Amph. only)	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. Sys. (Req.+Spec.)  Riding (Seaplane, Amph.) (Spec.)  Navigation/Position Lights Two landing Lt. (or 2 Fil.) Anti-Coll. Syst Lights Inter. Reg. for Preventing Collisions at Sea (Amph. only)
CS 25	See CS 23 above requirements		
CS 27.1383  CS 27.1385  /87/89/9 1/93/95/ 97	Hovering (Spec.)	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. (Req. (Red only)+Specs)	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. (Req. (Red only)for night +Specs)

CS 27.1401  CS 27.1399 NCC.IDE. A/H.125/ 130(TBC)		Riding (water operations) Navigation/Position Lights One landing Light Anti-Coll. Syst. Lights Inter.Reg. for Preventing Collisions at Sea (Amph. only)	Riding (water operations) Navigation/Position Lights One landing Light Anti-Coll. Syst Lights Inter.Reg. for Preventing Collisions at Sea (Amph. only)
CS 27.1383  CS 27.1385  /87/89/9 1/93/95/ 97  CS 25.1401   CS 27.1399  CAT.IDE. A/H.125/ 130	Hovering (Spec.)        Anti-Coll. Syst.	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. (Req.+Specs)  Riding (water operations)  Navigation/Position Lights Two landing Lt. (one adj.) Anti-Coll. Syst. Lights Inter.Regulations for Preventing Collisions at Sea (Amph. only)	Landing (Spec.) Position (L red, R gr., Rear) (Spec.)  Anti-Coll. (Req. for night +Specs) Riding (water operations)  Navigation/Position Lights Two landing Lt. (one adj.) Anti-Coll. Syst. Lights Inter.Regulations for Preventing Collisions at Sea (Amph. only)
CS 29	See CS 27 above		

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 33 Lights				PAGE: 33-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA 33-41 Navigation/Position Lights ( <i>JAR-OPS 1.640</i> )	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
	C	-	0	One or more may be inoperative for daylight operations.
	C	-	-	Any in excess of those required may be inoperative for night operations.

**Helicopters:**

ATA Chapter: 33 Lights				PAGE: 33-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA 33-41 Navigation/Position Lights ( <i>JAR-OPS 3.640</i> )	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
	C	-	0	One or more may be inoperative for daylight operations.
	C	-	-	Any in excess of those required may be inoperative for night operations.
	A	-	-	(O) One or more may be inoperative for a single night flight when departing from an offshore or remote installation provided that:  (a) The appropriate ATC unit has been informed before departure, (b) The anti-collision light system is operative, and (c) The landing light system is operative.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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		
<b>33-41-1 Navigation/Position Lights</b>				
33-41-1A	C	-	0	One or more may be inoperative for daylight operations.
33-41-1B	C	-	-	Any in excess of those required may be inoperative for night operations.
33-41-1C (Helicopters)	A	-	-	<p>(O) One or more may be inoperative for a single night flight when departing from an offshore or remote installation provided that:</p> <p>(a) The appropriate Air Navigation Service Provider (ANSP) has been informed before departure,</p> <p>(b) The anti-collision light system is operative, and</p> <p>(c) The landing light system is operative.</p> <p><b>Procedures:</b></p> <p>(O) To provide guidance to the crew for operations of anti-collision and landing lights.</p>

**References:**

CS 23.1385 to CS 23.1397; CS 25.1385 to CS 25.1397; CS 27.1385 to CS 27.1397;  
 CS 29.1385 to CS 29.1397; CAT.IDE.A.115; CAT.IDE.H.115.

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

**Additional considerations:**

For the purpose of compliance with 33-41-1B for night operations, all except the following minimum may be inoperative:

- One stationary red forward/wing tip light,
- One stationary green forward/wing tip light, and
- One stationary white light on the tail or on each wing tip.

A light composed of more than one bulb or LED, may be partially degraded, but still considered operative for the purpose of the associated requirement, provided that the degraded configuration has been demonstrated acceptable to meet the requirements.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 33 Lights				PAGE: 33-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
		(3) Number installed		
			(4) Number required for dispatch	
				(5) Remarks or Exceptions
ATA				
33-42 Anti-Collision Light Systems (JAR-OPS 1.640)				
(1) Fuselage Light (Beacon or Strobe Type)	C	-	1	(O) Either the upper or the lower fuselage lights may be inoperative provided all white wing-tip strobe lights are operative.
	C	-	0	(O) One or more may be inoperative for daylight operations provided all white wing-tip strobe lights are operative.  <u>Note:</u> If the fuselage anti-collision light(s) is(are) inoperative, alternate procedures are established and used when the aircraft is on the ground with the engine(s) running.
(2) Wing-Tip Strobe Light (If installed)	C	-	0	One or more may be inoperative.

**Helicopters:**

ATA Chapter: 33 Lights				PAGE: 33-3
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
		(3) Number installed		
			(4) Number required for dispatch	
				(5) Remarks or Exceptions
ATA				

<p>33-42 Anti-Collision Light Systems (JAR-OPS 3.640)</p> <p>(1) Anti-Collision Light (Beacon or Strobe Type)</p> <p>(a) Daylight operations</p> <p>(b) Night operations</p> <p>(c) Offshore and remote operations</p> <p>(2) White Strobe Light (if installed)</p>	<p>B</p> <p>C</p> <p>C</p> <p>A</p> <p>C</p>	<p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p>0</p> <p>1</p> <p>1</p> <p>0</p> <p>0</p>	<p>(O) One or more may be inoperative.</p> <p>Any in excess of one may be inoperative.</p> <p>Any in excess of one may be inoperative.</p> <p>(O) One or more may be inoperative for a single night flight when departing from an offshore or remote installation provided that:</p> <p>(a) The appropriate ATC unit has been informed before departure,</p> <p>(b) The navigation light system is operative, and</p> <p>(c) The landing light system is operative.</p> <p><u>Note:</u> If the red anti-collision light (if installed) is inoperative, alternate procedures are established and used when the aircraft is on the ground with the engine(s) running and/or rotors turning.</p> <p>One or more may be inoperative.</p>
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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			
<b>33-42-1</b>	<b>Anti-Collision Light System</b>				<p><u>Note:</u> This guidance may be subject to additional restrictions in accordance with the applicable Rules of the Air.</p>
33-42-1-1	Fuselage Lights (Beacon or Strobe Type)				<p><u>Note:</u> If the fuselage anti-collision light is inoperative, alternate procedures are established and used when the aircraft is on the ground with engine(s) running.</p>
33-41-1-1A	(Aeroplanes)	C	-	1	<p>(O) Either the upper or the lower fuselage lights may be inoperative provided that an acceptable number of white wing-tip strobe lights are operative.</p> <p><b>Procedures:</b></p> <p>(O) To provide guidance to the crew for operations of anti-collision and strobe lights.</p>
33-41-1-1B	(Aeroplanes)	C	-	0	<p>(O) May be inoperative for daylight operations provided that all white wing-tip strobe lights are operative.</p> <p><b>Procedures:</b></p> <p>(O) To provide guidance to the crew for operations of anti-collision and strobe lights.</p>
33-41-1-1C	(Helicopters)	C	-	1	<p>Any in excess of one may be inoperative.</p>



33-41-1-1D (Helicopters)	A	-	0	<p>(O) One or more may be inoperative for a single night flight when departing from an offshore or remote installation provided that:</p> <p>(a) The appropriate Air Navigation Service Provider (ANSP) has been informed before departure,</p> <p>(b) The navigation light system is operative, and</p> <p>(c) The landing light system is operative.</p> <p><b>Procedures:</b></p> <p>(O) To provide guidance to the crew for operations of remaining lights.</p>
33-41-1-1E (Helicopters and other than Commercial Air Transport operations of aeroplanes)	B	-	0	May be inoperative for daylight operations.
33-42-1-2 Wing-Tip Strobe Lights (if installed)				
33-41-1-2A	C	-	0	One or more may be inoperative.

**References:**

CS 23.1401; CS 25.1401; CS 27.1401; CS 29.1401; CAT.IDE.A.115; CAT.IDE.H.115.

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

33-41-1-1A entry for fuselage light (beacon or strobe type) is proposed to introduce a clarification under the dispatch condition for strobe lights to compensate for anti-collision lights by adding 'an acceptable number'.

33-41-1-1E entry for fuselage light (beacon or strobe type), consistent with the TGL 26 guidance on helicopters. It is also extended to other than commercial Air transport operations of aeroplanes.

**Additional considerations:**

An anti-collision light system is required for Commercial Air Transport (CAT) operations and for other than Commercial Air Transport (CAT) operations under night VFR or IFR.

Additional airspace requirements may apply.

A light composed of more than one bulb or LED, may be partially degraded, but still considered operative for the purpose of the associated requirement, provided that the degraded configuration has been demonstrated acceptable to meet the requirements.

33-41-1-1A.

The acceptable number of white strobe lights has to be defined by the applicant according to the requirements applicable for anti-collision light system.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 33 Lights					PAGE: 33-2
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA 33-44   Landing Lights (JAR-OPS 1.640)		B	-	-	50% of landing lights may be inoperative for night operations.
		C	-	0	One or more may be inoperative for daylight operations.

**Helicopters:**

ATA Chapter: 33 Lights					PAGE: 33-3
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
ATA          33-44    Landing Lights (JAR-OPS 3.640)		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
		C	-	0	One or more may be inoperative for daylight operations.
		C	-	1	Any in excess of one adjustable landing light may be inoperative for night operations.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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					
<b>33-44-1</b>	<b>Landing Lights</b>						
33-44-1A	(Aeroplanes)	B	-	-	50% of landing lights may be inoperative for night operations.		
33-44-1B		C	-	0	One or more may be inoperative for daylight operations.		
33-44-1C	(Helicopters)	C	-	1	(O) Any in excess of one adjustable landing light may be inoperative for night operations.  <b>Procedures:</b> (O) To provide guidance to the crew for operations of remaining lights		

**References:**

CS 23.1383; CS 25.1383; CS 27.1383; CS 29.1383; CAT.IDE.A.115; CAT.IDE.H.115.

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

**Additional considerations:**

The above guidance does not cover the landing light extension/retraction system. Alternate dispatch conditions may be proposed based on the use of Taxi lights, if adequate for the the purpose.

A light composed of more than one bulb or LED, may be partially degraded, but still considered operative for the purpose of the associated requirement, provided that the degraded configuration has been demonstrated acceptable to meet the requirements.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 33 Lights					PAGE: 33-4
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
33-50 Cabin Emergency Lighting <i>(JAR-OPS 1.815)</i>					
(1) Overhead Emergency Lighting (each aisle)		B	-	-	A maximum of one in four consecutive overhead emergency lights (or light assemblies) may be inoperative.  <u>Note:</u> For aeroplanes which have two rows of lights per aisle (i.e. mounted on the overhead bins), then the above alleviation is acceptable for each row of lights but the inoperative lights must not be directly opposite each other.
(2) EXIT signs		C	-	-	Up to 50% of the bulbs may be inoperative in one or more signs.
		-	-	-	One may be inoperative provided that the associated door/exit is considered inoperative. Refer to item 52-22.  <u>Note:</u> If any twin overwing exits are served by a single sign, both exits should be considered inoperative.
(3) Exit Area Lighting		B	-	-	One may be inoperative.

ATA Chapter: 33 Lights				PAGE: 33-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA 33-50 Cabin Emergency Lighting ( <i>JAR-OPS 1.815</i> )				
(4) Floor Proximity Lighting				
(a) Individual Lights/strips	B	-	-	Lights/strips may be inoperative provided that:  (a) All lights/strips marking right angle intersection, including cross aisles and overwing exits, are operative,  (b) Along each aisle axis, all lights/strips within one meter of lights/strips marking right angle intersections are operative, and  (c) Along each aisle axis, for a particular lights/strips configuration, specific lights/strips are operative as agreed by the authority.
(4) Floor Proximity Lighting (cont.)				
(b) EXIT Markers	-	-	-	One may be inoperative provided that the associated door/exit is considered inoperative. Refer to item 52-22.

**Proposed EASA Guidance Book item:****Aeroplanes**

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		
<b>33-50-1</b>	<b>Cabin Emergency Lighting</b>			
33-50-1-1	Overhead Emergency Lighting (each aisle)			
33-50-1-1A		B	-	- A maximum of one in four consecutive overhead emergency lights (or light assemblies) may be inoperative.  <u>Note:</u> For aeroplanes which have two rows of lights per aisle (i.e. mounted on the overhead bins), then the above alleviation is acceptable for each row of lights but the inoperative lights must not be directly opposite each other.
33-50-1-2	EXIT Signs			
33-50-1-2A		C	-	- Up to 50% of the bulbs/LEDs may be inoperative in one or more signs provided that the sign remains legible.
33-50-1-2B		-	-	- One may be inoperative provided that the associated door/exit is considered inoperative. Refer to item 52-22.  <u>Note:</u> If any twin overwing exits are served by a single sign, both exits should be considered inoperative.
33-50-1-3	Exit Area Lighting			
33-50-1-3A		B	-	- One may be inoperative.
33-50-1-4	Floor Proximity Lighting			

33-50-1-4-1 Individual Lights/ strips				
33-50-1-4-1A	B	-	-	Lights/strips may be inoperative provided that:  (a) All lights/strips marking right angle intersection, including cross aisles and overwing exits, are operative,  (b) Along each aisle axis, all lights/strips within one meter of lights/strips marking right angle intersections are operative, and  (c) Along each aisle axis, for a particular lights/strips configuration, specific lights/strips are operative as agreed by the authority.
33-50-1-4-2 EXIT Markers				
33-50-1-4-2A	C	-	-	Up to 50% of the bulbs/LEDs may be inoperative in one or more signs provided that the sign remains legible.
33-50-1-4-2B	-	-	-	One may be inoperative provided that the associated door/exit is considered inoperative. Refer to item 52-22.

**References:** OPS.GEN.475;CS 23.811 (Emergency exit marking); CS 23.813; CS 25.811 (Emergency exit marking); CS 25.812; CAT.IDE.A.275; CAT.IDE.H.275.

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

33-50-1-2A Exit Signs and 33-50-1-4-2A EXIT Markers are proposed to be updated to account for LED technology.

**Additional considerations:**

N/A



**Existing TGL 26 item:****Helicopters:**

ATA Chapter: 33 Lights				PAGE: 33-4
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
33-50 Cabin Emergency Lighting (JAR-OPS 3.815)				
(1) Cabin Emergency Lighting System (Where required)		-	-	- May be inoperative provided that it is in accordance with the arrangements agreed with the national authority.
(2) EXIS Lighting (if installed)		B	-	0 May be inoperative overland, or for overwater operations within 10 minutes flying time of land.
(a) EXIS 1 Standard Length (24 LEDs)		B	-	0 A maximum of 3 LEDs may be inoperative with no more than 2 adjacent inoperative LEDs.
(b) EXIS 1 Half Length (12 LEDs)		B	-	0 A maximum of 1 LED may be inoperative.
(c) EXIS 1 One Third Length (8 LEDs)		B	-	0 A maximum of 1 LED may be inoperative.
(d) EXIS II		B	-	0 A maximum of 2 LEDs per corner strip, one in each arm, may be inoperative.
(e) EXIS III		B	-	0 A maximum of 4 LEDs per light assembly may be inoperative; no more than 1 LED is inoperative per band along any side.

(3) Helicopter Emergency Egress Lighting System (HEELS)  (if installed)	B	-	0	May be inoperative over land or for over-water operations within 10 minutes flying time of land.
	A	-	-	One element on each side of the passenger compartment and/or cockpit may be inoperative for a maximum of 3 calendar days.

**Proposed EASA Guidance Book item:****Helicopters**

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			
<b>33-50-1</b>	<b>Cabin Emergency Lighting</b>				
<b>33-50-1-1</b>	<b>Cabin Emergency Lighting System</b>	-	-	-	May be inoperative provided that it is in accordance with the arrangements agreed with the national authority.
<b>33-50-1-2</b>	<b>EXIS Lighting</b>				
33-50-1-2A		B	-	0	May be inoperative for flights over land or for flights over water at a distance from land not beyond 10 minutes flying time at normal cruise speed.
33-50-1-2-1	EXIS 1 Standard Length (24 LEDs)				
33-50-1-2-1A		B	-	0	A maximum of 3 LEDs may be inoperative with no more than 2 adjacent inoperative LEDs.
33-50-1-2-2	EXIS 1 Half Length (12 LEDs)				
33-50-1-2-2A		B	-	0	A maximum of 1 LED may be inoperative.
33-50-1-2-3	EXIS 1 One Third Length (8 LEDs)				
33-50-1-2-3A		B	-	0	A maximum of 1 LED may be inoperative.
33-50-1-2-4	EXIS II				
33-50-1-2-4A		B	-	0	A maximum of 2 LEDs per corner strip, one in each arm, may be inoperative.
33-50-1-2-5	EXIS III				

33-50-1-2-5A	B	-	0	A maximum of 4 LEDs per light assembly may be inoperative; no more than 1 LED is inoperative per band along any side.
<b>33-50-1-3 Helicopter Emergency Egress Lighting System (HEELS)</b>				
33-50-1-3A	B	-	0	May be inoperative for flights over land or for flights over water at a distance from land not beyond 10 minutes flying time at normal cruise speed.
33-50-1-3B	A	-	-	One element on each side of the passenger compartment and/or cockpit may be inoperative for 3 calendar days.

**References:**

CS 29.811 (Emergency exit marking); CS 29.812; CAT.IDE.H.275.

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 33 Lights						PAGE: 33-5
(1) System & Sequence Numbers ITEM		(2) Rectification Interval				
		(3) Number installed				
		(4) Number required for dispatch				
		(5) Remarks or Exceptions				
ATA						
33-50	Exterior Emergency Lighting Systems (JAR-OPS 1.815)	B	-	0	One or more may be inoperative for daylight operations.	
	(1) Escape Slide Lighting	B	-	0	One or more may be inoperative for daylight operations.	
		-	-	-	One may be inoperative for night operations provided that the associated door/exit is considered inoperative. Refer to item 52-22.	
	(2) Overwing Escape Route Lighting	B	-	-	One or more may be inoperative for daylight operations.	
		-	-	-	One may be inoperative for night operations provided that the associated door/exit is considered inoperative. Refer to item 52-22.	

