สำนักงานการบินพลเรือนแห่งประเทศไทย
The Civil Aviation Authority of Thailand

AC AW-02-MEL

CAAT-AIR-AC02 Issue: 1

Revision: 3

Date: 15/ SEP/ 2017

Approved By

Chula Sukmanop
Director General
The Civil Aviation Authority of Thailand

ISSUE APPROVAL

This Advisory Circular provides information and guidance to air operator and Aircraft maintenance organization about standards, practices and recommendations for Minimum Equipment List (MEL) Requirements to be acceptable to the requirement of Civil Aviation Authority of Thailand.

In addition, this Advisory Circular also describes acceptable methods for the operation of aircraft for all Thai-registered aircraft operator with certain inoperative instrument and equipment, which are not essential for safe flight.

Amendments to this manual will be notified through http://www.caat.or.th/

(Chula Sukmanop)
Director General
The Civil Aviation Authority of Thailand

Record of Revision

Revision No.	Revision Date	Edited By
ORIGINAL	1 September 2016	Chatchai P.
2	1 November 2016	Chatchai P.
3	15 September 2017	Chatchai P.

List of Effective Page

Item	Page	Revision No.	Revision Date
1. GENERAL	1	3	15 September 2017
2. PURPOSE	1	3	15 September 2017
3. APPLICABILITY	1	3	15 September 2017
4. CANCELLATION	1	3	15 September 2017
5. EFFECTIVE DATE	1	3	15 September 2017
6. REFERENCES.	1	3	15 September 2017
7. INTRODUCTION	1	3	15 September 2017
8. APPLICABILITY	2	3	15 September 2017
9. DEFENITION	2	3	15 September 2017
10.APPLICABILITY OF MEL	3	3	15 September 2017
11.PREPARATION OF THE MEL	3	3	15 September 2017
12.FORMAT OF THE MEL	4	3	15 September 2017
13.MELTIPLE UNSERVICEABILITIES	4	3	15 September 2017
14.OPERATIONAL AND MAINTNENANCE PROCEDURES	4	3	15 September 2017
15. RECTIFICATION INTERVALS	5	3	15 September 2017
16.RECTIFICATION INTERVAL EXTENSION (RIE)	5	3	15 September 2017
17. BRIDGING ASSESSMENT FOR OPERATOR WITH APPROVED MEL	7	3	15 September 2017
APPENDIX 1	8	3	15 September 2017
APPENDIX 2	19	3	15 September 2017
ATA 22 Autoflight	20	3	15 September 2017
ATA 23 Communications	30	3	15 September 2017
ATA 25 Equipment/Furnishings	56	3	15 September 2017
ATA 26 Fire Protection	92	3	15 September 2017
ATA 30 Ice Protection	99	3	15 September 2017
ATA 31 Indicating/Recording Systems	114	3	15 September 2017
ATA 33 Lights	124	3	15 September 2017
ATA 34 Navigation (Flight Instruments)	146	3	15 September 2017
ATA 34 Navigation (Navigation Equipment)	170	3	15 September 2017

THE CIVIL AVIATION AUTHORITY OF THAILAND

Item	Page	Revision No.	Revision Date
ATA 35 Oxygen	190	3	15 September 2017
ATA 46 Information Systems	201	3	15 September 2017
ATA 52 Doors	205	3	15 September 2017