**Proposed EASA Guidance Book item:****Aeroplanes**

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				
33-50-2	Exterior Emergency Lighting Systems					
33-50-2A		B	-	0	One or more may be inoperative for daylight operations.	
33-50-2-1	Escape Slide Lighting					
33-50-2-1A		B	-	0	One or more may be inoperative for daylight operations.	
33-50-2-1B		-	-	-	One may be inoperative for night operations provided that the associated door/exit is considered inoperative. Refer to item 52-22-1.	
33-50-2-2	Overwing Escape Route Lighting					
33-50-2-2A		B	-	0	One or more may be inoperative for daylight operations.	
33-50-2-2B		-	-	-	One may be inoperative for night operations provided that the associated door/exit is considered inoperative. Refer to item 52-22.	

**References:**

CS 25.812(g)(h); CAT.IDE.A.275.

**Explanatory notes:**

The level of relief is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

## ATA 34 NAVIGATION FLIGHT INSTRUMENTS

### Summary of the guidance items:

Item	ATA	EASA IR Reference	CS Reference	Existing Foreign Guidance
Primary Airspeed Indicator	<u>34-10-1</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303 23.1303	
Primary Altitude Indication	<u>34-10-2</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303 23.1303	
Turn and Slip Indicator /Turn Co-ordinators	<u>34-10-3</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303	
Vertical Speed Indicator	<u>34-10-4</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303	TCCA 34.11
OAT Indicator	<u>34-10-5</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303	
Altitude Alerting System	<u>34-15-1</u>	CAT.IDE.A.140		FAA PL-39
Radio Altimeter with an Audio Voice Warning	<u>34-15-2</u>	CAT.IDE.H.145		
Stabilised direction Indication	<u>34-20-1</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303	
Non-Stabilised direction Indication	<u>34-22-1</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303 23.1303	FAA PL-10 TCCA 34.5

Attitude Indication	<u>34-20-2</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303	
Standby Attitude Indication	<u>34-20-3</u>	CAT.IDE.A.125 CAT.IDE.A.130 CAT.IDE.H.125 CAT.IDE.H.130	25.1303 23.1303	PL-111 TCCA 34.3

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
34-10    Airspeed Indicators (JAR-OPS 1.650/1.652)				
(1) Single pilot operation	B	-	1	Any in excess of one may be inoperative provided that the operative airspeed indicator is on the commander's side.
(2) Two pilot operation	C	-	2	Any in excess of two may be inoperative provided that operative airspeed indicators are at each pilot's station.  <u>Note:</u> For aeroplanes fitted with EFIS, both airspeed indicator displays (tape) must be operative.
(3) Standby airspeed indicator	B	-	0	May be inoperative provided that both main airspeed indicators are operative.



**Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
34-10    Airspeed Indicators <i>(JAR-OPS 3.650/652)</i>				
(1) Single pilot operations	D	-	1	Any in excess of one may be inoperative provided the operative airspeed indicator is on the handling pilot's side.
(2) Two pilot operations	D	-	2	Any in excess of two may be inoperative provided operative airspeed indicators are at each pilot's station.
	B	-	1	Any in excess of one may be inoperative provided:  (a) The operative airspeed indicator is on the handling pilot's side, and (b) Flight is conducted by day under VFR over routes navigated by reference to visual landmarks.
(3) Helicopters equipped with EFIS displays				
(a) Standby airspeed indicator	B	-	0	May be inoperative provided:  (a) Both the commander's and co-pilot's airspeed indicator systems are operative, and (b) Flight is conducted by day under VFR over routes navigated by reference to visual landmarks.

				<u>Note:</u> For helicopters with EFIS type displays, the airspeed display (tape) must be operative.
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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							<u>Note</u> : Standby airspeed indication is not considered as a primary airspeed indication by this guidance.
34-10-1A      (Aeroplanes)		B	-	-	(O) May be inoperative provided that:  (a)    A primary airspeed information is available at each required pilot's station, and  (b)    Procedures are established and used to cover the loss of primary airspeed indication in-flight.  <b>Procedures:</b>  (O) To provide guidance to the crew for monitoring of erroneous indication and to ensure safe flight in case of the failure in-flight of a primary indication.  <u>Note</u> : The procedure can be based on the use of a secondary (standby) airspeed indication, if installed.		
34-10-1B      (Helicopters)		D	-	-	(O) May be inoperative provided that:  (a) A primary airspeed information is available at each required pilot's station, and  (b) Procedures are established and used to cover the loss of primary airspeed indication in-flight.		

34-10-1C (Helicopters)	B	-	1	<p><b>Procedures:</b></p> <p>(O) To provide guidance to the crew for monitoring of erroneous indication and to ensure safe flight in case of the failure in-flight of a primary indication.</p> <p><u>Note:</u> The procedure can be based on the use of a secondary (standby) airspeed indication, if installed.</p> <p>(O) Any in excess of one may be inoperative provided that:</p> <p>(a) The primary airspeed indication is available at the handling pilot's side,</p> <p>(b) Flight is conducted by day under VFR,</p> <p>(c) Operations are not conducted over water, and</p> <p>(d) Procedures are established and used to cover the loss of a primary airspeed indication in-flight.</p> <p><b>Procedures:</b></p> <p>(O) To provide guidance to the flight crew to ensure safe flight in case of the failure in-flight of a primary indication.</p> <p><u>Note:</u> The procedure can be based on the use of a secondary (standby) airspeed indication, if installed.</p>
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**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

#### **Explanatory notes:**

The proposed guidance is intended to provide a generic guidance on the MMEL development for the subject system to ensure that the sufficient indications, essential to the safety of flight, remain available to the crew.

This proposal is not based on the existing TGL 26 guidance.

#### **Additional considerations:**

The intent of this guidance is to ensure that the remaining indication essential to the safety of flight still satisfies the applicable requirements.

Applicable requirements are defined as both the airworthiness standards under which the aircraft was certified and the operating rules under which it is operated.

Relief can therefore be granted for an indication that is provided in excess of the applicable requirements. This may be achieved by the introduction of dispatch conditions to prevent certain kind of operations (e.g. IFR, dual pilot operations).

To comply with the applicable requirements, acceptable means other than duplication of instruments/indicators can be foreseen to ensure that sufficient information is available (e.g. switching of sources, speed tapes, etc.).

Consequently the guidance refers to primary indication rather than indicators or instruments. Additional clarification may be provided at the level of the aircraft type MMEL.

Compliance with airworthiness requirements may lead to the installation of secondary (standby) attitude indication.

The above guidance item does not cover such standby airspeed indication. If a standby airspeed indication is required to comply with airworthiness requirements for certification of the aircraft, (e.g. CS-23 with EFIS, CS-25, etc.), no relief can be given unless an acceptable level of safety is demonstrated, on a case-by-case basis, in accordance with CS-MMEL.

#### 34-10-1A

For aircraft fitted with EFIS, the airspeed indicator displays (tape) are considered as the primary airspeed indication and are therefore required at each required pilot station.

For single pilot operations, if credit has been taken during the certification, on the availability of the off side primary airspeed indication in order to meet applicable requirements, this may result in additional restrictions.

#### 34-10-1B

The same as 34-10-1A, except for the rectification interval.

#### 34-10-1C

The airspeed indication is less critical for the helicopters to ensure a safe landing further to the loss of airspeed under day VFR overland operations.

Dispatch is authorised with one primary airspeed indication left.

VFR condition allows departure from field under IMC under special VFR procedures.

**Summary of applicable requirements for airspeed Indication:**

Candidate MMEL relief	Operating Environment					
	Day VFR		Night VFR		IFR	
	Single Pilot	Two Pilot	Single Pilot	Two Pilot	Single Pilot	Two Pilot
CS-23 CS-23.1311  <b>NCC.IDE.A/H. 125/130</b>	1 +1(stby;ind.)  1	1 +1(stby;ind.)  2	1 +1(stby;ind.)  1	1 +1(stby;ind.)  2	1 +1(stby;ind.)  1	1 +1(stby;ind.)  2
CS-23.1303 CS-23.1311 <b>CAT.IDE.A/H. 125/130</b>	1 +1(stby;ind.) 1	1 +1(stby;ind.) 2	1 +1(stby;ind.) 1	1 +1(stby;ind.) 2	1 +1(stby;ind.) 1	1 +1(stby;ind.) 2
CS-25.1303 CS-25.1333 <b>NCC.IDE.A/H. 125/130</b>	1 ? 1	2 ? 2	1 ? 1	2 ? 2	1 ? 1	2 ? 2
CS-25.1303 CS-25.1333 <b>CAT.IDE.A/H. 125/130</b>	1 (2)* 1	2 (2)(+stby)* 2	1 (2)* 1	2 (2)(+stby)* 2	1 (2)* 1	2 (2)(+stby)* 2
CS-27.1303 CS-27 A.b <b>NCC.IDE.A/H. 125/130</b>	1 - 1	1 - 2	1 - 1	1 - 2	1 (2) 1	1 (2)(+stby) 2
CS-27.1303 CS-27 A.b <b>CAT.IDE.A/H. 125/130</b>	1 - 1	1 - 2	1 - 1	1 - 2	1 (2) 1	1 (2)(+stby) 2
CS-29.1303 CS-29.1333 CS-29 A.b <b>NCC.IDE.A/H. 125/130</b>	1 (2)* 1	1 (2)(+stby)* 2	1 (2)* 1	1 (2)(+stby)* 2	1 (2)* = 1	1 (2)(+stby)* = 2
CS-29.1303 CS-29.1333 CS-29 A.b	1 (2)*	1 (2)(+stby)*	1 (2)*	1 (2)(+stby)*	1 (2)* =	1 (2)(+stby)* =

CAT.IDE.A/H. 125/130	1	2	1	2	1	2
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\*Equipment, systems, and installations must be designed so that:

[CS-25.1333] sufficient information is available to assure control of the aeroplane in airspeed, altitude, direction and attitude by one of the pilots;

[CS-29.1333; CS-27/29 Ap. B IFR] one display of the information essential to the safety of the flight which is provided by the instruments will remain available to a pilot, without additional flight crew action after any single failure or combination of failures that is not assessed to be extremely improbable (see AMC 25.1333 (b)).

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation					PAGE: 34-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
ATA  34-10    Altimeters <i>(JAR-OPS 1.650/1.652)</i>   					

**Helicopters:**



ATA Chapter: 34 Navigation				PAGE: 34-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	(5) Remarks or Exceptions
ATA				
34-10 Altimeters (JAR-OPS 3.650/652)				
(1) Day VFR operations	C	-	1	Any in excess of one may be inoperative provided that:  (a) Flight is conducted over routes navigated by reference to visual landmarks, and (b) The operative altimeter is on the handling pilot's side.
(2) IFR or Night operations	C	-	1	Any in excess of one may be inoperative provided that: (a) Flight is conducted over routes navigated by reference to visual landmarks, (b) The radio altimeter (where required) is operative, and (c) The operative altimeter is on the handling pilot's side.  <u>Note:</u> For helicopters with EFIS type displays, the altimeter display (tape) must be operative.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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			
<b>34-10-2</b>	<b>Primary Altitude Indication</b>				<u>Note:</u> A secondary/standby altitude indication is not considered as a primary altitude indication.
34-10-12A	(Aeroplanes)  (Other than commercial air transport operations)	C	-	-	May be inoperative provided that:  (a) Flight is conducted under VFR, and  (b) An altitude indication is available at each required pilot's station.  <u>Note:</u> For single pilot operations, a secondary/standby or off-side indication may satisfy condition (b), if visibility requirements are met.
34-10-12B	(Aeroplanes)	B	-	-	May be inoperative provided that:  (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.  <u>Note:</u> For single pilot operations, a secondary/standby or off-side indication may satisfy condition (b) or (c), if visibility requirements are met.
34-10-2C	(Aeroplanes)	B	-	1	May be inoperative provided that:  (a) Flight is conducted under VMC in sight of the surface, and

34-10-2D (Helicopters)	C	-	1	<p>(b) A primary altitude indication is available on pilot flying's side.</p> <p>May be inoperative provided that:</p> <p>(a) A primary altitude indication is available at the handling pilot's side, and</p> <p>(b) Operations are conducted under day VFR over routes navigated by reference to visual landmarks.</p>
34-10-2E (Helicopters)	C	-	1	<p>May be inoperative provided that:</p> <p>(a) A primary altitude indication is available at handling pilot's station,</p> <p>(b) Alternate independent altitude or height indication is operative, and</p> <p><u>Note:</u> A secondary/standby altitude indication or radio altimeter indication may satisfy condition (b) if visibility requirements are met.</p>

**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

#### **Explanatory notes:**

The proposed guidance is intended to provide a generic guidance on the MMEL development for the subject system to ensure that the sufficient indications, essential to the safety of flight, remain available to the crew.

This proposal is not based on the existing TGL 26 guidance and is proposed to be based on the following rationale:

#### **34-10-2B&C**

For aeroplanes, under VFR, the loss of the altitude indication is considered as hazardous if no visual contact to the ground is available. Consequently, dispatch is allowed with a minimum of two altitude indications under VFR or with one altitude indication under VMC condition in sight of the surface to ensure that an acceptable level of safety is maintained.

#### **34-10-2D&E**

The altitude information is less critical on helicopters and thus the proposed guidance allows dispatch under IFR, provided that a minimum of two independent altitude indications are operative.

**Additional considerations:**

Primary Altitude indication should normally be a sensitive pressure altitude indication.

**Summary of applicable requirements on Altitude Indication (for information only):**

Candidate MMEL relief	Operating Environment					
	Day VFR		Night VFR		IFR	
	Single Pilot	Two Pilot	Single Pilot	Two Pilot	Single Pilot	Two Pilot
CS-23 CS-23.1311  <b>NCC.IDE.A/H. 125/130 (TBC)</b>	1 +1(stby;ind.)  1	1 +1(stby;ind.)  2	1 +1(stby;ind.)  1	1 +1(stby;ind.)  2	1 +1(stby;ind.)  1	1 +1(stby;ind.)  2
CS-23.1303 CS-23.1311 <b>CAT.IDE.A/H. 125/130</b>	1 +1(stby;ind.) 1	1 +1(stby;ind.) 2	1 +1(stby;ind.) 1+1	1 +1(stby;ind.) 2+1	1 +1(stby;ind.) 1+1	1 +1(stby;ind.) 2+1
CS-25.1303 CS-25.1333 <b>NCC.IDE.A/H. 125/130 (TBC)</b>	1 ? 1	2 ? 2	1 ? 1	2 ? 2	1 ? 1	2 ? 2
CS-25.1303 CS-25.1333 <b>CAT.IDE.A/H. 125/130</b>	1 (2)* 1	2 (2)(+stby)* 2	1 (2)* 1+1	2 (2)(+stby)* 2+1	1 (2)* 1+1	2 (2)(+stby)* 2+1
CS-27.1303 CS-27 A.b <b>NCC.IDE.A/H. 125/130 (TBC)</b>	1 - 1	1 - 2	1 - 1	1 - 2	1 (2) 1	1 (2)(+stby) 2
CS-27.1303 CS-27 A.b <b>CAT.IDE.A/H. 125/130 CAT.IDE.H.145</b>	1 - 1 + 1 (radio)	1 - 2 + 1 (radio)	1 - 1+1 + 1 (radio)	1 - 2+1 + 1 (radio)	1 (2) 1+1 + 1 (radio)	1 (2)(+stby) 2+1 + 1 (radio)
CS-29.1303 CS-29.1333 CS-29 A.b <b>NCC.IDE.A/H. 125/130 (TBC)</b>	1 (2)* 1	1 (2)(+stby)* 2	1 (2)* 1	1 (2)(+stby)* 2	1 (2)* = 1	1 (2)(+stby)* = 2
CS-29.1303	1	1	1	1	1	1

CS-29.1333 CS-29 A.b	(2)*	(2)(+stby)*	(2)*	(2)(+stby)*	(2)*	(2)(+stby)*
<b>CAT.IDE.A/H.</b>	1	2	1+1	2+1	=	=
<b>125/130</b>					1+1	2+1
<b>CAT.IDE.H.145</b>	+ 1 (radio)	+ 1 (radio)	+ 1 (radio)	+ 1 (radio)	+ 1 (radio)	+ 1 (radio)

\* Equipment, systems, and installations must be designed so that:

[CS- 25.1333] sufficient information is available to assure control of the aeroplane in airspeed, altitude, direction and attitude by one of the pilots;

[CS 29.1333; CS- 27/29 Ap. B IFR] one display of the information essential to the safety of the flight which is provided by the instruments will remain available to a pilot without additional flight crew action after any single failure or combination of failures that is not assessed to be extremely improbable (see AMC 25.1333 (b)).

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation					PAGE: 34-2
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
34-10	Turn and Slip Indicator / Turn Co-ordinators (if installed) (JAR-OPS 1.650/1.652)				
	(1) Aeroplane not fitted with a Standby Attitude Indicator				
	(a) Single pilot operation	B	-	0	May be inoperative for day VMC only, provided that the slip indicator is operative.
	(b) Two pilot operation	B	-	1	Commander's indicator may be inoperative for day VMC only provided that both attitude indicators are operative.
		B	-	1	Co-pilot's indicator may be inoperative provided that both attitude indicators are operative.
	(2) Aeroplane fitted with a Standby Attitude Indicator				
	(a) Single pilot operation	C	-	0	May be inoperative provided that the slip indicator and standby attitude indicator are operative.
	(b) Two pilot operation	C	-	1	Any in excess of one may be inoperative.

	B	-	0	May be inoperative provided one slip indicator and three independent attitude indicators are operative.
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**Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA				
34-10 Slip Indicator (JAR-OPS 3.650/652)				
(1) Single pilot operations	B	-	0	May be inoperative when flight is conducted under VFR over routes navigated by reference to visual landmarks.
(2) Two pilot operations	C	-	1	Any in excess of one may be inoperative provided that the operative slip indicator is on the handling pilot's side.
	B	-	0	May be inoperative when flight is conducted under VFR over routes navigated by reference to visual landmarks.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 34 Navigation					PAGE: 34-x
(1) System & Sequence Numbers		(2) Rectification Interval			
Item		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
34-10-3	Turn and Slip Indicator/Turn Co-ordinators (if installed)				
34-10-3-1	Inclinometer				
34-10-3-1A	(Aeroplanes)	B	-	0	May be inoperative for single pilot operations provided that operations are conducted under day VMC.
34-10-3-1B	(Aeroplanes & Helicopters)	C	-	0	May be inoperative for single pilot operations provided that standby attitude indication is operative.
34-10-3-1C	(Aeroplanes & Helicopters)	B	-	0	May be inoperative provided that three independent attitude indications are operative
34-10-3-1D	(Aeroplanes)	C	-	1	May be inoperative provided that:  (a) The operative inclinometer is on the pilot-in-command station, and  (b) Primary attitude indications are operative at required pilot’s station.
34-10-3-1E	(Aeroplanes)	B	-	1	May be inoperative provided that:  (a) Operations are conducted under day VMC, and  (b) Primary attitude indications are operative at required pilot’s station.
34-10-3-2	Slip/Skid Indication				



34-10-3-2A (Aeroplanes & Helicopters)	C	-	1	Any in excess of one may be inoperative provided that the operative slip/skid indication is on the pilot's-in-command station.
34-10-3-2A (Helicopters)	B	-	0	May be inoperative provided that:  (a) Operations are conducted under VFR over routes navigated by reference to visual landmarks, and  (b) Operations are not conducted over water.