Table of Content

AC AW-02-MEL

15 September 2017

Advisory Circular

Minimum Equipment List (MEL) Requirements

1. **GENERAL** Advisory Circulars (ACs) are issued by the Civil Aviation Authority of Thailand and contain information about standards, practices and procedures acceptable to the Authority. The revision number of the AC is indicated in parenthesis in the suffix of the AC number
2. **PURPOSE** This Advisory Circular (AC) provides guidance for the MEL approval process.
3. **APPLICABILITY** This AC applies to all Thailand AOC holders.**d**
4. **CANCELLATION** This document replaces AC AW-02-MEL previously issued by CAAT on 1 November 2016.
5. **EFFECTIVE DATE** This AC is effective from 15 September 2017.
6. **REFERRENCES** the following materials were referred to for the development of this AC:
    a. ICAO Doc 9574;
    b. FAA AC 91–85; and
    c. EASA CS-MMEL (Rev. Initial Issue, 31 January 2014)
7. **INTRODUCTIONS**
    a. AOCR Chapter 2, (39) Operators shall not operate aircraft with unserviceable equipment, except under the approval Such Approval will be granted only after the content of the proposed Minimum Equipment List (MEL) has been vetted and found acceptable by the Airworthiness Office and Flight Operations Office
    b. Requirements of an MEL are set out in AOCR. The current AC is established to delineate the specification of an MEL in detail and provide guidance on the preparation of an MEL to comply with the required approval process

8. APPLICABILITY This AC is applicable to all operators of Thai registered aircraft of which the operations manuals include Minimum Equipment List approved, or to be approved by the Civil Aviation Authority.

9. DEFINITION Terms and abbreviation in the context of this AC have the following meaning:

a. ***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.

b. ***Approved by the Authority*** means documented by the Civil Aviation Authority as suitable for the purpose intended.

c. ***Calendar Day*** means a 24-hour period from midnight to midnight based on either UTC or local time, as selected by the operator.

d. ***Commencement of flight*** means the point when an aircraft begins to move under its own power for the purpose of preparing for take-off.

e. ***Day of discovery*** means the calendar day that a malfunction was recorded in the aircraft maintenance record/log book.

f. ***Equipment*** means item, function, component or system

g. ***Flight Day*** means a 24-hour period (from midnight to midnight) either UTC or local time, as established by the operator, during which at least one flight is initiated for the affected aircraft.

h. ***If installed*** means that the equipment is either optional or is not required to be installed on all aircraft covered by the MMEL.

i. ***Inoperative*** means that the equipment does not accomplish its intended purpose or is not consistently functioning within its design operating limits or tolerances. Some equipment has been designed to be fault tolerant and are monitored by computers which transmit fault messages to a centralized computer for the purpose of maintenance. The presence of this category of message does not necessarily mean that the equipment is inoperative.

j. ***Master minimum equipment list (MMEL)*** means a list established for a particular aircraft type by the organization responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedure

k. ***Minimum equipment list (MEL)*** means a list which provides for the operation of aircraft, subject to specified conditions, with particular

equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.
Note - All items related to the airworthiness of the aircraft and not included in the list are automatically required to be operative.

l. ***(O) & (M) procedures*** means the applicable operational and maintenance procedures obtained from the aircraft manufacturer which may be included in the MMEL document or in a separate document produced by the manufacturer.

m. ***Rectification Interval*** means a limitation on the duration of operations with inoperative equipment.

n. ***RIE*** means an abbreviation for Rectification Interval Extension

10. APPLICABILITY OF MEL

a. The MEL is applicable up to the commencement of flight.

b. Where there is a conflict between the MEL and an Airworthiness Directive or any other Mandatory Requirement, it is the data or information contained in the Airworthiness Directive or the Mandatory Requirement (e.g. Continued Airworthiness requirement) which shall override.

c. The MEL may contain additional advisory material or modified operational and maintenance procedures.

11. PREPARATION OF THE MEL

a. The MEL, including the Preamble and Definitions, shall be based upon, but not less restrictive than, the relevant MMEL established for that aircraft type approved by the Authority of its State of design.

b. When an MMEL revision is issued, an operator shall have 90 days from the date of revision to submit the revised MEL to the Civil Aviation Authority

c. Reduced time scales for implementation of safety related revisions may be required.