**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

**Explanatory notes:**

The level of relief of the proposed guidance is consistent with the existing TGL 26 guidance.

It is proposed to extend the applicability of current TGL 26 guidance on aeroplanes to helicopters for the case of inclinometer inoperative when a third source of attitude indication is available. This is in accordance with the applicable requirements.

**Additional considerations:**

Inclinometer entry may apply to equivalent indication displayed as part of an integrated system.

**Summary of requirements on Turn-and-bank/Slip-skid indication:**

Candidate MMEL relief	Operating Environment					
	Day VFR		Night VFR		IFR	
	Single Pilot	Two Pilot	Single Pilot	Two Pilot	Single Pilot	Two Pilot
CS-23.1303 CS-23.1311  <b>NCC.IDE.A/H. 125/130</b>	- -  (1)*	- -  (2)* (1)**	- -  1	- -  1(2)**	- -  1	- -  1(2)**
CS-23.1303 CS-23.1311  <b>CAT.IDE.A/H. 125/130</b>	- -  1	- -  2(1)**	- -  1	- -  2	- -  1	- -  2
CS-25.1303 CS-25.1333 <b>NCC.IDE.A/H. 125/130(TBC)</b>	1 -  (1)*	2 -  (2)* (1)**	1 -  1	2 -  2	1 -  1	2 -  2
CS-25.1303 CS-25.1333 AMC 25-11 <b>CAT.IDE.A/H. 125/130</b>	1 - -  1	2 - -  2 (1)**	1 - -  1	2 - -  2	1 - -  1	2 - -  2
CS-27.1303 CS-27 A.b <b>NCC.IDE.A/H. 125/130(TBC)</b>	1 -  1 slip	1 -  2 slip	1 -  1 slip	1 -  2 slip	1 (2)  1 slip	1 (2)(+stby)  2 slip
CS-27.1303 CS-27 A.b <b>CAT.IDE.A/H. 125/130</b>	1 -  1 slip	1 -  2 slip	1 -  1 slip	1 -  2 slip	1 (2)  1 slip	1 (2)(+stby)  2 slip
CS-29.1303 CS-29.1333 CS-29 A.b <b>NCC.IDE.A/H. 125/130(TBC)</b>	1*** -  (1)*slip	1*** -  (2)*slip	1*** -  1 slip	1*** -  2 slip	1*** -  1 slip	1*** -  2 slip
CS-29.1303	1***	1***	1***	1***	1***	1***

CS-29.1333	-	-	-	-	-	-
CS-29 A.b						
<b>CAT.IDE.A/H.</b>	1 slip	(2)*slip	1 slip	2 slip	1 slip	2 slip
<b>125/130</b>						

\* When aeroplanes and helicopters operating under VFR cannot be maintained in a desired attitude without reference to one or more flight instruments.

\*\* The means of measuring and indicating turn and slip, aircraft attitude and stabilised aircraft heading may be met by combinations of instruments or by integrated flight director systems, provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

\*\*\* CS-29.1303(g) may require either a gyroscopic rate-of-turn indicator combined with a slip-skid indicator (turn-and-bank indicator) or a slip-skid indicator and a standby attitude indicator satisfying the requirements. (However, the original type certification standard should be referred to determine the exact requirement.)

\* Equipment, systems, and installations must be designed so that:

[CS- 25.1333] sufficient information is available to assure control of the aeroplane in airspeed, altitude, direction and attitude by one of the pilots;

[CS 29.1333; CS- 27/29 Ap. B IFR] one display of the information essential to the safety of the flight which is provided by the instruments will remain available to a pilot;

without additional flight crew action after any single failure or combination of failures that is not assessed to be extremely improbable (see AMC 25.1333 (b)).

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-2
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
34-10 Vertical Speed Indicators (VSI) (JAR-OPS 1.650/1.652)				
(1) Single pilot operation	C	-	1	Any in excess of one may be inoperative provided that the operative VSI is on the commander's side.
(2) Two pilot operation	C	-	1	Any in excess of one may be inoperative for day VMC only, provided that the operative VSI is on the commander's or co-pilot's side.

**Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-3
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
34-10 Vertical Speed Indicator (JAR-OPS 3.650/652)				

(1) Single Pilot Operations	C	-	1	Any in excess of one may be inoperative provided that the operative VSI is on the handling pilot's side.
	B	-	0	May be inoperative provided the flight is conducted by day under VFR over routes navigated by reference to visual landmarks.
(2) Two Pilot Operations	C	-	1	Any in excess of one may be inoperative provided that the operative VSI is on the handling pilot's side.
	B	-	0	May be inoperative provided that the flight is conducted by day under VFR over routes navigated by reference to visual landmarks.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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	
<b>34-10-4      Vertical Speed                     Indication                     (VSI)</b>				
34-10-4A	C	-	1	Any in excess of one may be inoperative provided that the operative VSI is on the pilot's -in-command side.
34-10-4C	B	-	0	May be inoperative for operations under day VFR provided that procedures are not dependent upon its use.

**Aircraft applicability:** As required by certification and operational rules.

**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

**Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26.

An additional condition to account for procedures that may use the Vertical Speed Indication is proposed to be included.

**Additional considerations:**

N/A

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-x
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>34-10-5 OAT Indicator</b> (If installed)  34-10-5A	C	-	0	(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
				May be inoperative provided another air temperature indication is operative that is convertible to OAT.

**Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA  34-10 OAT Indicator (JAR-OPS 3.650/652)	C	-	0	(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
				May be inoperative provided another air temperature indication is operative that is convertible to OAT.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 34 Navigation				PAGE: 34-x
(1) System & Sequence Numbers Item	(2) Rectification Interval			
<b>34-10-5      OAT Indicator</b>  34-10-5A	C	-	0	(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
				(O) May be inoperative provided that another air temperature indication is operative that is convertible to OAT.  <b>Procedures:</b> (O) To provide guidance to the crew to convert the alternate temperature indication in OAT, as required.

**Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26.

**Additional considerations:**

Further relief might be granted for non-commercial operations, short -range flights or when the OAT indicator is not required by the certification basis (e.g. CS-27).



**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation					PAGE: 34-2
(1) System & Sequence Numbers		(2) Rectification Interval			
ITEM		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
34-15	Altitude Alerting System (JAR-OPS 1.660)	B	-	0	(O) May be inoperative provided an autopilot with an altitude hold is operative.  <u>Note:</u> One altitude alerting system is required to be operative for RVSM operations.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

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				
34-15-1 <b>Altitude Alerting System</b>						
34-15-1A		B	-	0	(O) May be inoperative provided that: (a) An autopilot with an altitude hold is operative,	

				<p>(b) Alternate procedures are established and used, and</p> <p>(c) Tthe altitude alerting system is not part of the equipment required for the intended operation.</p> <p><b>Procedures</b></p> <p>(O) To provide alternate operational procedures to the flight crew, if applicable.</p> <p>(O) To specify any applicable restriction for operations requiring a specific approval.</p>
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**References:** CAT.IDE.A.140

**Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26. An additional condition is proposed to be included to ensure that no applicable procedure is based only on the altitude alerting system.

**Additional considerations:**

RVSM restrictions may apply. One altitude alerting system is required to be operative for RVSM operations.

Rectification interval C may be considered for other than turbo-jet aeroplanes. These aircraft may not have an autopilot installed in which case the autopilot would not be a condition of relief.

**Existing TGL 26 item:****Helicopters:**

ATA Chapter: 34 Navigation					PAGE: 34-3
(1) System & Sequence Numbers		(2) Rectification Interval			
ITEM		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
34-15	Radio Altimeter with an Audio Voice Warning (or other means acceptable to the authority)  (where required)  (JAR-OPS 3.660)	A	-	0	(O) May be inoperative provided that:  (a) No more than 6 hours shall be flown over water since the radio altimeter was found to be inoperative.  (b) A maximum of 24 hours have elapsed since the radio altimeter was found to be inoperative,  (c) The aircraft shall not fly over water at an altitude of less than 500 feet except for take-off and landing, and  (d) The helicopter shall not descend below 500 feet on approach to landing over water unless the landing site is clearly visible to the pilot.

## Helicopters

ATA Chapter: 34 Navigation		PAGE: 34-x	
(1) System & Sequence Numbers Item		(2) Rectification Interval	
<div>34-15-2      <b>Radio Altimeter with an Audio Voice Warning</b> (or equivalent)</div> <div>34-15-2A</div>		(3) Number installed	
		(4) Number required for dispatch	
		(5) Remarks or Exceptions	
		<p>(O) May be inoperative provided that:</p> <p>(a) No more than 6 hours shall be flown over water since the radio altimeter was found to be inoperative,</p> <p>(b) A maximum of 24 hours have elapsed since the radio altimeter was found to be inoperative,</p> <p>(c) The helicopter shall not fly over water at an altitude of less than 500 feet except for take-off and landing, and</p> <p>(d) The helicopter shall not descend below 500 feet on approach to landing over water unless the landing site is clearly visible to the pilot.</p> <p><b>Procedures</b></p> <p>(O) To provide operational procedures to the flight crew to ensure that applicable dispatch conditions are satisfied.</p>	

**References:** CAT.IDE.H.145

**Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26.

**Additional considerations:**

In addition to the equipment required by CAT.IDE.H.145, helicopter involved in NVIS operations shall be equipped with a radio altimeter and a low height warning system giving visual and audio warnings selectable by the pilot and discernable during NVIS operation.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-4
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
ATA				
34-20 Stabilised Direction Indicators (JAR-OPS 1.650/1.652)				
(1) Single Pilot operations				
(a) Horizontal Situation Indicator (HSI)	B	-	0	One or more may be inoperative provided:
				(a) The commander's RMI is operative,
				(b) Procedures are not dependent on the use of the HSI, and
				(c) The directional gyro is operative.
(b) Directional Gyros	C	-	1	Any in excess of one may be inoperative, provided the HSI or RMI is operative on the commander's side.
(c) Radio Magnetic Indicators (RMI)	B	-	0	May be inoperative provided:
				(a) The commander's HSI is operative, and
				(b) Procedures are not dependent upon the use of the RMI.
(2) Two Pilot operations				
(a) Horizontal Situation Indicator (HSI)				

(i) Commander's side	B	-	1	<p>Commander's indicator may be inoperative provided:</p> <p>(a) Procedures are not dependent upon the use of the remaining HSI,</p> <p>(b) Both directional gyros are operative, and</p> <p>(c) An independent stabilised direction indication is operative on each pilot's panel.</p>
(2) Two Pilot operations				
(a) Horizontal Situation Indicator(HIS)				
(ii) Co-pilot's side	C	-	1	<p>Co-Pilot's indicator may be inoperative provided:</p> <p>(a) Procedures are not dependent upon the use of the remaining HSI,</p> <p>(b) Both directional gyros are operative, and</p> <p>(c) An independent stabilised direction indication is operative on each pilot's panel.</p>
(b) Directional Gyros	B	-	1	<p>One may be inoperative for day VMC only provided:</p> <p>(a) A stabilised direction indication is operative on each pilot's panel, and</p> <p>(b) The Magnetic/standby compass is operative.</p>
(c) Automatic Slaving	C	-	1	<p>May be inoperative for one directional gyro provided:</p> <p>(a) A stabilised direction indication is operative on each pilot's panel, and</p> <p>(b) The Magnetic/standby compass is operative.</p>

(d) Radio Magnetic Indicators (RMI)	C	-	1	<p>One indicator may be inoperative provided:</p> <p>(a) Procedures are not dependent upon the use of the remaining RMI,</p> <p>(b) Both directional gyros are operative, and</p> <p>(c) An independent stabilised direction indication is operative on each pilot's panel.</p>
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**Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA  34-20 Stabilised Direction Indicators <i>(JAR-OPS 3.650/652)</i>  (1) Day VFR Operations  (a) Aircraft > 3 175 kg MCTOM or for Overwater Operations (out of sight of land or with visibility < 1 500 meters)			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
	D	-	1	Any in excess of one may be inoperative provided the operative stabilised direction indicator is on the handling pilot's side.
	A	-	0	<p>May be inoperative provided:</p> <p>(a) The standby magnetic compass is operative,</p> <p>(b) Flight is conducted over land under day VFR over routes navigated by reference to visual landmarks, and</p>



<p>(2) IFR or Night Operations</p> <p>(a) Two Pilot Operations</p>	C	-	1	<p>(c) The helicopter may depart on a flight or series of flights for the purpose of returning to a base where repairs or replacements can be made.</p> <p>Any in excess of one may be inoperative provided:</p> <p>(a) The operative stabilised direction indicator is on the handling pilot's side, and</p> <p>(b) The standby magnetic compass is operative.</p>
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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			
<b>34-20-1</b>	<b>Stabilised Direction Indication</b>				
34-20-1A	(Aeroplanes other than commercial air transport operations & Helicopters)	C	-	1	May be inoperative provided that a stabilised direction indication is operative on the pilot's-in-command side.
34-20-1B	(Aeroplanes)	C	-	1	May be inoperative for single pilot operations provided that: <ul style="list-style-type: none"> <li>(a) Operations are conducted under day VFR, and</li> <li>(b) A stabilised direction indication is operative on the pilot's-in-command side,</li> <li>(c) Magnetic/standby compass is operative.</li> </ul>
34-20-1C	(Aeroplanes)	C	-	2	May be inoperative provided that: <ul style="list-style-type: none"> <li>(a) Operations are conducted under day VFR, and</li> <li>(b) Independent stabilised direction indication is operative at each required pilot's station.</li> </ul> <p><u>Note:</u> A standby heading indication cannot be considered to meet the above dispatch conditions.</p>
34-20-1D	(Aeroplanes)	B	-	1	(O) May be inoperative provided that: <ul style="list-style-type: none"> <li>(a) Operations are conducted under day VFR, and</li> </ul>

34-20-1E (Helicopters with MCTOM < 3 175 kg)	A	-	0	<p>(b) The stabilised direction indication is displayed at each required pilot's station, and</p> <p>(c) Magnetic/standby compass is operative.</p> <p><b>Procedures:</b></p> <p>(O) To provide switching procedure to the flight crew to ensure adequate configuration of the displays in accordance with the above condition (b)</p> <p>May be inoperative for a maximum of 5 flights provided that:</p> <p>(a) The operations are conducted under day VFR, and</p> <p>(b) The operations are not conducted over water out of sight of land or with a visibility less than 1 500 m, and</p> <p>(c) A non-stabilised direction indication (e.g. magnetic/standby compass) is operative.</p>
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**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

**Explanatory notes:**

The guidance previously detailing the relief at instruments level (HSI, RMI) has been reformulated to focus on the heading indication requirement so as to become applicable to various design solutions (combined instruments, EFIS, etc.)

For single pilot operations of aeroplanes, it is proposed to restrict the dispatch with one stabilised direction indication available to day VMC conditions and availability of a magnetic/standby compass in order to mitigate for the next in-flight failure of the remaining stabilised indication.

**34-20-1E**

For helicopters in day VFR operations, it is proposed to allow dispatch with no stabilised direction indication available provided that a non-stabilised indication remains available, no overwater operations are conducted and the visibility is greater than 1 500m.

This is consistent with the intent of the operational requirements for installation of a stabilised direction indication on helicopters < 3 175 kg MCTOM.

**Additional considerations:**

Relief can be considered for night VFR and IFR operations based on a case-by-case evaluation and in accordance with CS-MMEL requirements.

Justifications may take advantage of available equipment providing stabilised direction indication or equivalent (e.g. GPS track).

Whenever independent stabilised direction indication is required for dispatch, compliance is ensured by the availability of independent sources (e.g. stabilised gyros) and so that no single failure can lead to the loss of both heading indications.

**Summary of requirements on Heading Indication (For information only):**

Candidate MMEL relief	Operating Environment					
	Day VFR		Night VFR		IFR	
	Single Pilot	Two Pilot	Single Pilot	Two Pilot	Single Pilot	Two Pilot
CS-23 CS 23.1327 CS 23.1311 NCC.IDE.A/ H.125/130	1* (1**) (S) 1*	1* (1**) (S) 1*	1* (1**) (S) 1* 1**	1* (1**) (S) 1* 2**	1* (1**) (S) 1* 1**	1* (1**) (S) 1* 2**
CS 23.1303 CS 23.1327 CS 23.1311 CAT.IDE.A/ H.125/130	1* (1**) (S) 1* 1***	1* (1**) (S) 1* 2***	1* (1**) (S) 1* 1***	1* (1**) (S) 1* 2***	1* (1**) (S) 1* 1***	1* (1**) (S) 1* 2***
CS 25.1303 (a)(3)&(b)(6) CS- 25.1333 NCC.IDE.A/ H.125/130	1* 1**(*) ? 1*	1* 2**(*) ? 1*	1* 1**(*) ? 1* 1**	1* 2**(*) ? 1* 2**	1* 1**(*) ? 1* 1**	1* 2**(*) ? 1* 2**
CS 25.1303 (a)(3)&(b)(6) CS- 25.1333 CAT.IDE.A/ H.125/130	1* 1**(*) (2)**** 1* 1***	1* 2**(*) (2)(S)** ** 1* 2***	1* 1**(*) (2)* 1* 1***	1* 2**(*) (2) (S)**** 1* 2***	1* 1**(*) (2)**** 1* 1***	1* 2**(*) (2) (S)**** 1* 2***
CS- 27.1303 CS-27 A.b NCC.IDE.A/ H.125/130	1* - 1* -	1* - 1* -	1* - 1* 1**	1* - 1* 2**	1* 1*** 1* 1***	1* 1*** 1* 2***
CS- 27.1303 CS-27 A.b	1* - 1*	1* - 1*	1* - 1*	1* - 1*	1* 1*** 1*	1* 1*** 1*

<b>CAT.IDE.A/ H.125/130</b>	<b>1*****</b>	<b>1*****</b>	<b>1**</b>	<b>2**</b>	<b>1***</b>	<b>2***</b>
CS- 29.1303	1* 1** (2)*****	1* 1** (2)(S)** **	1* 1** (2)*****	1* 1** (2)(S)*****	1* - (2)***	1* - (2)(S)*****
CS- 29.1333 CS 29 A.b	1*	1*	1*	1*	1*** 1*	1*** 1*
<b>NCC.IDE.A/ H.125/130</b>		1*	1**	2**	1***	2***
CS- 29.1303	1* 1** (2)*****	1* 1** (2)(S)** **	1* 1** (2)*****	1* 1** (2)(S)*****	1* - (2)***	1* - (2)(S)*****
CS- 29.1333 CS 29 A.b	1*	1*	1*	1*	1*** 1*	1*** 1*
<b>CAT.IDE.A/ H.125/130</b>	1**	1* 1**	1**	2**	1***	2***

\* A non-stabilised magnetic direction indicator.

\*\* A gyroscopically stabilised direction indicator.

\*\*\* A magnetic gyroscopically stabilised direction indicator (with magnetic sensing element/flux gate).

\*\*\*\* Equipment, systems, and installations must be designed so that:

[CS-25.1333] sufficient information is available to assure control of the aeroplane in airspeed, altitude, direction and attitude by one of the pilots;

[CS-29.1333; CS-27/29 Ap. B IFR] one display of the information essential to the safety of the flight which is provided by the instruments will remain available to a pilot without additional flight crew action after any single failure or combination of failures that is not assessed to be extremely improbable (see AMC 25.1333 (b)).

\*\*\*\*\* A stabilised direction indicator (gyroscopically stabilised) only for Helicopters operating over water out of sight of land, or when the visibility is less than 1 500 m.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation		PAGE: 34-7		
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
ATA  34-22    Magnetic compass (JAR-OPS 1.650/1.652)  (1) Single pilot operations  (2) Two pilot operations		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
		May be inoperative provided that the stabilised direction indicator is operative, and another source of magnetic heading information is available.  May be inoperative provided that at least two independent stabilised direction indicator systems are operative, and another source of magnetic heading information is available.		

**Helicopters:**

ATA Chapter: 34 Navigation		PAGE: 34-6		
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
ATA  34-23    Standby magnetic compass (JAR-OPS 3.650/652)		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
		May be inoperative provided that:		

				<p>(a) Flight is conducted by day under VFR over routes navigated by reference to visual landmarks, and</p> <p>(b) When operationally required, the helicopter's main Magnetic Direction Indicator System is operative.</p>
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**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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			
34-22-1	Magnetic/Standby compass				
34-22-1A		B	-	0	May be inoperative for single pilot operations provided that:  (a) Operations are conducted under day VFR, and  (b) A stabilised direction indication is operative on the pilot’s-in-command side, and  (c) Another source of magnetic heading is available and visible by the pilot-in-command.
34-22-1B		B	-	0	May be inoperative provided that:  (a) Operations are conducted under day VFR, and  (b) Two independent stabilised direction indications are operative.
34-22-1C		B	-	0	May be inoperative provided that: a) Two independent stabilised direction indications are operative, and b) Another source of magnetic heading is available and visible by the pilot-in-command.
34-22-1D	(Helicopters)	B	-	0	May be inoperative provided that:

				<p>(a) Operations are conducted under VFR, and</p> <p>(b) Two independent stabilised direction indications are operative.</p>
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**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130; CS 25.1303 (a) (3); CS 23.1303 (c).

**Explanatory notes:**

The proposed guidance is consistent with the stabilised direction indication (refer to 34-20-1).

**Additional considerations:**

Relief can be considered for night VFR and IFR operations based on a case-by-case evaluation and in accordance with CS-MMEL requirements.

Justifications may take advantage of available equipment providing stabilised direction indication or equivalent (e.g. GPS track).

Whenever independent stabilised direction indications are required for dispatch, compliance is ensured by the availability of independent sources (e.g. stabilised gyros) so that no single failure can lead to the loss of both heading indications.

The two independent stabilised direction indicator systems may be achieved by any combination of two gyroscopic or INS (IRU) stabilised compass systems.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-6
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
				(5) Remarks or Exceptions
ATA				
34-20 Attitude Indicators (JAR-OPS 1.650/1.652)				
(1) Aeroplane with a MCTOM not over 5 700 kg and with a MAPSC of 9 or less seats (aeroplanes not fitted with a standby attitude indicator)				
(a) Single pilot operations	B	-	1	Any in excess of one may be inoperative provided the operative attitude indicator is on the commander's side.
(b) Two pilot operations	B	-	1	The co-pilot's indicator may be inoperative for day VMC only.
(2) Aeroplane with a MCTOM over 5 700 kg or with a MAPSC of more than 9 seats (aeroplanes fitted with a standby attitude indicator)				
(a) Single pilot operations	A	-	0	One or more may be inoperative for a maximum of 2 calendar days in day VMC only, provided the standby attitude indicator is operative.

(b) Two pilot operations	B	-	1	One may be inoperative for day VMC only provided the standby attitude indicator is operative.
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**Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-6
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM	(3) Number installed			
ATA	(4) Number required for dispatch			
34-20 Standby Attitude Indicator (if installed) (JAR-OPS 1.650/1.652)	(5) Remarks or Exceptions			
(1) Single pilot operations	B	-	0	One or more may be inoperative for day VMC only provided the commander's attitude indicator is operative.
(2) Two pilot operations	B	-	0	May be inoperative for day VMC only provided both attitude indicators are operative.

**Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-4
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM	(3) Number installed			
ATA	(4) Number required for dispatch			
	(5) Remarks or Exceptions			

34-20	Attitude Indicators (JAR-OPS 3.650/652)				
	(1) Day VFR operations				
	(a) Aircraft > 3 175 kg MCTOM or for operations over water (out of sight of land or with visibility < 1 500 meters)				
	(i) Single Pilot Operations	D	-	1	Any in excess of one may be inoperative provided the operative attitude indicator is on the commander's side.
	(ii) Two Pilot Operations	D	-	2	Any in excess of two may be inoperative provided operative attitude indicators are at each pilot's station.
		B	-	1	One may be inoperative provided flight is conducted under day VFR with a visual horizon.
	(iii) Standby Attitude Indicator	C	-	0	May be inoperative provided all other required attitude indicators are operative.
	(2) IFR or Night Operations				
	(a) Single Pilot Operations	B	-	1	Any in excess of one may be inoperative.
	(b) Two Pilot Operations	B	-	1	Any in excess of one may be inoperative provided the operative attitude indicator is on the handling pilot's side.
	(c) Standby Attitude Indicator	B	-	1	Any in excess of one may be inoperative.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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			
<b>34-20-2</b>	<b>Primary Attitude Indication</b>				<u>Note:</u> A secondary/standby attitude indication is not considered as a primary indication.
34-20-2A	(Aeroplanes for other than CAT operations)	B	-	0	May be inoperative provided that:  (a) Operations are conducted under VFR, and  (b) Standby attitude indication is operative.
34-20-2B	(Helicopters for other than CAT operations)	D	-	0	May be inoperative provided that operations are conducted under day VFR.
34-20-2C	(Aeroplanes & Helicopters)	C	-	1	Any in excess of one may be inoperative for single pilot operations provided that:  (a) Operations are conducted under VFR, and  (b) The primary attitude indication is operative on the pilot's-in-command side, and  (c) Standby attitude indication is operative.
34-20-2D	(Aeroplanes & Helicopters)	C	-	2	Any in excess of two may be inoperative provided that:  (a) Operations are conducted under VFR, and

34-20-2E	(Aeroplanes & Helicopters)	B	-	1	<p>(b) An independent primary attitude indication is operative at each required pilot's station</p> <p><u>Note:</u> A secondary/standby indication cannot satisfy the above condition (b).</p> <p>(O) Any in excess of one may be inoperative provided that:</p> <p>(a) Operations are conducted under VFR, and</p> <p>(b) The primary attitude indication is displayed on both pilot's stations, and</p> <p>(c) Standby attitude indication is operative.</p> <p><b>Procedures:</b></p> <p>(O) To provide switching procedure to the crew to ensure adequate configuration of the displays in accordance with the above condition (b)</p>
34-20-2F	(Aeroplanes) (Single pilot)	A	-	0	<p>May be inoperative for single pilot operations only for a maximum of 2 calendar days provided that:</p> <p>(a) Operations are conducted under day VMC in sight of the surface with adequate external attitude reference, and</p> <p>(b) A standby attitude indication is installed and operative.</p>
34-20-2G	(Helicopters with MCTOM < 3 175 kg)	C	-	0	<p>May be inoperative provided that:</p> <p>(a) Operations are conducted under day VFR, and</p> <p>(b) Operations are not conducted over water out of sight of the land, and</p> <p>(c) Visibility is more than 1 500m.</p>
<b>34-20-3</b>	<b>Standby Attitude Indication</b>				
34-20-3A	(Other than commercial air transport operations)	D	-	0	<p>May be inoperative provided that flight is conducted under VFR with a visual horizon.</p>

34-20-3B	(Aeroplanes & Helicopters)	B	-	0	May be inoperative provided that flight is conducted under day VFR with a visual horizon.
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**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

#### **Explanatory notes:**

The proposed guidance is intended to provide a generic guidance on the MMEL development for the subject system to ensure that the sufficient indications, essential to the safety of flight, remain available to the flight crew.

This proposal is not based on the existing TGL 26 guidance and is proposed to be based on the following rationale:

#### **34-20-2A & 2B Primary Attitude Indication**

It is considered that the loss of attitude indication is acceptable under VFR if not conducting commercial air transport operations and a standby attitude indication is available.

#### **34-20-2C, D & E Primary Attitude Indication**

For commercial air transport (CAT), dispatch with failure of attitude indication in addition of one for each required flight crew member is acceptable, provided that the flight is conducted under VFR condition.

On a dual pilot aircraft, the failure of one attitude indication will leave the crew with a remaining indication to join VMC in sight of the surface with adequate external attitude reference.

On a single pilot aircraft, an additional attitude indication has to be available to ensure attitude reference when the next in-flight failure of the primary indication occurs, in order to join VMC in sight of the surface with adequate external attitude reference.

#### **34-20-2F Primary Attitude Indication**

As per current TGL 26 guidance, the dispatch is authorised with one secondary (standby) attitude indication only for a single pilot day VMC in sight of the surface with adequate external attitude reference.

#### **34-20-2G Primary Attitude Indication**

No attitude indication is required for small helicopters for day VFR operations over land with visibility > 1 500m.

#### **34-20-3A&B Standby Attitude Indication**

Consistently with the above approach and as provided by other authorities (FAA, TCCA), limitations on the dispatch with standby attitude are introduced.

In particular the standby attitude is required when performing commercial air transport operations, except for day VFR operations with a visual horizon.



**Additional considerations:**

## 34-20-2F

Prior to allowing dispatch without any attitude indication, a review of the certification requirements as well as the handling qualities and training of the flight crew is required.

## 34-20-3A&amp;B Standby attitude indication

It is assumed in this guidance that the standby attitude indicator is needed to meet the applicable requirements (e.g. CS-23.1311 Electronic Flight Display or CS-25.1309) and thus no relief is allowed by this guidance for night VFR or IFR operations. Case-by-case evaluations are however possible, based on the applicable CS-MMEL requirements.

**Summary of requirements on Attitude Indication (for information only):**

Candidate MMEL relief	Operating Environment					
	Day VFR		Night VFR		IFR	
	Single Pilot	Two Pilot	Single Pilot	Two Pilot	Single Pilot	Two Pilot
CS-23 CS 23.1311  NCC.IDE.A/ H.125/130	- +1(stby;in d.)  (1)*	- +1(stby;in d.)  (2)*	- +1(stby;in d.)  1	- +1(stby;in d.)  2	- +1(stby;in d.)  1	- +1(stby;ind.)  2
CS-23 CS 23.1311 23.1303  CAT.IDE.A/ H.125/130	- +1(stby;in d.)  1****	- +1(stby;in d.)  2****	- +1(stby;in d.)  1 (1 stby) ***	- +1(stby;in d.)  2 (1 stby) ***	- +1(stby;in d.) 1 (third for commuter; ind.>10pa x) 1 (1 stby) ***	- +1(stby;ind.) 1 (third for commuter;indep;>10 pax) 2 (1 stby) ***
CS- 25.1333 NCC.IDE.A/ H.125/130	- (1)*	- (2)*	- 1	- 2	2(3) 1	2(3) 2
CS- 25.1333 CAT.IDE.A/ H.125/130	- 1****	- 2****	- 1 1 stby	- 2 1 stby	2(3) 1 1 stby	2(3) 2 1 stby
CS-27 A.b NCC.IDE.A/ H.125/130	- (2)*	- (2)*	- 1	- 2	+1stby 1+1	+1stby ***** 2+1
CS-27 A.b CAT.IDE.A/ H.125/130	- (2)* (1)**	- (2)* (1)**	- 1 1 stby	- 2 1 stby	+1stby 1 1 stby	+1stby ***** 2 1 stby
CS-29					+1stby	+1stby

NCC.IDE.A/ H.125/130	(2)*	(2)*	1	2	1+1	2+1
CS-29	-	-	-	-	+1stby	+1stby
CAT.IDE.A/ H.125/130	(2)* 1**	(2)* 1**	1 1 stby	2 1 stby	1 1 stby	2 1 stby

For compliance with CAT.IDE.A/H.125/130, the means of measuring and indicating turn-and-slip, aircraft attitude and stabilised aircraft heading may be met by combinations of instruments or by integrated flight director systems, provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

\* When aeroplanes and helicopters operating under VFR cannot be maintained in a desired attitude without reference to one or more flight instruments.

\*\* Helicopters with a maximum certificated take-off mass exceeding 3 175 kg or operating over water out of sight of land, or when the visibility is less than 1 500 m and aeroplanes.

\*\*\* Aeroplanes involved in commercial air transport, with a maximum certificated take-off mass of 5 700 kg or less and already registered in the EU on 1 April 1995, should be equipped with a standby attitude indicator which may be located in the left-hand instrument panel.

\*\*\*\* For local flights (A to A, 50 Nm radius, not more than 60 minutes duration), the instruments Turn-and-Slip Indicator OR Turn Co-ordinator & Attitude Indicator & Gyroscopic Direction indicator may be replaced by EITHER a turn-and-slip indicator OR a turn co-ordinator OR both an attitude indicator and a slip indicator.

\*\*\*\*\* One pilot's primary indicator may be designated for this purpose.

# **ATA 34 NAVIGATION NAVIGATION EQUIPMENT**

## **Summary of the guidance items:**

Item	ATA	EASA IR Ref.	CS-25 Reference (TBC)	Existing Foreign Guidance Ref.
Navigation Systems (VOR, DME, ADF, GNSS, INS)	34-50-1	CAT.IDE.A.345	25.1307 (e)	
Marker Beacon	34-31-1	AMC2-CAT.IDE.A.345		
ILS (or MLS)	34-32-1	AMC2-CAT.IDE.A.345		TCCA 34.6
Airborne Collision Avoidance System (ACAS)	34-40-1	CAT.IDE.A.155		FAA PL-32
Area Navigation System	34-40-1	AMC2-CAT.IDE.A.345		TCCA 34.6
Weather Radar System(s)	34-41-1	CAT.IDE.A.160		TCCA 34.12
Wind shear Detection/Warning System	34-41-2			FAA PL-67 TCCA 34.13
Terrain Awareness Warning System (TAWS)	34-43-1	CAT.IDE.A.150		FAA PL-54
Mode A/C SSR Transponder	34-54-1	CAT.IDE.A.350		FAA PL-76 TCCA 34.9

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-12
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
				(5) Remarks or Exceptions
ATA				
34-51 VOR Navigation (JAR-OPS 1.865)				
(1) Aeroplane not equipped with FMS	D	-	1	Any in excess of one may be inoperative provided: (a) Operational procedures, are not based only on VOR signals, and  (b) Both ADF and DME are operative or alternative approved equipment giving equivalent or enhanced navigation capability is operative.
	A	-	0	One or more may be inoperative for a maximum of 5 flights provided: (a) Two additional items of equipment giving equivalent navigation capability are operative, and (b) The flight can proceed safely, including the approach using the other navigation systems.
(2) Aeroplane equipped with one operative FMS	C	-	1	Any in excess of one may be inoperative provided: (a) Both ADF (where required) and DME are operative, and (b) The aeroplane is equipped with alternative equipment authorised, for the route being flown, by the authority.

(3) Aeroplane equipped with two operative FMS	C	-	0	<p><u>Note:</u> Operators should consider if the in-flight failure of any FMS sensor allows safe navigation with the remaining operative sensors and equipment.</p> <p>One or more may be inoperative where navigational capability can be assured and the approach procedures are not required to be based upon VOR signals (see note above).</p>
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**Aeroplanes:**

ATA Chapter: 34 Navigation					PAGE: 34-13	
(1) System & Sequence Numbers ITEM		(2) Rectification Interval				
ATA  34-52 Distance Measuring Equipment (DME) (JAR-OPS 1.865)		C	-	(3) Number installed		
				(4) Number required for dispatch		
				(5) Remarks or Exceptions		
		B	-	0	(O) One or more may be inoperative provided alternate approved navigational equipment is operative and used.  <u>Note:</u> Operators should consider if the in-flight failure of any FMS sensor allows safe navigation with the remaining operative sensors and equipment.	
		D	-	-	Any in excess of those required may be inoperative.	

**Aeroplanes:**

ATA Chapter: 34 Navigation					PAGE: 34-13
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
34-53	ADF Receiver (If installed) (JAR-OPS 1.865)	C	-	0	One or more may be inoperative provided navigation procedures for the planned routes to be flown are not dependant upon the use of affected ADF.
		B	-	0	(O) One or more may be inoperative provided alternate approved navigational equipment is operative and used.
		D	-	-	Any in excess of those required may be inoperative.

**Aeroplanes:**

ATA Chapter: 34 Navigation			PAGE: 34-10	
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
ATA   <				

(1) Unrestricted operations in MNPS airspace	C	-	2	Any in excess of two may be inoperative.
(2) Operations along notified special routes within MNPS airspace	C	-	1	Any in excess of one may be inoperative provided the operative equipment is visible and usable to either flight crew member seated at their crew station.
(3) Non MNPS Operations	D	-	0	One or more may be inoperative provided the planned routes to be flown do not require their use.

**Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
34-58 Global Positioning System (GPS)	C	-	0	(O) One or more may be inoperative provided alternate procedures are established and used.
	D	-	0	(O) One or more may be inoperative provided procedures do not require its use.  <u>Note:</u> If GPS is used as a Long Range Navigation System, refer to item 34-50 in Section 3 of this TGL.

**Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-7
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			



				(4) Number required for dispatch	(5) Remarks or Exceptions
ATA	34-50 Navigation Equipment (JAR-OPS 3.865)	A	-	-	<p>(O) No more than one of the navigation equipment systems carried in accordance with the requirements of JAR-OPS 3.865, may be inoperative provided:</p> <p>(a) The helicopter has not made more than one flight since the item was last serviceable, and</p> <p>(b) The commander has satisfied himself that, taking into account the latest information available as to the route/area and heliport to be used (including any planned diversion) and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of the appropriate air traffic control unit.</p>
		D	-	-	Any in excess of those required may be inoperative.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters:**

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	
<b>34-51-1      Navigation Systems</b> <b>(based on VOR, DME,</b> <b>ADF, GNSS, INS)</b>				
34-51-1A      (Except for commercial air transport operations)	D	-	0	May be inoperative provided that:
				(a) Operations are conducted under VFR, and
				(b) Applicable airspace requirements are complied with.
34-51-1B	C	-	-	(O) One or more may be inoperative provided that:
				(a) The navigation systems required for each segment of the intended route are operative, and
				(b) Alternate procedures are established and used, where applicable.
				<b>Note:</b> The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.
				<b>Procedures:</b>
				(O) To give alternate procedures in case existing operational procedures are affected.

**Aircraft applicability:** Aeroplanes and Helicopters**References:** CAT.IDE.A.125; CAT.IDE.A.130; CAT.IDE.H.125; CAT.IDE.H.130.

**Explanatory notes:**

For the purpose of this guidance, a single entry for navigation systems is proposed. This approach is consistent with the corresponding operational requirements, which are setting up a requirement for two independent navigation equipment for Commercial Air Transport operations.

Indeed, the requirements applicable to specific radio nav aids (VOR, DME), although remaining applicable for specific routes, may not be applicable for routes where navigation can be performed by other approved means such as GNSS, IRS, etc.

**Additional considerations:**

This entry covers failure of navigation systems, e.g. VOR, DME, ADF, INS, and GNSS, that provide approved navigation information to the flight crew as either a stand-alone system or in combination with a navigation management system (e.g. FMS, R-NAV).

However, this entry does not cover the failure of navigation management system (refer to item 34-xx).

Others aircraft systems may be affected by the failed navigation system (e.g. TAWS). This has to be reflected on a case-by-case basis when this guidance is applied.

Heading, airspeed, and clock data are not considered as a navigation system by this guidance.

Additional restrictions may apply if required during certification of the navigation systems. As an example, if raw navigation data have been used to achieve an acceptable level of safety, in addition to any multi-sensor computed data, to avoid 'hazardously misleading' navigation information, further restriction on the availability of such raw data information may be required.

Operational rules for the selection of alternate aerodromes are available in operational requirements.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation					PAGE: 34-7
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
34-31	Marker Beacon (JAR-OPS 1.865)	B	-	0	One or more may be inoperative for IFR operations, provided that approach procedures do not require marker fixes.
		D	-	0	One or more may be inoperative for VFR operations.

**Proposed EASA Guidance Book item:****Aeroplanes**

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			
<b>34-31-1    Marker Beacon                   (MC)</b>					
34-31-1A		C	-	0	May be inoperative under IFR operations provided that approach procedures do not require marker fixes.
34-31-1B		D	-	0	May be inoperative under VFR operations.

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**References:** AMC2-CAT.IDE.A.345.

**Explanatory notes:**

For consistency with the proposed guidance item 34-50-1, the rectification interval of item 34-31-1A is extended from B to C, compared with the existing TGL 26 guidance.

**Additional considerations:**

One marker beacon receiving system is required to be installed where a marker beacon is required for approach navigation purpose.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-7
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
34-32 ILS (or MLS) (JAR-OPS 1.865)	B	-	-	One or more may be inoperative for IFR operations, provided that approach minima do not require their use.
	D	-	0	One or more may be inoperative for VFR operations.

**Proposed EASA Guidance Book item:****Aeroplanes**

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		
34-32-1 ILS (or MLS) (MC)	B	-	0	May be inoperative under IFR operations provided that approaches and missed approaches where navigation is based on ILS are not included in the flight plan.
34-32-2A				

34-32-2B	D	-	0	May be inoperative under VFR operations.
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**References:** AMC2-CAT.IDE.A.345.

**Explanatory notes:**

The dispatch conditions under IFR operations have been clarified to cover the case of missed approaches.

**Additional considerations:**

N/A

**Existing TGL 26 item:**

**Aeroplanes**

ATA Chapter: 34 Navigation	PAGE: 34-7			
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA  34-40 Airborne Collision Avoidance System (ACAS) (if installed) (JAR-OPS 1.668)				(3) Number installed
				(4) Number required for dispatch
				(5) Remarks or Exceptions
(1) ACAS System	A	-	0	(O)(M) May be inoperative for a maximum of 10 calendar days provided the system is deactivated and secured.
(2) Combined TA and RA Dual Displays	C	-	1	(O) May be inoperative on the non-flying pilot side provided:

(3) Resolution Advisory (RA) Display System(s)	C	-	1	<p>(a) TA and RA elements and audio functions are operative on flying pilot's side, and</p> <p>(b) TA and RA display indications are visible to the non-flying pilot.</p> <p>(O) One may be inoperative on the non-flying pilot side.</p>
	C	-	0	<p>(O) One or more may be inoperative provided:</p> <p>(a) All Traffic Alert (TA) display elements and voice command audio functions are operative, and</p> <p>(b) TA only mode is selected by the crew.</p>
(4) Traffic Alert (TA) Display System(s)	C	-	0	<p>(O) One or more may be inoperative provided all installed RA display and audio functions are operative.</p>

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 34 Navigation		PAGE: 34-x	
(1) System & Sequence Numbers Item		(2) Rectification Interval	
<b>34-40-1      Airborne Collision Avoidance System (ACAS)  (MC)</b>		(3) Number installed	
		(4) Number required for dispatch	
		(5) Remarks or Exceptions	



34-40-1A	A	-	0	<p>(O)(M) May be inoperative for a maximum of 10 calendar days provided that:</p> <p>(a) ACAS is deactivated, and</p> <p>(b) Operating procedures do not require its use.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate crew procedures, as applicable.</p> <p>(M) To provide guidance for deactivation of the ACAS.</p>
34-40-1B	C	-	-	<p>(M) Any in excess of those required may be inoperative provided that it is deactivated.</p> <p><b>Procedures:</b></p> <p>(M) To provide guidance for deactivation of the ACAS.</p>
34-40-1-1 Combined TA and RA Dual Display				
34-40-1-1A	C	-	1	<p>(O) May be inoperative on the non-flying pilot's side provided that:</p> <p>(a) TA and RA elements and audio functions are operative on the flying pilot's side, and</p> <p>(b) TA and RA display indications are visible to the pilot monitoring.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate crew procedures, as applicable.</p>
34-40-1-2 Resolution Advisory (RA) Display Systems				
34-40-1-2A	C	-	1	<p>(O) One may be inoperative on the pilot monitoring side.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate flight crew procedures, as applicable.</p>
34-40-1-2B	C	-	0	<p>(O) One or more may be inoperative provided that:</p>

34-40-1-3 Traffic Alert (TA) Display System(s)				<p>(a) All Traffic Alert (TA) display elements and voice command audio functions are operative, and</p> <p>(b) TA only mode is selected by the crew, and</p> <p>(c) Operating procedures do not require its use.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate crew procedures, as applicable.</p>
34-40-1-3A	C	-	0	<p>(O) One or more may be inoperative provided that:</p> <p>(a) RA display and audio functions are operative, and</p> <p>(b) Operating procedures do not require its use.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate flight crew procedures, as applicable.</p>

**Aircraft applicability:**

**References:** CAT.IDE.A.155

**Explanatory notes:**

34-40-1B is added to cover the failure of the ACAS when the system is not required by operating rules.

In such a case C (10 calendar days), rectification interval is considered appropriate because of crew dependency (situational awareness) considerations.

Additional dispatch conditions are proposed to be introduced to account for any operating procedures that may be based on the use of affected ACAS functions.

**Additional considerations:**

The deactivation of the ACAS can alternatively be performed through an operational procedure, if acceptable.

More alleviative rectification interval may be granted for flight in airspace where there is no requirement for ACAS availability.

**Existing TGL 26 item:****Aeroplanes**

ATA Chapter: 34 Navigation					PAGE: 34-8
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
ATA		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
34-40	Area Navigation System (if installed) <i>(JAR-OPS 1.865)</i>	C	-	1	(O) Any in excess of the number stated in Aeronautical Information Publications (or their equivalent) as being required to satisfy operational requirements for airspace procedures, may be inoperative provided that the Limitations stated in the Flight Manual are observed.
		A	-	0	(O) One or more may be inoperative for one flight provided:  (a) Routing is planned via ground-based navigational aids taking account of promulgated range, and  (b) Permission is obtained from the Air Navigation Service Provider(s) when required for the intended route.

**Proposed EASA Guidance Book item:****Aeroplanes**

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			

<b>34-40-2 Area Navigation System</b>				
34-40-2A	C	-	-	<p>(O) may be inoperative provided that:</p> <p>(a) Applicable airspace requirements for the intended route are complied with,</p> <p>(b) Certified RNP capabilities relevant for the intended route are maintained, and</p> <p>(c) Operational procedures do not depend upon its use.</p> <p><b>Note:</b> The intended route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules.</p> <p><b>Procedures:</b></p> <p>(O) To provide alternate navigation procedures, if applicable.</p> <p>(O) May be inoperative for one flight provided that:</p> <p>(a) Routing is planned via ground-based navigational aids taking account of promulgated range, and</p> <p>(b) Permission is obtained from the Air Navigation Service Provider(s) when required for the intended route.</p>
	A	-	0	

**Aircraft applicability:****References:****Explanatory notes:**

Current TGL 26 relief is proposed to be simplified.

**Additional considerations:**

The RNAV systems are stated in the Aeronautical Information Publications (or their equivalent) as being required to satisfy operational requirements for airspace procedures.

Additionally, the certified capability may be dependent on a number of systems which may vary from one aircraft type to another. The reference to appropriate operational documentation (Aircraft Flight Manual, FCOM, etc.) may be necessary in order to allow the dispatch, depending on the intended route.

**Existing TGL 26 item:****Aeroplanes**

ATA Chapter: 34 Navigation				PAGE: 34-9
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	
				(5) Remarks or Exceptions
34-41 Weather Radar System(s) (Antenna(s), XCVR(s), Controller(s), Display(s)) <i>(JAR-OPS 1.670(a))</i>	D	-	1	Any in excess of one may be inoperative provided procedures do not require use of inoperative systems.
	C	-	0	May be inoperative provided the weather reports or forecasts available to the commander indicate that cumulo-nimbus clouds or other potentially hazardous weather conditions, which could be detected by the system when in working order, are unlikely to be encountered on the intended route.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

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		
<b>34-41-1 Weather Detection System</b> (Antenna(s), XCVR(s), Controller(s), Display(s))				
34-41-1A	D	-	-	Any in excess of those required may be inoperative provided that procedures do not require their use.
34-41-1B	C	-	0	May be inoperative provided that operations are conducted in daylight VMC.
34-41-1C	C	-	0	May be inoperative provided that no thunderstorm or other potentially hazardous weather conditions, regarded as detectable with the airborne weather detection system, are forecasted along the route.
<b>34-41-1-1 Wind shear Detection/Warning System Predictive Function</b>				
34-41-1-1A	C	-	0	May be inoperative.

**Aircraft applicability:****References:** CAT.IDE.A.160/CAT.IDE.H.160.

**Explanatory notes:**

The proposed guidance for 34-41-1A and -1C is consistent with the existing TGL 26 guidance. 34-41-1C has been additionally validated regarding CAT.IDE.A.160 together with other regulations, such as ICAO Annex 6 Part I paragraph 6.11, FAR 121.357(c)(1), CAR 705.70.

34-41-1B is added to provide alleviation when operating in daylight VMC, whatever the weather conditions.

A new entry is proposed based on the existing TGL 26 guidance for the predictive function of the Wind shear Detection/Warning System Predictive Function.

**Additional considerations:**

ACAS item may drive the relief as the same display may be used. Refer to item 34-40-1.

ETOPS requirements are to be considered.

**34-41-1-1A**

Considerations have to be taken that the failure of the predictive wind shear function may be a consequence of the loss of inputs from other items (e.g. radio altimeter). In that case, the associated guidance also applies.

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 34 Navigation				PAGE: 34-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA  34-41 Wind shear Detection/Warning System	(3) Number installed			
	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
(1) Predictive	D	-	0	May be inoperative.
(2) Reactive	D	-	0	(O) May be inoperative provided that alternate procedures are established and used.



**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes & helicopters**

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	
<b>34-41-2</b>	<b>Wind shear Detection/Warning System</b>			
34-41-2-1	Reactive Function			
34-41-2-1A		C	-	0
				(O) May be inoperative provided that alternate procedures are established and used.  <b>Procedures:</b>  (O) To provide guidance procedures for wind shear avoidance and wind shear recovery procedure.

**Explanatory notes:**

This proposal is consistent with the existing TGL 26 guidance.

It is proposed to incorporate the guidance for the predictive function of windshear detection/warning system under the guidance entry of weather radar system (refer to guidance entry 34-41-1-1).

**Additional considerations:**

The operational procedure shall be developed to:

- Assess and minimize the probability of encountering wind shear during take-off/departure and approach/landing.
- Minimise the effects of unexpected wind shear encounter during take-off/departure and approach/landing.

The above guidance has to be consolidated with the associated restrictions applicable to ground proximity warning system (GPWS) (ATA 34), weather radar system (ATA 34), flight guidance system (ATA 22) or flight director (Guidance Item 22-10-2 ) should the wind shear predictive or reactive function be performed by those systems.

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 34 Navigation				PAGE: 34-9
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
ATA				(5) Remarks or Exceptions
34-43 <b>Ground Proximity Warning Systems</b> (if installed) (JAR-OPS 1.665)	A	-	0	May be inoperative for a maximum of 6 flights or 25 flight hours or 2 calendar days, whichever occurs first.
(1) Modes 1 to 4	A	-	0	May be inoperative for a maximum of 6 flights or 25 flight hours or 2 calendar days, whichever occurs first.
(2) Test Mode	A	-	0	May be inoperative for a maximum of 6 flights or 25 flight hours or 2 calendar days, whichever occurs first.
(3) Glideslope Deviation (Mode 5)	B	-	0	May be inoperative.
	C	-	0	May be inoperative for day VMC only.
(4) Terrain Awareness & Warning System (TAWS) (where required)	A	-	0	May be inoperative for a maximum of 10 calendar days provided that the GPWS functions are operative.
(5) Advisory Callouts (if installed)				May be inoperative for a maximum of 6 flights or 25 flight hours or 2 calendar days, whichever occurs first.
				(O) May be inoperative provided that alternate procedures are established and used.

<p>(6) Wind shear Mode (if installed)</p> <p>(a) Predictive</p> <p>(b) Reactive</p>				<p><b>Note:</b> Check Flight Manual limitations for approach minima.</p> <p>May be inoperative.</p> <p>(O) May be inoperative provided that alternate procedures are established and used.</p> <p><b>Note:</b> For some designs, these functions are dealt with by other systems.</p>
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**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

ATA Chapter: 34 Navigation					PAGE: 34-x
(1) System & Sequence Numbers		(2) Rectification Interval			
Item		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
<b>34-43-1</b>	<b>Terrain Awareness Warning System (TAWS)</b>				
34-43-1A		A	-	0	May be inoperative for a maximum of 6 flights or 2 calendar days, whichever occurs first.
34-43-1B		C	-	0	Any in excess of those required may be inoperative.
34-43-1-1	Modes 1 to 4				
34-43-1-1A		B	-	0	One or more mode may be inoperative provided that FLTA and PDA functions are operative.
34-43-1-2	Test Mode				
34-43-1-2A		A	-	0	May be inoperative for a maximum of 6 flights or 2 calendar days, whichever occurs first.
34-43-1-3	Glideslope Deviation (Mode 5)				
34-43-1-3A		B	-	0	May be inoperative.
34-43-1-3B		C	-	0	May be inoperative for day VMC only.
34-43-1-4	Terrain System-Forward Looking Terrain Avoidance (FLTA) and Premature Descent Alert (PDA) functions				
34-43-1-4A		B	-	0	May be inoperative provided that:  (a) Mode 1-4 are operative, and  (b) Approaches procedures do not require its use.

34-43-1-5      Advisory Callouts 34-43-1-5A	C	-	0	(O) May be inoperative provided that: (a) Low visibility approaches requiring the use of affected callouts are not performed, and (b) Alternate procedures are established and used.  <u>Note:</u> Check Flight Manual limitations for approach minima.
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**References:** CAT.IDE.A.150

**Explanatory notes:**

34-43-1B is added to cover the failure of the TAWS when the system is not required by operating rules.

In such a case C (10 calendar days), rectification interval is considered appropriate because of crew dependency (situational awareness) considerations.

The consistency of the MMEL requirements for TAWS (GPWS) is proposed to be improved, compared to existing TGL 26, based on the following arguments:

- TAWS is not a primary system in that failure of the TAWS would contribute to a situation where continued safe flight and landing is jeopardized. The principle of two subsequent failures leading to a catastrophic event does not apply: the failure of TAWS, in combination with any other system failure, should not lead to a catastrophic event, except maybe while conducting demanding RNP-AR approaches in mountainous terrain.
- TAWS was introduced at a time when GPS was not commonly installed on aircraft, and navigation was primarily based on ground aides, such as VOR, DME and ADF, as well as on IRS/INS. The problem with these systems was that crew error could potentially lead to loss of situational awareness. This was the case in the Cali accident, which has been the trigger for many airlines to voluntarily install TAWS, even before it became a regulatory requirement. Today the situation is much different as most aircraft which require TAWS routinely navigate by means of GPS, which has no crew inputs and thereby greatly reduced the change of providing an incorrect position.
- In terms of effectiveness, the FLTA and PDA functions have proven to be equal to, if not exceeding the performance of the basic GPWS modes.
- TAWS is acknowledged as a means of mitigation of risk when RNP-AR approach and missed approach operations are being conducted. The airworthiness requirements for RNP-AR assume that TAWS is installed and operational.
- Very stringent MMEL requirements do not necessarily improve safety. With intermittent failures in particular, maintenance personnel will be tempted to 'swap a box' and do a quick return-to-service test, rather than troubleshoot the problem to find and correct the root cause. With a little more time available, it will be easier to schedule a maintenance slot which enables more thorough troubleshooting.

The relief regarding the wind shear detection/warning functions is removed from the GPWS item as this function can be addressed by different systems, depending on the aircraft design. It is covered by the dedicated guidance item 34-41-1.

**Additional considerations:**

The above guidance is applicable to either Class A or Class B TAWS.