d. Entries of the MEL shall be applicable to a particular aircraft fleet with the same equipment configuration. Optional equipment listed in the MMEL but not applicable to the operator's aircraft shall be excluded from the operator's MEL

e. For those items of which the number installed is a variable and not specified in the MMEL, the actual number installed in the aircraft must be specified in the operator's MEL

f. Non- safety related equipment, such as galley equipment and passenger convenience items, need not be listed in the MEL. However, operators shall

establish an effective decision-making process for failures that are not listed to determine if they are related to airworthiness and required for safe operation

g. The operator shall ensure that the conditions to dispatch the aircraft for specific operations (if applicable) such as Reduced Vertical Separation Minimum (RVSM), Performance-based Navigation (PBN), All Weather Operations (AWO), Extended Range Operations (ETOPS), etc. are taken into account for the relevant MEL items and are clearly specified in their MEL entries.
h. The MEL shall be proofread to eliminate typographical errors and be assured for compliance with the regulations before submitting to the Civil Aviation Authority for approval. The MMEL revision which the operator's MEL is based upon shall be referred in the cover letter of MEL submission.
i. Appendix 2 to this AC contains some MMEL alleviation items frequently marked *"As required by Regulations"* or *"As required by the Authority"*, which can be referenced as baseline for such items in the MEL
j. Appendix 2 to this AC contains some MMEL alleviation items frequently marked "As required by Regulations" or "As required by the Authority", which can be referenced as baseline for such items in the MEL

12. FORMAT OF THE MEL

a. The MEL shall contain a relevant Preamble, Definitions and, if appropriate, clarifying Notes which shall adequately reflect the scope, extent and purpose of the List
b. The MEL shall indicate the revision status of the MMEL upon which it is based.
c. The Preamble shall contain guidance for flight crews and maintenance personnel who will use the MEL
d. When an MEL is revised, a brief description of the changes to the paragraphs and items revised shall be listed and included as part of the amendment to the MEL

13. MULTIPLE UNSERVICEABILITIES

The operator shall ensure that the MEL, including the Preamble, reflects the guidance given in the MMEL on the effects of multiple unserviceability.

14. OPERATIONAL AND MAINTENANCE PROCEDURES

a. Operators shall take Operational and Maintenance procedures referenced in the MMEL into account when preparing an MEL. An operator shall be prepared to present these procedures to the Civil Aviation Authority during the MEL

approval process and notify the Civil Aviation Authority of the source of such procedures.

b. Operational Procedures shall be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew. The satisfactory accomplishment of all procedures is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL
c. Maintenance Procedures shall be accomplished prior to operating with the listed item inoperative. These procedures are accomplished by maintenance personnel. The satisfactory accomplishment of all maintenance procedures is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.
d. The procedures themselves, or symbols indicating their need and reference to their location, are required in the operator's MEL.
e. The MEL shall be appropriately amended, as and when applicable operations or maintenance procedures as referenced in the MMEL are revised
f. Unless specifically permitted, an inoperative item may not be removed from the aircraft

15. RECTIFICATION INTERVALS

a. The operator shall take account of the Rectification Interval given in the MMEL when preparing an MEL. The Rectification Interval in the MEL shall not be less restrictive than the corresponding Rectification Interval in the MMEL
b. The operator is responsible for the Scope of the MEL establishing an effective rectification programme that includes tracking of the inoperative items and coordinating parts, personnel, facilities, and procedures necessary to ensure timely rectification.
c. Operation of the aircraft is not allowed after expiry of the Rectification Interval specified in the MEL, unless the defect has been rectified or The Rectification Interval is extended in accordance with paragraph 16.

16. RECTIFICATION INTERVAL EXTENSION (RIE)

a. Principles of RIEs
    i. Subject to the approval of the Civil Aviation Authority, the operator may use a procedure for the extension of certain applicable rectification intervals B, C, and D for the same duration as specified in the MEL, provided:

1. A description of specific duties and responsibilities for controlling extensions is established by the operator and accepted by the Civil Aviation Authority of Thailand
2. The operator only grants a one-time extension of the applicable rectification interval, and
3. he Civil Aviation Authority is notified of any extension granted within a timescale acceptable to the Civil Aviation Authority, not to exceed ten days, and
4. Rectification is accomplished at the earliest opportunity within the period of the extension

b. Application for the use of RIEs

The operator shall incorporate a procedure for the use of RIEs in their General Maintenance Manual (GMM). The procedure should detail the name and position of the nominated person responsible for the control of the company RIE procedure and details of the specific duties and responsibilities established by the operator to control the use of RIEs.

c. RIE Procedure

i. An RIE GMM procedure must detail;

1. Consultation - between the operational and technical staff of the operator as to the requirement for the RIE and the recommendation of the proposal.
2. Decision - made by the Authorizing Manager to accept or reject the proposal based on consultation
3. Authorization - formal authorization to inform the aircraft commander of the use of the RIE
4. RIE Report - made to the CAAT within 10 days of the extension being authorized

ii. A chain or system of consultation must be listed. Authorizing Managers who must be senior with experience in technical and operations management are to be listed by appointment and name.

iii. Operators are reminded that they must ensure that rectification is accomplished at the earliest opportunity. This is applicable for both the standard Rectification Interval and for the RIE

iv. The RIE permits an operator to continue to dispatch an aircraft with particular equipment unserviceable after the standard rectification interval has expired if, in the opinion of the Authorizing Manager, it is not reasonably practicable for the repair to be made within that rectification interval. It is not intended that RIEs should be used purely to double the standard rectification interval

v. It is most important that the agreed procedures for the use of RIEs are followed. In the event that operators do not comply with the laid down conditions, the CAAT will take action by means of warning letters and ultimately (normally a second incident) by removal of the authorization to utilize RIEs on a temporary or permanent basis.

17. BRIDGING ASSESSMENT FOR OPERATOR WITH APPROVED MEL

Operators whose operations manuals include MELs approved prior to the effective date of this AC shall review their MELs for compliance with the aforementioned requirements. Otherwise the MELs shall be revised in accordance with the specifications stated in this AC and the MEL amendments shall be submitted to Civil Aviation Authority for approval no later than six months from the effective date of this

Appendix 1

Guidance on the Preparation of Minimum Equipment List (MEL)

1. INTRODUCTION

a. Dispatch with Inoperative Equipment

i. The Master Minimum Equipment List (MMEL) and associated MEL are alleviating documents. Their purpose is not, however, to encourage the operation of aircraft with inoperative equipment. It is undesirable for aircraft to be dispatched with inoperative equipment and such operations are permitted only as a result of careful analysis of each item to ensure that the acceptable level of safety is maintained. A fundamental consideration is that the continued operation of an aircraft in this condition should be minimized. The limitations governing rectification intervals are discussed in this document (paragraph 15 of this AC).

ii. An operator or pilot retains the option to refuse any alleviation, and may choose not to dispatch with any particular MEL item inoperative.

b. Equipment Included in the MEL

Most aircraft are designed and certified with a significant amount of equipment redundancy, such that the airworthiness requirements are satisfied by a substantial margin. In addition, aircraft are generally fitted with equipment that is not required for safe operation under all operating conditions, e.g. instrument lighting in day VMC. Other equipment, such as entertainment systems or galley equipment, may be installed for passenger convenience. If this non-safety related equipment does not affect the airworthiness or operation of the aircraft when inoperative, it need not be listed in the MEL or be given a rectification interval. However, if the non-safety related equipment has another function related to safety (such as use of the entertainment system for passenger briefings) then this item must be included in the MEL with an appropriate rectification interval

2. MEL POLICY AND PROCEDURES

a. MEL Purpose

i. The MEL is a joint operations and maintenance document prepared by an operator to:

1. identify the minimum equipment and conditions for an aircraft to maintain the Certificate of Airworthiness in force and to meet the operating rules for the type of operation;
2. define operational procedures necessary to maintain an acceptable level of safety and to deal with inoperative equipment; and
3. define maintenance procedures necessary to maintain an acceptable level of safety and procedures necessary to secure any inoperative equipment

b. MEL Intent

i. While the MMEL is for an aircraft type, the MEL is tailored to the operator's specific aircraft and operating environment and may be dependent upon the route structure, geographic location, and number of airports where spares and maintenance capability are available etc. The MMEL cannot address these individual variables, nor standard terms such as "*As required by Operational Requirements*". It is for this reason that an MMEL is not normally accepted by the Civil Aviation Authority as a substitute for the MEL. It falls on the operator to develop operational "(O)" and maintenance "(M)" procedures, or to use documents such as Dispatch Deviations Guides, where these documents are available

ii. Except as authorized by the Civil Aviation Authority, operation of an aircraft with aircraft equipment inoperative or removed is prohibited, unless an operator does so in compliance with an approved MEL.