The mode 1-5 referenced in the guidance correspond to:

Mode 1 — Excessive descent rate (sink rate);

Mode 2 — Excessive terrain closure rate (ground proximity);

Mode 3 — Altitude loss after take-off or go around;

Mode 4 — Unsafe terrain clearance during high speed flight or while not in the landing configuration;

Mode 5 — Below glideslope deviation alert.

FLTA & PDA functions are required for RNP-AR (Required Navigation Performance (RNP) instrument approach procedures with Special Aircraft and Aircrew Authorization Required (SAAAR)) operations.

**Existing TGL 26 item:****Aeroplanes:**

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
<b>34-54-1 SSR Transponder</b>				
(1) Mode A/C Functions	C	-	-	Any in excess of those required for the route to be flown may be inoperative.
	A	-	0	(O) May be inoperative for a maximum of 5 flights provided that:  (a) Permission is obtained from the Air Navigation Service Provider(s) along the route or any planned diversion, and (b) Flight is conducted under VFR over routes navigated by reference to visual landmarks.  <u>Note:</u> Mode C function is required to be operative for RVSM operations.
(2) Mode S Function	D	-	0	Any in excess of those required for the intended route may be inoperative.  <u>Note:</u> A SSR transponder with an operative Mode S function is defined as a transponder which can provide, at least, Elementary Surveillance capability.

(3) Enhanced Surveillance Functions (if installed)	C	-	0	<p>One or more may be inoperative provided that permission is obtained from the Air Navigation Service Provider(s) when required for the intended route.</p> <p><u>Note 1:</u> An SSR transponder with an operative Mode S function is defined as a transponder which can provide, at least, Elementary Surveillance capability.</p> <p><u>Note 2:</u> Altitude reporting, provided by an SSR transponder Mode S function, is required for ACAS II operation. Refer to item 34-40 for flight with ACAS II inoperative.</p> <p><u>Note 3:</u> Altitude reporting, provided by an SSR transponder Mode S function, is required for flight into RVSM airspace.</p>
	D	-	0	<p>One or more Downlinked Aircraft Parameters (DAPs), which provide Enhanced Surveillance, may be inoperative when not required for the intended route.</p>
	C	-	0	<p>One or more Downlinked Aircraft Parameters (DAPs), which provide Enhanced Surveillance, may be inoperative when required for the intended route.</p>

**Helicopters:**

N/A



**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes & Helicopters (as applicable)**

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		
<b>34-54-1 SSR Transponder Mode A/C</b>  34-54-1A          34-54-1B	A	-	0	(O) May be inoperative for a maximum of 5 flights provided that:  (a) Flight is conducted under VFR over routes navigated by reference to visual landmarks, and  (b) Permission is obtained from the Air Navigation Service Provider(s) along the route or any planned diversion.  <u>Note:</u> Mode C function is required to be operative for RVSM operations
				Any in excess of those required may be inoperative.
<b>34-54-2 SSR Transponder Mode S</b>  34-54-2A	D	-	0	Any in excess of those required for the intended route, may be inoperative.
				<u>Note:</u> A SSR transponder with an operative Mode S function is defined as a transponder which can provide, at least, Elementary Surveillance capability.

ATA Chapter: 34 Navigation				PAGE: 34-x
(1) System & Sequence Numbers	(2) Rectification Interval			
Item		(3) Number installed		
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
34-54-2B	C	-	0	<p>One or more may be inoperative provided that permission is obtained from the Air Navigation Service Provider(s) when required for the intended route.</p> <p><u>Note 1:</u> An SSR transponder with an operative Mode S function is defined as a transponder which can provide, at least, Elementary Surveillance capability.</p> <p><u>Note 2:</u> Elementary Surveillance (ELS) capability (Mode S including Aircraft Identification and Pressure Altitude Reporting) is required in European Mode S designated airspace.</p> <p><u>Note 3:</u> Altitude reporting, provided by an SSR transponder Mode S function, is required for ACAS II operation. Refer to item 34-40 for flight with ACAS II inoperative.</p> <p><u>Note 4:</u> Altitude reporting, provided by an SSR transponder Mode S function, is required for flight into RVSM airspace.</p>
34-54-2-1 <b>Enhanced Surveillance Functions</b> (if installed)				
34-54-2-1A	D	-	0	<p>One or more Downlinked Aircraft Parameters (DAPs), which provide Enhanced Surveillance, may be inoperative when not required for the intended route.</p>
34-54-2-1B	C	-	0	<p>One or more Downlinked Aircraft Parameters (DAPs), which provide Enhanced Surveillance, may be inoperative when required for the intended route.</p> <p><u>Note:</u> Enhanced surveillance capability is required in Mode S EHS notified airspace.</p>

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	
34-54-2-2 <b>Extended Squitter (ADS-B OUT) Transmissions</b>				
34-54-2-2A	D	-	0	One or more extended squitter transmissions may be inoperative when not required for the intended route.
34-54-2-2B	C	-	0	One or more extended squitter transmissions may be inoperative when required for the intended route.

**References:** CAT.IDE.A/H.350; AMC1- CAT.IDE.A/H.350

**Explanatory notes:**

The item is proposed to be re-organised into two separated items for the purpose of the MMEL guidance as the transponder mode S is today the standard equipment fitted on aircraft.

**34-54-1 SSR Mode A/C Transponder**

No change compared to current TGL 26 guidance is introduced except that option 24-54-1B is added to cover failure of transponder installed in addition to the requirement.

**34-54-2 SSR Mode S Transponder**

This entry covers the complete failure of the SSR transponder or the failure of any additional SSR transponder installed on the aircraft.

The level of relief of the guidance is unchanged compared to TGL 26. Additional clarifications are added through Note 2 under 34-54-2B and Note 1 under 34-54-2-1.

**34-54-2-2 Extended squitter (ADS-B OUT) transmissions** new entry is introduced to help operators in developing their MEL in accordance with AMC 20-24.

**Explanatory notes:**

Enhanced surveillance is not applicable to helicopters. They are only required to install elementary surveillance. This does not preclude a helicopter from voluntary installation of enhanced surveillance.

**24-54-2 SSR Mode S Transponder**

If ELS capability of the Mode S transponder is maintained, the 34-54-2B entry is not applicable, but reference to 34-54-2-1 enhanced surveillance functions may be required.

If ELS capability is affected, prior ANSP permission is required.

As an example, this may be achieved through the utilisation of Item 10 of the FPL that can be completed using the designator letters for the surveillance/SSR equipment element as follows:

'S' — Transponder, Mode S, including both pressure altitude and aircraft identification transmission. [This equates to ELS compliant]

'P' — Transponder, Mode S, including pressure altitude transmission but no aircraft identification transmission.

'I' — Transponder, Mode S, including aircraft identification transmission but no pressure altitude transmission.

'X' — Transponder, Mode S, without both pressure altitude and aircraft identification transmission.

'C' — Transponder, Mode A (4 digits - 4096 codes) and Mode C.

'A' — Transponder, Mode A (4 digits - 4096 codes).

'N' — Nil (Hardly likely to be accepted into European airspace).

From a practical ATC perspective, most probably only 'S', 'P', and 'C' would be acceptable to Air Navigation Service Providers (ANSPs), whilst 'C' would reply to ground Mode S interrogations, this level of functionality in a Mode S environment might not be acceptable to all ANSPs in the long term.

**ATA 35 OXYGEN****Summary of the guidance items:**

<b>Item</b>	<b>ATA</b>	<b>EASA IR reference</b>	<b>CS Reference</b>	<b>Existing Foreign Guidance</b>
Oxygen Systems Non-Pressurised Aeroplane	<u>35-00-1</u>	CAT.IDE.A/H.2 40	23/25.1441 to 23/25.1453	
Flight Crew Oxygen System (Supplemental)	<u>35-10-1</u>	CAT.IDE.A.235	23/25.1441 to 23/25.1453	TCCA 35-10-1
Passenger Oxygen System (Supplemental)	<u>35-20-1</u>	CAT.IDE.A.235	23/25.1441 to 23/25.1453	TCCA 35-20-1
First-Aid Oxygen	<u>35-50-1</u>	CAT.IDE.A.230	23/25.1443 23/25.1447	TCCA 35-30-1

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 35 Oxygen				PAGE: 35-1
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM	(3) Number installed			
ATA	(4) Number required for dispatch			
	(5) Remarks or Exceptions			
35-00 Oxygen Systems — Non-Pressurised Aeroplane (JAR-OPS 1.775)				
(1) Flight Deck	C	-	-	One or more may be inoperative provided the aeroplane is not operated above 10,000 ft pressure altitude.
(2) Cabin Compartment	C	-	-	Any in excess of those required may be inoperative.
	C	-	-	One or more may be inoperative provided the aeroplane is not operated above 10,000 ft pressure altitude.

**Helicopters:**

ATA Chapter: 35 Oxygen				PAGE: 35-1
(1) System & Sequence Numbers	(2) Rectification Interval			
ITEM	(3) Number installed			
ATA	(4) Number required for dispatch			
	(5) Remarks or Exceptions			

35-00	Oxygen Systems-Non-Pressurised Aircraft (Where required) (JAR-OPS 3.775)				
(1) Flight Deck	C	-	-	One or more may be inoperative provided the aircraft is not operated above a pressure altitude of 10,000 ft.	
(2) Cabin Compartment	C	-	-	Any in excess of those required may be inoperative.	
	C	-	-	One or more may be inoperative provided the aircraft is not operated above a pressure altitude of 10,000 ft.	

**Proposed EASA Guidance Book item:****Non-pressurized Aeroplanes and Helicopters**

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		
<b>35-00-1</b>	<b>Supplemental Oxygen System (Non- Pressurized Aircraft)</b>			
35-00-1-1	Flight Crew Compartment			
35-00-1-1A		C	-	- One or more may be inoperative provided that the aircraft is not operated above 10 000 ft pressure altitude.
35-00-1-2	Cabin Compartment			
35-00-1-2A		C	-	- Any in excess of those required may be inoperative.
35-00-1-2B		C	-	- One or more may be inoperative provided that the aircraft is not operated above 10 000 ft pressure altitude.

**References:**

CS 23.1441 to CS 23.1453; CS 25.1441 to CS 25.1453; CAT.IDE.A/H.240

**Explanatory notes:**

The proposed guidance is based on the existing TGL 26 guidance.

**Additional considerations:**

35-00-1-1A

Additional restrictions on air conditioning system, and/or availability of portable oxygen units, may be needed to mitigate the risk against smoke in the flight crew compartment.



35-00-1-2A

Additional restrictions on air conditioning system, and/or availability of portable oxygen units, may be needed to mitigate the risk against smoke in the cabin.

**Existing TGL 26 item:**

ATA Chapter: 35 Oxygen				PAGE: 35-1
(1) System & Sequence Numbers		(2) Rectification Interval		
ITEM		(3) Number installed		
ATA		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
35-10	Flight Crew Oxygen System (Supplemental Oxygen) (JAR-OPS 1.770)			
	(1) Flight Deck Pressure Indication	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 flight.
	(2) Bottle Gauges	C	-	0 One or more may be inoperative provided the flight deck pressure indication is operative.
	(3) Supernumerary Oxygen Masks	C	-	0 One or more may be inoperative provided the associated seat is not occupied.
		C	-	0 One or more may be inoperative provided maximum altitude is limited to 10,000 ft pressure altitude.

**Proposed EASA Guidance Book item:****Aeroplanes**

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			
35-10-1	Flight Crew Fixed Oxygen System (Supplemental)				
35-10-1-1	Flight Crew Compartment Pressure Indications				
35-10-1-1A		C	-	(O)(M) One or more may be inoperative provided that a procedure is used to ensure that oxygen supply is above the minimum for the intended flight.  Procedures:  (O)/(M) 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		C	-	0 One or more may be inoperative provided that the associated flight crew compartment pressure indication is operative.	
35-10-1-3	Additional Oxygen Masks (e.g. Supernumerary)				
35-10-1-3A		C	-	0 One or more may be inoperative provided that the associated seat is not occupied.	
35-10-1-3B		C	-	0 One or more may be inoperative provided that the maximum altitude is limited to 10 000 ft pressure altitude.	

**References:**

CS 23.1441 to CS 23.1453; CS 25.1441 to CS 25.1453; CAT.OP.MPA.285, CAT.IDE.A.235, CAT.OP.MPA.285

**Explanatory notes:**

The proposed guidance is consistent with the existing TGL 26 guidance.

**Additional considerations:**

N/A

**Existing TGL 26 item:**

ATA Chapter: 35 Oxygen				PAGE: 35-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
		(3) Number installed		
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
ATA				
35-20 Passenger Oxygen System (Supplemental oxygen) (If installed) (JAR-OPS 1.770)	B	-	0	(O)(M) May be inoperative provided:  (a) Maximum altitude is limited to 10,000 ft pressure altitude. (b) All air-conditioning packs operate normally, (c) All other components of the pressurisation system operate normally, and (d) Passengers are appropriately briefed.
	B	-	0	(O)(M) May be inoperative provided: (a) Maximum altitude is limited to 25,000 ft pressure altitude, (b) All air-conditioning packs operate normally, (c) All other components of the pressurisation system operate normally, (d) Aeroplane is able to descend within 4 minutes to a cabin pressure altitude of 13,000ft at all points along the route to be flown, (e) Oxygen supply is available for all cabin crew members and at least 10% of the passengers or the entire flight time between 10,000ft and 13,000ft pressure altitude, and (f) Passengers are appropriately briefed.
(1) Fixed bottle or generator system	B	-	0	The automatic deployment system may be inoperative provided the manual deployment system is operative.
	B	-	-	(M)(O) One or more passenger service units may be inoperative provided:  (a) Affected seats are blocked and placarded to prevent occupancy, and

				(b) Units are operative for all operative passenger seats, toilet compartments and cabin crew locations.
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**Proposed EASA Guidance Book item:****Aeroplanes**

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		
<b>35-20-1</b>	<b>Passenger/Cabin Crew Oxygen System (Supplemental oxygen)</b> (if installed)			
35-20-1A		B	-	0
				(O)(M) May be inoperative provided that:  (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.  <b>Procedures:</b>  (O) or alternatively (M) To set the aircraft in a configuration providing an adequate supply of fresh air to the cabin.  (O) To provide a passenger briefing in accordance with the dispatch configuration.
35-20-1B		B	-	0
				(O) May be inoperative provided that:  (a) Maximum altitude is limited to

				<p>25 000 ft pressure altitude,</p> <p>(b) Air conditioning packs are operative,</p> <p>(c) All components of the pressurisation system are operative,</p> <p>(d) Aeroplane is able to descend within 4 minutes to a cabin pressure altitude of 13 000 ft at all points along the route to be flown,</p> <p>(e) Portable oxygen units are available for all required cabin crew members,</p> <p>(f) Sufficient oxygen quantity is available for at least 10 % of the passengers for the entire flight time when the cabin pressure altitude is between 10 000 ft and 13 000 ft following a decompression event at the most critical point of the intended route, and</p> <p>(g) Passengers are appropriately briefed.</p> <p><b>Procedures:</b></p> <p>(O) to provide passenger briefing in accordance with the dispatch configuration.</p>
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**References:**

CS 23.1441 to CS 23.1453; CS 25.1441 to CS 25.1453; CAT.IDE.A.235

**Explanatory notes:**

The proposed guidance is based on the existing TGL 26 guidance.

Under the proposed entry 35-20-1A, the condition on air-conditioning packs and pressurization system to be operative is clarified by a condition on adequate supply of fresh air so that it can be adapted to various aircraft design.

Under the proposed entry 35-20-1B, the quantity of supplemental oxygen to be provided through portable units is clarified in accordance with the applicable operational requirements (CAT.IDE.A.235 (e)).

**Additional considerations:**

35-20-1A

The fresh air is non-re-circulated air.

35-20-1B

The total amount of supplemental oxygen required in Portable Passenger Oxygen units (e) is in addition to the amount required for first-aid oxygen. The oxygen quantity requirements are based on CAT rules.



**Existing TGL 26 item:**

ATA Chapter: 35 Oxygen				PAGE: 35-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	(4) Number required for dispatch
				(5) Remarks or Exceptions
ATA 35-20 Passenger Oxygen System (Supplemental oxygen) (if installed) (JAR-OPS 1.770)				
(1) Fixed bottle or generator system	B	-	0	The automatic deployment system may be inoperative provided that the manual deployment system is operative.
	B	-	-	(M)(O) One or more passenger service units may be inoperative provided that:  (a) Affected seats are blocked and placarded to prevent occupancy, and (b) Units are operative for all operative passenger seats, toilet compartments and cabin crew locations.

**Proposed EASA Guidance Book item:****Aeroplanes**

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		
<b>35-20-1 Passenger Oxygen System (Supplemental oxygen) (if installed)</b>				
35-20-1-1 Automatic Presentation System				
35-20-1-1A	B	-	0	May be inoperative provided that: (a) The manual deployment from the flight crew compartment is operative, and (b) The maximum altitude is limited to 30 000 ft pressure altitude.
35-20-1-2 Passenger Service Units (Drop-Down Oxygen)				
35-20-1-2A	B	-	-	(M)(O) One or more passenger service units may be inoperative provided that: (a) Affected seats are blocked and placarded to prevent occupancy, and (b) Units are operative for all operative passenger seats, toilet compartments and cabin crew locations. <b>Procedures:</b> (M) or alternatively (O) To give guidance reference for a practical mean of prohibiting the use of the affected seat(s).

**References:**

CS 23.1441 to CS 23.1453; CS 25.1441 to CS 25.1453; CAT.IDE.A.235

**Explanatory notes:**

The proposed guidance is based on the existing TGL 26 guidance.

Under the entry 35-20-1-1A Automatic Presentation System, the title is proposed to be clarified to refer to the automatic function. The automatic function of the passenger oxygen system can only be tested by simulation. This is usually done by an MRB task.

The normal system is also checked by MRB task with similar intervals by actuating the flight crew compartment manual control.

The distinction between automatic and manual is made in the certification specification for design requirements as a decompression at flight altitudes > 30 000 ft would result in rapid loss of consciousness that justifies the automatic presentation.

Under the entry 35-20-1-2A, the title is proposed to be clarified to reflect that this item covers the failure of the passenger service units (drop-down oxygen). Occupancy of affected seat is prevented.

**Additional considerations:**

35-20-1-1A Automatic Presentation System:

The automatic function of the passenger oxygen system can only be tested by simulation. This is usually done by an MRB task.

The normal system is also checked by MRB task with similar intervals by actuating the flight crew compartment manual control.

The distinction between automatic and manual is made in the certification specification for design requirements as a decompression at flight altitudes > 30 000 ft would result in rapid loss of consciousness that justifies the automatic presentation.