c. Applicability

i. Chapter 2, section 39 of the AOCR stipulates that the operator shall establish an MEL for each aircraft, approved by the Civil Aviation

Authority. This MEL shall be in conformity with, or more restrictive than, the relevant MMEL established for the aircraft type.

d. Administrative Procedures

i. MMEL Acquisition

The operator must ensure that they use the latest version of the appropriate MMEL to develop their MEL (refer to paragraph 11 of this AC).

e. Conformance with the MMEL

i. MEL Content

1. The operator's MEL must reflect the current limitations in the applicable MMEL. When a revision is issued to an MMEL, the operator's MEL need not be revised if the change is less restrictive than the existing MEL
2. Except as noted above, the operator’s MEL shall be revised to reflect the most recent approved version of the MMEL within 90 days from the revision date, as per the requirements in paragraph 11 of this AC

ii. Non-Safety Related Equipment

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, ash trays, stereo equipment, and overhead reading lamps. Non-safety related equipment must not have an effect on the airworthiness or operation of the aircraft (see paragraph 11(f) of this AC). This equipment does not require a rectification interval, and need not be listed in an operator's MEL, if it is not addressed in the MMEL. If an operator chooses to list this equipment in the MEL, it may be given a D category rectification interval. The exceptions to this rule are:

1. Where non-safety related equipment serves a second function, such as movie equipment being used for cabin safety briefings, operators must develop and include operational contingency procedures in the MEL in case of an equipment malfunction
2. Where non-safety related equipment is part of another aircraft system, for example the electrical system, procedures must be

developed and included in the MEL for deactivating and securing in case of malfunction

In these cases, the item must be listed in the MEL, with compensating provisions and deactivation instructions if applicable. The rectification interval will be dependent on the secondary function of the item and the extent of its effect on other systems

f. MEL Amendment

i. The operator shall revise or amend the MEL when

1. Applicable MMEL is issued with changes applied to items that are more restrictive than in the MEL (as referred in paragraph 2.5 of this appendix); or
2. Operational and Maintenance procedures as referred in 2.7.7 of this appendix are amended; or
3. Modifications are embodied, or Airworthiness Directives or other mandatory requirements related to the continued airworthiness are issued that may affect the items in the MEL; or
4. New standards for airworthiness or operational equipment items are introduced; or
5. Required by the operator or Civil Aviation Authority as a result of in-service experience.

Note: Operator may apply Temporary Revisions (TR) to amend MEL for impending changes. However, method to control and incorporate TRs into normal revision of MEL is subject to Civil Aviation Authority acceptance and the procedures shall be specified in the preamble section.

g. MEL Development Procedures

i. MEL Basic Format

The MEL should include the following: a List of Effective Pages, a Table of Contents, the Preamble, Notes and Definitions, a section for each aircraft system, and amendment record page. The Preamble and

Definitions shall be based upon, but no less restrictive than, the relevant MMEL as per paragraph 11(a) of this AC. Operators must specify the revision status of the MMEL, and any other documents as specified in 2.7.7 of this appendix such as a Dispatch Deviations Guide or the manufacturer's O &M Procedures, used in the development of their MEL

ii. MEL Page Format

MEL format is at the discretion of the operator, provided that it is clear and unambiguous. However, it is recommended that the MEL page format follow the MMEL page format of five columns (see Appendix 2 to this AC for sample). The page numbering, and individual MEL items, however, should be in accordance with the ATA 2200 code system.

iii. List of Effective Pages

A List of Effective Pages (LEP) will be used to ensure that each MEL is up-to-date. It must list the date of the last amendment for each page of the MEL. The date and revision status of each page of the MEL must correspond to that shown on the List of Effective Pages

iv. Table of Contents

The Table of Contents page should list the section for each aircraft system using the ATA 2200 listing as found in the MMEL. Pages should be numbered with the ATA system number followed by the item number for that system (e.g., the page following 27-2-1 would be 27-2-2).

v. MEL Preamble

The purpose of the MEL Preamble is to provide direction to company personnel on the philosophy and use of the MEL. An operator may choose to develop their own preamble but it should contain at least the information contained in the MMEL preamble in accordance with the specification required by this AC.

vi. Notes and Definitions

Notes and Definitions are required to allow the user to interpret the MEL properly. Additions and deletions to the Notes and Definitions may be applied to the operator's MEL as required.

vii. Operational and Maintenance Procedures

1. Dispatch with inoperative items is often acceptable only with the creation of special operational or maintenance procedures.
2. Where the MMEL indicates that this is the case, the operator must establish appropriate procedures. Procedures recommended by the manufacturer in most cases can be adopted for this purpose, but the ultimate responsibility for providing acceptable procedures with the MEL rests with the operator. These procedures will ensure that an acceptable level of safety will be maintained. The manufacturer is required to produce operational and maintenance procedures such as Dispatch Deviation Guides, for use by operators. These procedures may be inserted into the appropriate MEL pages, and submitted by the operator, to form part of the MEL. Dispatch Deviation Guides, and other similar documents are not approved by the Civil Aviation Authority, nor can they replace the MEL. If the manufacturer has not published operational or maintenance procedures, the operator should develop appropriate procedures and, if requested, submit them to their Authority
3. The operator, when comparing the MEL against the MMEL, should ensure that where the (O) or (M) symbols appear, an operational or maintenance procedure has been developed that provides clear direction to the crew members and maintenance personnel of the action to be taken. This procedure should be included in the MEL or associated Operator's Manual
4. The only exception is when the procedure is contained in another document that is available, e.g. other part of the Operations Manual (for "(O)" procedures) or the Maintenance Manual (for "(M)" procedures). In the latter cases, the MEL may refer to a section of the appropriate document; (e.g. to the cabin crew members, such as a operations manual or cabin crew

manual; to the maintenance crew, such as an aircraft maintenance manual, maintenance organization exposition etc

5. It is not acceptable to only reference the announcement or relevant ACs or similar documents, as these documents may not be carried on board the aircraft and could be subject to misinterpretation. The objective is to provide personnel with clear, concise direction on how they are to proceed. Where the MMEL column states "*As required by Operating Requirements*", this wording shall not appear in the MEL; rather, a synopsis of the regulation shall appear. (Appendix 2 of this AC contains some of these MMEL items for reference.)

viii. Operations Manual Procedures

The operator must establish procedures in the operations manual for the use and guidance of crew members when using the MEL. The procedures must align with those in the Maintenance Organization Exposition.

h. Rectification Interval Categories

i. The maximum time an aircraft may be operated between the deferral of an inoperative item and its rectification will be specified in the MEL. Non-safety related equipment such as reading lights and entertainment units need not be listed. However, if they are listed, they must include a rectification interval category. These items may be given a “D” category rectification interval provided any applicable (M) procedure (in the case of electrically supplied items) is applied – refer to paragraph 2.5.2 of this appendix.

ii. The Rectification Interval Categories are defined in the MMEL as follows:

1. Category A

No standard interval is specified, however, items in this category shall be rectified in accordance with the conditions stated in the MMEL. Whenever the time interval is specified in calendar days, it shall start at 00:01 on the calendar day following the day of discovery

2. Category B

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

3. Category C

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

4. Category D

   Items in this category shall be rectified within 120 consecutive calendar days, excluding the day of discovery.

i. Deferral of Items

   i. Procedures for the deferral of MEL items should be included as part of the operator's Maintenance Organization Exposition (MOE). The operator should ensure that the aforementioned procedures in the MOE are referenced or copied in the MEL and/or the Operations Manual.

   ii. Requirements

   These procedures comprise a method for:

   1. deferral and/or rectification of inoperative equipment;
   2. placarding requirements as per the MEL;
   3. dispatching of aircraft with deferred MEL item(s);
   4. using a remote deferral system;
   5. controlling categorized times; and
   6. training of company personnel who are responsible for MEL compliance procedures.