Failure of the automatic function is generally not detected until the maintenance task is performed and thus MMEL guidance to cover the loss of this particular function is only justified to release the aircraft after maintenance.

**Existing TGL 26 item:**

ATA Chapter: 35 Oxygen				PAGE: 35-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA	D	(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
35-50 First-Aid Oxygen (JAR-OPS 1.760)	D	-	-	(M) Any bottle in excess of those required may be inoperative provided that the inoperative equipment is placarded inoperative, removed from the installed location (if portable) and placed out of sight so that it cannot be mistaken for a functional unit.

**Proposed EASA Guidance Book item:****Aircraft applicability: Aeroplanes**

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	
<b>35-50-1 First-Aid Oxygen</b>				
35-50-1A	D	-	-	<p>(M)(O) Any portable oxygen dispensing unit in excess of those required may be inoperative or missing provided that:</p> <p>(a) Required distribution of operative units is maintained throughout the aircraft,</p> <p>(b) The inoperative portable oxygen dispensing unit is placarded inoperative, removed from the installed location (if portable) and placed out of sight so that it cannot be mistaken for a functional unit, and</p> <p>(c) Procedures are established and used to alert crew members of inoperative or missing equipment.</p> <p><b>Procedures:</b></p> <p>(M) To provide instructions to placard the inoperative portable oxygen dispensing unit and its installed location, and to secure the portable oxygen dispensing unit in an out of sight location.</p> <p>(O) To provide procedures to alert crew members.</p>

**References:**

CS 23.1443; CS 23.1447; CS 25.1443; CS 25.1447; CAT.IDE.A.230; GM1- CAT.IDE.A.230

**Explanatory notes:**

The proposed guidance is based on the existing TGL 26 guidance.

An additional guidance entry 35-50-1B is proposed to allow partial failure of the first-aid oxygen bottles.

**Additional considerations:**

*First-Aid Oxygen Supply Time:*

The minimum oxygen supply time should be equal to the time needed for the aircraft to land on an aerodrome. The minimum oxygen supply time depends of the amount of oxygen needed to supply 2 % of the passengers with oxygen after a decompression.

*Number of portable oxygen cylinders:*

The number of mandatory portable oxygen cylinders, defined for each aircraft type, is calculated as follows:

- One portable oxygen cylinder is required for each required cabin crew, and
- Portable oxygen cylinders are required for 2 % of the passengers.

The minimum number of required portable oxygen cylinders is determined by the highest number due to the above requirements.

The actual number of portable oxygen cylinders is determined by the operator itself and depends on the flight duration, in particular the time needed to reach the nearest aerodrome for landing.

Relief can be considered for partially filled bottles provided that the oxygen quantity is in accordance with the applicable regulations. In this case, a procedure should be developed to ensure that the total quantity of oxygen in the operative bottles is adequate.

**Summary of the guidance items:**

<b>Item</b>	<b>ATA</b>	<b>EASA IR reference</b>	<b>CS Reference</b>	<b>Existing Foreign Guidance</b>
Electronic Flight Bag Systems	46-20-1	AMC1-ORO.MLR.100		FAA PL-121
Class 2 EFB	46-20-2			
Mounting Device	46-20-2-1			
Data Connectivity	46-20-2-2			
Power Connection for Class 1 and Class 2 EFB	46-20-3			

**Existing TGL 26 item:****Aeroplanes & Helicopters:**

ATA Chapter: 46 Information Systems				PAGE: 46-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
	(3) Number installed			
	(4) Number required for dispatch			
ATA				(5) Remarks or Exceptions
<p>46-20 Electronic Flight Bag (EFB) Systems (JAR-OPS 1.135(b)/1.1040(m)) (1) Class 1, 2 &amp; 3 EFB</p> <p>The purpose of this entry is not to require inclusion of Class 1 &amp; 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.</p> <p>(2) Class 2 EFB</p> <p>(a) Mounting Device</p>	C	-	0	<p>For further guidance relating to EFB, please refer to JAA Administrative &amp; Guidance Material Section Four: Part Three: Temporary Guidance Leaflet No 36.</p> <p>(M)(O) May be inoperative provided alternate procedures are established and used where operating procedures are dependant upon the use of the affected EFB.</p> <p><u>Note:</u> Any EFB function which operates normally may be used.</p>
	C	-	1	<p>(M) (O) Any in excess of one may be inoperative provided the affected EFB is secured by an alternative means.</p>
	C	-	0	<p>(M) (O) May be inoperative provided:</p> <p>(a) The associated EFB is used in accordance with Class 1 EFB stowage criteria, and</p> <p>(b) Alternate procedures are established and used where operating procedures are dependant upon the use of the affected EFB</p>



(b) Data Connectivity	C	-	1	(M) (O) Any in excess of one may be inoperative provided an alternative means of data connectivity is used.
	C	-	0	(M) (O) May be inoperative provided alternate procedures are established and used where operating procedures are dependant upon the use of the affected EFB.  Note: Any EFB function which operates normally may be used.
(3) Power Connection for Class 1 and Class 2 EFB	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.
	C	-	0	(M) (O) May be inoperative provided alternate procedures are established and used.

**Proposed EASA Guidance Book item:****Aeroplanes & helicopters**

ATA Chapter: 46 Information Systems				PAGE: 46-1
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
<b>46-20-1 Electronic Flight Bag (EFB) Systems</b>				
46-20-1A	C	-	0	(M)(O) May be inoperative provided that alternate procedures are established and used where operating procedures are dependent upon the use of the affected EFB.
46-20-2 Class 2 EFB	C	-	1	(M) (O) Any in excess of one may be inoperative provided that the affected EFB is secured by an alternative means.
46-20-2-1 Mounting Device				
46-20-2-1A	C	-	1	(M) (O) Any in excess of one may be inoperative provided that the affected EFB is secured by an alternative means.
46-20-2-1B	C	-	0	(M) (O) May be inoperative provided that:
				(a) The associated EFB is used in accordance with Class 1 EFB stowage 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	C	-	1	(M) (O) Any in excess of one may be inoperative provided that an alternative means of data connectivity is used.
46-20-2-2A				

46-20-3	Power Connection for Class 1 and Class 2 EFB	C	-	0	(M) (O) May be inoperative provided that alternate procedures are established and used where operating procedures are dependent upon the use of the affected EFB.  <b>Procedures:</b>  (M) To give guidance reference for deactivation of the affected item, as appropriate, and to establish alternate means, as applicable.  (O) To provide instructions to the flight crew for alternate procedures to be used.
46-20-3A		C	-	1	(M) (O) Any in excess of one may be inoperative provided that an alternative power source is available and can be used for the planned duration of use of the affected EFB.
46-20-3B		C	-	0	(M) (O) May be inoperative provided that alternate procedures are established and used.  <b>Procedures:</b>  (M) To give guidance reference for deactivation of the affected item, as appropriate, and to establish alternate means, as applicable.  (O) to provide instructions to the flight crew for alternate procedures to be used.

**References:** N/A

**Explanatory notes:**

The proposed guidance is consistent with the existing TLG 26 MEL guidance.

**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.

**Summary of the guidance items:**

<b>Item</b>	<b>ATA</b>	<b>EASA IR reference</b>	<b>CS-25 Reference</b>	<b>Existing Foreign Guidance</b>
<b>Emergency Exit</b>	<b>52-22-1</b>	CAT.IDE.A.265	25.807	FAA PL-1 FAA PL-99 TCCA 52.2
<b>Flight Crew Compartment Door</b>	<b>52-51-1</b>	CAT.IDE.A.215 ORO.SEC.100.A	25.772 25.795	FAA PL-112

**Existing TGL 26 item:****Aeroplanes:**

ATA Chapter: 52 Doors				PAGE: 52-1
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
ATA			(3) Number installed	
			(4) Number required for dispatch	(5) Remarks or Exceptions
52-22 Emergency Exits (including passenger/crew doors, but excluding flight deck emergency exits) <i>(JAR-OPS 1.805)</i>  (1) Passenger or Combi Configuration (Single Deck and Double Deck Aeroplane)	A	-	-	(O)(M) One, on each deck, may be inoperative for a maximum of 5 flights provided: (a) The passenger number reduction and distribution guidance, and cabin safety procedures, are established and used, (b) The affected emergency exit is closed and locked, (c) A conspicuous barrier, strap or rope and a placard stating 'DO NOT USE' are placed across the affected emergency exit prior to passenger boarding, (d) The affected emergency exit is not used for passenger boarding, nor for any purpose whilst passengers are on board,  <u>Note:</u> If the affected emergency exit is operative mechanically, it may still be used for evacuation in the case of emergency. (e) Visual indications (illuminated and non- illuminated) directing passengers to the affected emergency exit are obscured,  (f) All crew members are briefed on the location and condition of the affected emergency exit, passenger distribution and modified cabin safety procedures,

				<p>(g) The affected emergency exit and blocked seating layout are checked before each flight by the appropriate cabin crew member, and</p> <p>(cont.)</p>
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ATA Chapter: 52 Doors				PAGE: 52-2
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
52-22 Emergency Exits (including passenger/crew doors, but excluding flight deck emergency exits) (JAR-OPS 1.805) (cont.)				
(1) Passenger or Combi Configuration (Single Deck and Double Deck Aeroplane) (cont.)				(h) The escape path to the affected emergency exit is checked by the appropriate cabin crew member to be unobstructed before each take-off and landing.
				<u>Note:</u> Reference may be made to UK CAA FODCOM 8/99 for guidance relating to passenger number reduction.
(2) All Cargo Configuration		C	-	2
<u>Note:</u> The relief contained herein requires that flight deck emergency exit(s) and means of escape exist and remain operative.				Any in excess of two non-cockpit emergency exits intended to be used by the persons on board to evacuate the aeroplane may be inoperative.
		A	-	1
				(O) Any in excess of one non-cockpit emergency exit intended to be used by the persons on board to evacuate the aeroplane may be inoperative for a maximum of 5 flights.
				(O) Any in excess of one non-cockpit emergency exit may be inoperative. One or more functions of this remaining emergency exit may be inoperative for a maximum of 10 calendar days provided:
				(a) A specific evacuation procedure is established,

				<p>(b) Only flight crew members (including NAA or Operator Inspector(s)) essential for the flight are on board,</p> <p>(c) Its external opening mechanism is operative,</p> <p>(d) Its internal opening mechanism is operative,</p> <p>(cont.)</p>
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ATA Chapter: 52 Doors				PAGE: 52-3
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
52-22 Emergency Exits (including passenger/crew doors, but excluding flight deck emergency exits) (JAR-OPS 1.805) (cont.)				
(2) All Cargo Configuration (cont.)				
		A	-	0
		<p>(e) Its escape slide or its escape slide raft is operative unless an approved alternate means of escape is available, and an appropriate raft (if required) is available,</p> <p>(f) Its associated exit marking or locator sign and its associated floor proximity exit identifier and its associated exit interior emergency lighting and its exit exterior emergency lighting (for night operations) are operative, unless an operative torch is available for each flight crew member, and</p> <p>(g) Flight crew members are to review the evacuation procedure before each flight.</p> <p>(O) All non-cockpit emergency exits may be inoperative for a maximum of 3 flights provided:</p> <p>(a) Specific procedures are established to enter/evacuate the aeroplane,</p> <p>(b) An appropriate raft (if required) is available,</p> <p>(c) Only flight crew members (including NAA or Operator's Inspector(s)) essential for the flight are on board, and</p> <p>(d) Flight crew members are to review the evacuation procedure before each flight.</p>		

**Proposed EASA Guidance Book item:****Aeroplanes**

ATA Chapter: 52 Doors				PAGE: 52-
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	
			(4) Number required for dispatch	
			(5) Remarks or Exceptions	
ATA <b>52-51-1 Door/Exit</b> 52-51-1A	A	-	-	<p>(O)(M) One, on each deck, may be inoperative for a maximum of 5 flights provided that:</p> <p>(a) The number of passengers carried and the position of the seats which they occupy is in accordance with the guidance provided in additional considerations, and</p> <p>(b) Adequate cabin safety procedures are established and used, and</p> <p>(c) Affected door/exit is closed and locked, and</p> <p>(d) The affected door/exit is not used for passenger boarding, nor for any purpose whilst passengers are on board,</p> <p>(e) Affected door/exit is marked with a placard to prohibit utilisation, as applicable, and</p> <p>(f) All the door/exit markings, signs and lights associated with the affected door/exit must be obscured, as applicable.</p>

<p><b>52-51-2 Emergency Exit (All Cargo Configuration only)</b></p> <p>52-51-2A</p> <p>52-51-2B</p>	<p>C</p> <p>A</p>	<p>-</p> <p>-</p>	<p>2</p> <p>1</p>	<p><b>Procedures:</b></p> <p>(O) To ensure that:</p> <ul style="list-style-type: none"> <li>— All crew members are briefed on the location and condition of the affected door/exit, passenger distribution and modified cabin safety procedures;</li> <li>— Where the affected door/exit can be opened, the briefing should address the possible use of the door for emergency evacuation in certain circumstances;</li> <li>— The affected emergency exit, escape paths, and blocked seating layout are checked before each take-off and landing;</li> <li>— The pre-take-off briefing to passengers accurately represents the current state and condition of the aircraft's escape facilities;</li> <li>— A verbal briefing by cabin crew, or a briefing using automatic audio/visual presentation, or a briefing by reference to a briefing card, is immediately complemented by a verbal public announcement to inform passengers that a particular door/exit is inoperative and displays an appropriate placard.</li> </ul> <p>(M) To ensure that:</p> <ul style="list-style-type: none"> <li>— Affected door/exit is closed and locked if the closing/locking function is not affected;</li> <li>— If the closing/locking mechanism is affected, the door is secured closed and locked;</li> <li>— A conspicuous barrier, strap or rope and a placard stating 'DO NOT USE' are placed across the affected door/exit, as applicable, prior to passenger boarding;</li> <li>— Associated door/exit markings, signs and lights are obscured or removed.</li> </ul> <p>Any in excess of two door/exit not located in the flight crew compartment and intended to be used by the persons on board to evacuate the aeroplane may be inoperative.</p> <p>(O) Any in excess of one door/exit not located in the flight crew compartment and intended to be used by the persons on board to evacuate the aeroplane may be inoperative for a maximum of 5 flights.</p>
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52-51-2C	A	-	1	<p><b>Procedures:</b></p> <p>(O) To ensure that:</p> <ul style="list-style-type: none"> <li>— All crew members are briefed on the location and condition of the affected emergency exit, passenger distribution and modified cabin safety procedures;</li> <li>— A pre-take-off briefing to occupants accurately represents the current state and condition of the escape facilities.</li> </ul> <p>(O) Any in excess of one door/exit not located in the flight crew compartment may be inoperative for a maximum of 10 calendar days provided that:</p> <ul style="list-style-type: none"> <li>(a) A specific evacuation procedure is established, and</li> <li>(b) Only flight crew members and authority or operator inspector(s) essential for the flight are on board, and</li> <li>(c) Its external opening mechanism is operative, and</li> <li>(d) Its internal opening mechanism is operative,</li> <li>(e) Its escape slide or slide raft is operative unless an approved alternate means of escape is available, and an appropriate raft (if required) is available,</li> <li>(f) Its associated exit marking or locator sign and its associated floor proximity emergency escape path marking system and its associated exit interior emergency lighting and its exit exterior emergency lighting (for night operations) are operative, unless an operative torch is available for each flight crew member, and</li> <li>(g) Flight crew members are to review the evacuation procedure before each flight.</li> </ul>
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52-51-2D	A	-	0	<p><b>Procedures:</b></p> <p>(O) To ensure that:</p> <ul style="list-style-type: none"> <li>— All crew members are briefed on the location and condition of the affected door/exit and modified cabin safety procedures;</li> <li>— An alternate evacuation procedure is established and used to cover the specific dispatch configuration.</li> </ul> <p>(O) All doors/exits not located in the flight crew compartment may be inoperative for a maximum of 3 flights provided that:</p> <ul style="list-style-type: none"> <li>(a) Specific procedures are established to enter/evacuate the aeroplane,</li> <li>(b) An appropriate raft (if required) is available,</li> <li>(c) Only flight crew members and authority or operator's inspector(s) essential for the flight are on board, and</li> <li>(d) Flight crew members are to review the evacuation procedure before each flight.</li> </ul> <p><b>Procedures:</b></p> <p>(O) refer to 52-51-1C.</p>
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## References:

## Explanatory notes:

Based on the dispatch conditions of TGL 26 guidance, this item proposes a guidance to determine passenger number reduction and distribution, as applicable.

Current TGL 26 currently refers to CAA-UK FODCOM guidance.

The proposed guidance is based on the material resulting from a task initially launched in 1991 by JAA in cooperation with the Cabin Safety Working Group which has resulted in a draft TGL and was presented at MMEL/MEL WORKING GROUP MEETING, CJAA, March 15th and 16th 2005.

Most of the above working group recommendations have been taken into account.

In particular the purpose of the guidance is not to re-certify the aircraft under MEL configuration (one emergency exit inoperative), but rather to mitigate the operational consequences, based on an interpretation of the airworthiness requirements.

For example, the controversial application of an additional 20 % additional passenger reduction, as a margin to ensure airworthiness requirements are met, has not been retained in the proposed guidance.

However, to mitigate the non-compliance with the 60 ft between two pair of exits rule, a criterion has been introduced (dead end zone concept) in order to account for potential increased distances to be covered by passengers during an emergency evacuation induced by the new distribution of occupied seats vs blocked exits.

This guidance is proposed in order to harmonise the policies applicable today and to provide a European approach to this subject.

#### **Additional considerations:**

52-51-1 Door/exit

52-51-1A

Condition (d)

This condition accounts for human factor considerations. However, it does not preclude the dispatch with a door/exit used for passengers boarding or other purposes when passengers are on board and found to be inoperative afterwards. In this case additional considerations regarding operational procedures have to be taken into account.

In the event that a door/exit which has been used for boarding becomes unserviceable, then, prior to take-off, all passengers must be fully briefed on the inoperative door/exit and the revised emergency procedures are to be used.

Condition (e)

This condition ensures that the door/exit is marked with a placard to prohibit utilization if the failure mode prevents safe opening of the door/exit.

If the affected emergency exit can be opened manually (no failure in the mechanical opening system is present), it may still be used for evacuation in the case of emergency. In this case, the passenger briefing has to be adapted.

The same applies to condition (f).

52-51-2 Door/exit (All Cargo Configuration only)

Additional conditions may be required if cabin occupants other than flight crew members are carried.

### **PASSENGER NUMBER REDUCTION AND DISTRIBUTION GUIDANCE**

#### **Applicability:**

An exit is considered to be inoperative when, e.g. (non-exhaustive list):

- (1) the external exit opening means does not function correctly;
- (2) the internal exit opening means does not function correctly;
- (3) the exit opening power assist mechanism does not function correctly;
- (4) the door gust lock does not function correctly;
- (5) the assisting evacuation means, if required, is inoperative;
- (6) the exit marking or locator sign is inoperative;
- (7) the floor proximity exit marker is inoperative;
- (8) the exit interior emergency lighting is inoperative; or
- (9) the exit exterior emergency lighting or slide illumination, in case of night operation, is inoperative.

## Passenger/Seat Occupancy Reduction Guidance:

### 1. GENERAL

- (1) Any aeroplane configured with two pairs of Type III or larger exits only, is considered to be in an airworthy condition with one passenger emergency exit inoperative provided that the number of passengers is reduced to less than 20 and the entry door is operative.
- (2) Any aeroplane configured with more than two pairs of exits is considered to be in an airworthy condition with one passenger emergency exit inoperative provided that the number and distribution of passengers is in accordance with the maximum permitted (for the complete aeroplane and in each zone) capacity tables (MPC tables) that are specified in the relevant MEL in accordance with paragraph 2 below.

MPC tables are to be established for each exit inoperative configuration in every aeroplane type and model and for each individual passenger seating configuration that shall be operable with the respective exit inoperative.

- (3) ***Not more than one exit may be inoperative.***

In this respect, twin overwing exits (separated by less than three rows) in a side of the aeroplane are considered as a single exit if declared inoperative because of a single common failure (e.g., but not limited to a common slide failure or a common exit locator sign failure.)

### 2. Calculation of MAXIMUM PASSENGER CAPACITY (MPC) TABLES

#### (a) General

- (1) For the calculation, it is to be assumed that **both exits of the exit pair are inoperative, if one exit fails.**

An exit pair consists of two exits located essentially directly opposite each other but the combination of a single side exit and a tailcone exit is also considered to be a pair of exits.

- (2) A zone is defined as any section of the passenger cabin which is longitudinally bounded by a pair of exits on both ends or, where passenger seats are installed beyond the most forward or aft pair of exits, by the start or end of the cabin and the nearest pair of exits. If a zone has only an exit pair on one end, it is called a dead end zone.

A zone may also exist between the last exit pair and the tailcone exit (opening), or between an exit pair and a single ventral exit, if there are passenger seats installed in this area.

In aeroplanes where a single side exit and a tailcone exit are considered to be an exit pair and where seats are installed behind the side exit, the last zone starts and the penultimate zone ends at a centre line midway between the side exit and the tailcone exit (opening). The last zone in this configuration is also considered to be a dead end zone.

Note: Seats installed between the side exit and the tailcone exit are considered to be in the zone forward (or aft respectively) of the centreline midway between the two single exits if their front studs are forward (or aft respectively) of the centreline.

- (3) 'Aeroplane capacity' means the number of passengers calculated for the aeroplane; 'zone capacity' means the number of passengers calculated for a designated zone of the passenger cabin.
- (4) The maximum number of passengers permitted for each *operative* exit pair/exit is defined as follows:

**Table 1**

Emergency exit	Passenger exit/ exit pair rating
Type A (exit pair)	110
Type B (exit pair)	75
Type C (exit pair)	55
Type I (exit pair)	45
Type II (exit pair)	40
Type III (exit pair)	35
Adjacent type III (less than 3 seat rows)* see note 2	65
Type IV (exit pair)	9
Ventral exit (single exit)	12
Large tailcone exit (single exit)	25
Other tailcone exit (single exit)	15
Large tailcone exit combined with a Type I or larger exit (exit pair)	45

**Note 1:** Type B and C are listed above, despite not appearing yet in CS-25, to account for aircraft that were certificated using these ratings. Other ratings (e.g. oversized type I, etc.), as determined during certification, may be considered.

**Note 2:** Dual overwing exit pairs located more than three seat rows apart from each other are considered as separate exit pairs.

**Note 3:** Two adjacent Type III overwing exit pairs located within three seat rows from each other are considered as one pair of exits (dual Type III exit pair) having a rating of 65. To determine the start or end of a zone bounded on one end by the two adjacent exit pairs, a new centerline midway between the two adjacent exit pairs shall be established. Seats whose front studs are forward of the new centerline are considered to be in the forward zone, seats whose front studs are aft of the new centerline are considered to be in the aft zone.

In case of a single common failure of the adjacent exit pairs, all four exits are assumed to be inoperative. In case of a non-common single failure related to one exit out of the four exits only, one operative Type III exit pair with a rating of 35 remains.

**Note 4:** Exits of an exit pair that are not of the same size, e.g. a Type III exit on one side of the fuselage and a Type II exit opposite, have the (exit pair) rating of the smaller exit type.

**Note 5:** A *large* tailcone exit is an exit incorporating a floor level opening of not less than 20 inches wide by 60 inches high, with corner radii not greater than 7 inches, in the pressure shell and incorporating an approved assist means.



**Note 6:** Any *other* tailcone exit is an exit incorporating an opening in the pressure shell which is at least equivalent to a type III exit and has the top of the opening not less than 56 inches from the passenger compartment floor.

**Note 7:** The rating of each emergency exit in the passenger compartment installed in excess of the minimum number of required passenger emergency exits is zero for the calculation of the Maximum Passenger Capacity.

**(b) Calculation method**

Based on the passenger seat layout approved for the individual aeroplane, a drawing of the passenger compartment must first be established clearly showing:

- the position of exits,
- the type of exits,
- the exits above the waterline ('ditching exits')
- the passenger zones,
- the number and position of all passenger seats in each zone,
- the number of passenger seats installed within 30 feet of any exit, and
- the overload capacities of the rafts available at each exit.

Using the above drawing, initial aeroplane capacities for the different inoperative exit cases are to be calculated according to (b) (1) below to ensure that an acceptable level of safety is maintained.

Then initial zone capacities are to be calculated for each case according to (b) (2) below for all zones to avoid overloading of individual zones and to ensure that passenger seating arrangement is optimized.

Finally, the *maximum permitted zone capacities* (MPZC) are to be calculated according to (b) (3) below.

**(1) Initial aeroplane capacity:**

If only one of the operative exit pairs of the aeroplane is a Type A, Type B, or Type C, this exit pair has to be downrated to Type I before starting the following calculation.

The initial aeroplane capacity with one exit inoperative is the most limiting figure of the following:

- (i) the sum of the passenger exit ratings for all *operative exit pairs/exits* as specified in table 1 of section 2 (a) above;
- (ii) the maximum *certified* passenger seating capacity of the aeroplane type or model reduced by the passenger exit rating of the inoperative exit pair or, in case of a single exit, of the inoperative exit;
- (iii) **9**, where only a remaining fully operative exit pair includes door smaller than Type III,  
**19**, unless at least one of at least two operative exit pairs is of Type II or larger,  
**40**, unless at least one of at least two operative exit pairs is of Type I or larger,  
**110**, unless at least two of the operative exit pairs are of Type I or larger.

**Note:** A dual Type III exit pair (exit rating: 65) is also considered to be 'larger' than a Type I exit pair in this context.

- (iv) whether ditching certification is requested or not, the number of operative exits in a side of the aeroplane, which meet at least the dimensions of a Type III exit and are above the waterline, has to be multiplied by 35.

If a higher passenger seat/exit ratio has been granted for type certification for any exit above the waterline, this ratio may be used instead of 35.

If there is only one top hatch or one operative side exit above the waterline in each side of the aeroplane that has at least the dimensions of a Type III exit, the initial aeroplane capacity is limited to 35!

If there is only one operative exit above the waterline in each side of the aeroplane that has at least the dimensions of a Type IV exit, the initial aeroplane capacity of the aeroplane must be limited to 9!

- (v) If life rafts are required to be carried, the sum of the rated capacities of all slide rafts of operative exit pairs including the rated capacity of any life raft or the sum of the overload capacities of all slide rafts of operative exit pairs including the overload capacity of any life raft taking into account the loss of one slide/life raft of the **largest rated** capacity, whichever is the most limiting.

**[Ref. § 25.807(i) and § 25.1415]**

**(2) Initial zone capacities:**

To get the initial zone capacities, the following criteria must be applied one after the other using the most limiting zone capacity achieved so far for the next calculation step.

**(i) Individual zone capacity limitation:**

The capacity of each individual zone shall not exceed the sum of the exit ratings of the operative exit pairs bordering the zone.

In addition, passengers shall not be seated on seat rows adjacent to the affected exit(s).

In order to account for potential increased distance between occupied seats and the nearest operative exit, each zone adjacent to an inoperative exit has to be treated as a dead end zone.

Consequently, the passenger capacity of the dead end zone shall not exceed 75 % of the rating of the single pair of exits bordering the zone (rounded down).

In case a dead end zone is made up of two adjacent zones one forward and one rearward of the inoperative exit, the sum of the capacities of the adjacent zones shall not exceed 75 % of the rating of the operative exit pair bordering the dead end zone.

**(ii) Sequential zone capacity limitation:**

While traversing the aeroplane from nose to tail and from tail to nose, the passenger capacity of combined consecutive zones shall not exceed the sum of the ratings of the operative exit pairs bordering or included in the consecutive zones being analysed. If necessary, the passenger capacity of the last zone in this combination shall be reduced accordingly.

Note: Starting from tail to nose and continuing from nose to tail is also permissible. This may result in different capacities for individual zones, but the capacity of the combination of these individual zones remains the same in both cases.

**(3) Maximum permitted zone capacities (MPZC):**

The initial zone capacities must be reduced to maximum permitted zone capacities, the sum of which is limited by the initial aeroplane capacity.

The reduction may be applied equally to all zones or mainly to the zone(s) adjacent to the inoperative exit, as appropriate.

**Existing TGL 26 item:****Aeroplanes**

ATA Chapter: 52 Doors				PAGE: 52-5
(1) System & Sequence Numbers ITEM	(2) Rectification Interval			
			(3) Number installed	(4) Number required for dispatch
				(5) Remarks or Exceptions
ATA				
52-51 Reinforced Flight Deck Door (JAR-OPS 1.1255)				
(1) Automatic Locking System	A	1	0	<p>(O)(M) May be inoperative for a maximum of 4 flights provided:</p> <p>(a) Automatic locking system is deactivated, and</p> <p>(b) Alternate procedures are established and used for locking and unlocking the door, using deadbolts or supplementary restraint systems.</p> <p><u>Note:</u> These dispatch conditions only apply to operations to and from countries which require secured doors.</p>
	B	1	0	<p>(O)(M) May be inoperative provided:</p> <p>(a) Automatic locking system is deactivated, and no other locking system is used, and</p> <p>(b) Alternate procedures are established and used for access to the flight deck.</p>
(2) Lock Control Selector / Switch	C	-	1	Any system in excess of one may be inoperative.
(3) LOCK / DENY Function	B	-	0	(O)(M) May be inoperative provided:

				<p>(a) Flight deck access device [keypad or pushbutton] is deactivated,</p> <p>(b) Automatic locking system is verified to operate normally, and</p> <p>(c) Alternate procedures are established and used to lock the door, and for access to the flight deck.</p> <p>(cont.)</p>
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52-51 Reinforced Flight Deck Door <i>(JAR-OPS 1.1255)</i> (cont.)					
	(4) UNLOCK Function	C	1	0	(O)(M) May be inoperative provided:  (a) Automatic locking system is verified to operate normally, and (b) Alternate procedures are established and used to lock the door.
	(5) NORM/AUTO Function	B	1	0	(O)(M) May be inoperative provided:  (a) Flight deck access device [keypad or pushbutton] is deactivated, (b) Automatic locking system is verified to operate normally, and (c) Alternate procedures are established and used for access to the flight deck.
		-	1	0	Refer to item associated with the automatic locking system — see part (1).
	(6) Door Release Mechanism/Door Strike (if installed)	D	3	2	One may be inoperative.
	-	3	-	Refer to item associated with the automatic locking system — see part (1).	

(7) Flight Deck Access Devices [Keypad/Pushbutton]	C	1	0	(O)(M) May be inoperative provided:  (a) Flight deck access device is deactivated, and (b) Alternate procedures are established and used for access to the flight deck.
(8) LEDs on keypad or control panel	C	-	0	(O) May be inoperative provided alternate procedures are established and used for access to the flight deck.  (cont.)

ATA Chapter: 52 Doors					PAGE: 52-6
(1) System & Sequence Numbers ITEM		(2) Rectification Interval			
		(3) Number installed			
		(4) Number required for dispatch			
		(5) Remarks or Exceptions			
ATA					
52-51	Reinforced Flight Deck Door (JAR-OPS 1.1255) (cont.)				
	(9) Door Lock FAIL/ FAULT Light	C	1	0	May be inoperative provided the automatic lock controls are verified to operate normally.
	(10) Door Lock AUTO UNLK/OPEN Light	C	1	0	May be inoperative provided:  (a) Automatic lock controls are verified to operate normally, and (b) Door chime or buzzer operates normally.
	(11) Buzzer/Chime	C	1	0	(O)(M) May be inoperative provided:  (a) Flight deck access device [keypad or pushbutton] is deactivated, and (b) Alternate procedures are established and used for access to the flight deck.
	(12) Supplementary Restraint Systems/ Deadbolt (if installed)	D	1	0	<u>Note:</u> For MEL relief on flight deck door surveillance systems, please refer to Section 5 — Additional MEL Guidance.

**Proposed EASA Guidance Book item:****Aeroplanes & Helicopters**

ATA Chapter: 52 Doors				PAGE: 52-5
(1) System & Sequence Numbers ITEM		(2) Rectification Interval		
		(3) Number installed		
		(4) Number required for dispatch		
		(5) Remarks or Exceptions		
ATA				
<b>52-52-1</b>	<b>Flight Crew Compartment Door</b>			
52-51-1-1	Locking System			
52-51-1-1A		B	-	0
		(M) (O) May be inoperative provided that:		
		(a) It is deactivated, and		
		(b) A safe position of the door is ensured for take-off and landing, and		
		(c) Alternate crew procedures are established and used for controlling access to the flight crew compartment, in accordance with the applicable national civil aviation security programme.		
		<b>Procedures:</b>		
		(M) To provide guidance for deactivation of the locking system and, if necessary, the means to ensure proper position of the door in accordance with condition (b).		
		(O) To provide alternate crew procedures for controlling access to the flight crew compartment.		
52-52-1-2	Flight Crew Compartment Access/Control Functions			
52-52-1-2A		B	-	0
		(O) May be inoperative provided that:		
		(a) Emergency means are operative to enable a crew member to enter the pilot compartment in the event that the flight crew becomes incapacitated, and		

				(b) Alternate crew procedures are established and used.  <b>Procedures:</b>  (O) To provide alternate procedures for the crew to manage access control to the flight crew compartment.
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### **Aircraft applicability: Aeroplanes**

**References:** ORO.SEC.100.A

### **Explanatory notes:**

Item 52-51-2 of current TGL 26 guidance is proposed to be renumbered 52-52-1.

The current JAA guidance is based on inputs from the Industry in relation with a specific design of reinforced cockpit door.

These were introduced in order to enable the MMEL form the manufacturers to mention only the airworthiness-related sub-systems of the door (keypad and door pressure release device) and to cover the other sub-systems through the 'As required by regulations'.

The proposed EASA guidance does not reflect design specific sub-items and is intended to provide a generic approach, accounting for other design specificities.

This does not preclude the applicant to provide more detailed breakdown of the proposed items as part of the type specific MMEL.

Sub-item (1) of current TGL 26 guidance is proposed to be modified (see 52-51-1-1A ) as it is subject to airworthiness considerations in case of rapid decompression, as the use of the deadbolt or similar locking device may prevent the automatic opening of the flight crew compartment door.

### **Additional considerations:**

The proposed guidance refers to alternate procedures to be established and used when the locking system of the door is inoperative for controlling access to the flight crew compartment.

These procedures may rely on available locking features installed on the aircraft to meet applicable security requirements.

These procedures will have to consider appropriate actions when a decompression function is dependent on the affected locking system in order to ensure that an acceptable level of safety is maintained.

A restriction of the rectification interval may be considered when evaluating the consequences on airworthiness and security of the proposed dispatch configuration.

The utilisation of part of these procedures for some designs features that may incorporate additional locking features or locking features that were originally designed for use in other than in-flight operations, and which may be accompanied by placards labelled 'For Ground Use Only', etc., is not considered to be part of this guidance.



**ANNEXES****ANNEX 1****CLASSIFICATION OF CHANGE IN TYPE DESIGN****Subpart D — Changes to type certificates****GMx-21A.91****Classification of changes to a type design****Complementary guidance for classification of changes affecting the MMEL**

- (a) A change to the MMEL is judged to have an 'appreciable effect on the operational suitability of the aircraft' and therefore should be classified major, in particular but not only, when one or more of the following conditions are met:
- (1) The change corresponds to the introduction of a new MMEL item, except when:
    - (i) the item is considered as non-safety-related;
    - (ii) the item has already been approved through a temporary revision or a change proposal; or
    - (iii) the item is indicated as eligible for minor change classification in Appendix 1 to GM1-CS-MMEL-145.
  - (2) The change corresponds to the reduction of the number of items required for dispatch.
  - (3) The change corresponds to an increase of the permitted maximum time prior to repair of an item.
  - (4) The change alters the operating limitations associated to an MMEL item, except when the change has already been approved by the Agency (e.g. AFM).
- (b) A change to the MMEL is judged not to have an 'appreciable effect on the operational suitability of the aircraft' and therefore should be classified minor, in particular but not only, when one or more of the following conditions are met:
- (1) The change only corresponds to the applicability of an item for configuration management purposes.
  - (2) The change is to align with a change of Appendix 1 to GM1-CS-MMEL-145 content associated to an item indicated as eligible for minor change classification.
  - (3) The change corresponds to a reduction of the permitted maximum time prior to repair of an item provided that the Agency is informed about the reason for the change within 2 months after the change is issued.
  - (4) The change corresponds to minor editorial corrections.

**ANNEX 2****AVAILABILITY OF MMEL OPERATIONAL AND MAINTENANCE PROCEDURES****Subpart B — Type certificates****GMx-21A.62****Availability of operational suitability data****Availability of MMEL operational and maintenance procedures**

- (a) The operational or maintenance procedures are provided by the holder of the type certificate or restricted type certificate as part of the MMEL or a reference to the appropriate document is available.
- (b) The operational and maintenance procedures are made available by the holder of the type certificate or restricted type certificate to the EU operator of the aircraft before the associated MMEL item becomes applicable.
- (c) The operational and maintenance procedures should be verified by the holder of the type certificate or restricted type certificate before they are made available to the operators.