   iii. Review of Deferred Items

   The operator should establish procedures whereby the Maintenance and Flight Departments periodically review the deferred items, in order to ensure that any accumulation of deferred items neither conflict with each other nor present an unacceptable increase in flight or cabin crew workload. Notwithstanding the categorization of item rectification intervals, it should be the aim of each MEL document holder to ensure that inoperative items are repaired as quickly as possible

j. Placarding

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

indicator(s) related to inoperative unit(s) or component(s) should be clearly placarded. While the MEL for some items may require specific wording, the majority of items leave the placard wording and location to be determined by the operator. The operator shall provide the capability and instructions to the flight crew to ensure that the placard is in place prior to the aircraft being dispatched.

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

i. Requirements to Placard/Placard Control

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

ii. Placard Criteria

Placards should be self-adhesive. The placard may be in two parts. Part One should list a description of the defect and the defect control number and should be attached to the log book for crew reference. Part Two should list the system affected and the defect control number and be fixed in the appropriate location. An MEL control sheet attached to the log book could serve the same purpose as Part One above.

iii. Multiple Placards

If more than one placard is required for an MEL item, provision should be made to ensure that all placards are removed when the defect is cleared

iv. Temporary Placards

If a defect occurs at a base where maintenance personnel are not available, the flight or cabin crew may install a temporary placard as required by the MEL. The aircraft may continue on a planned itinerary to a base where maintenance will rectify or re- defer in accordance with the approved deferral system.

k. Dispatch

"Dispatch" for the purpose of this AC refers to the commencement of flight, which is defined as “the point when an aircraft begins to move under its own power for the

purpose of preparing for take-off." In the case of a helicopter, it refers to the moment the helicopter commences air or ground taxi. The MEL is approved on the basis that equipment will be operative for flight unless the appropriate MEL procedures have been carried out. The operator's MEL should include procedures to deal with any failures which occur between the start of taxi or push back and take-off brake release. Any failure which occurs after take-off commences should be dealt with as an in-flight failure, by reference to the appropriate section of the Aircraft Flight Manual, if necessary

i. Operational and Maintenance Items

1. Any item of equipment in the MEL which, when inoperative would require an operational or maintenance procedure to ensure an acceptable level of safety, should be so identified in the "remarks" or "exceptions" column of the MEL. This will normally be "(O)" for an operational procedure, or "(M)" for a maintenance procedure. (O)(M) means both operational and maintenance procedures are required (see paragraph 14(d) of this AC).
2. (O) Items
    a. Aircraft with inoperative equipment requiring an operational procedure may be returned to service following completion of the required MEL procedure for deferral.
    b. Operational procedures are carried out by qualified crew members (see paragraph 14(b) of this AC).
3. (M) Items
    a. Aircraft with inoperative equipment requiring a maintenance procedure may be returned to service following completion of the required MEL procedure for deferral.
    b. Maintenance procedures are accomplished by maintenance personnel (see paragraph 14(c) of this AC).

l. Training

i. Training Programme – Ground Personnel

Operators should develop an MEL training programme for ground personnel, to be included in the General Maintenance Manual (GMM) and Operations Manual, as appropriate, which must be approved prior to an operator receiving approval to operate with an MEL. The training should include those sections of the MME/Operations Manual procedures dealing with the use of the MEL, placarding of inoperative equipment, deferral procedures, dispatching, and any other MEL related procedures. Ground personnel include dispatchers and maintenance engineers.

ii. Training Programme – Crew Members

Operators should provide crew members with MEL training and should detail such training in their Operations Manual. The training should include the purpose and use of an MEL, instruction on company MEL procedures, elementary maintenance procedures, and Pilot-In-Command (PIC) responsibility. Crew members include pilots, flight engineers, and cabin

Appendix 2

Minimum Equipment List (MEL) Alleviation Items

1. INTRODUCTION
    a. Minimum Equipment List (MEL) approved by the Civil Aviation Authority shall be based upon, but not less restrictive than, the relevant Master Minimum Equipment List (MMEL).
    b. For certain equipment, the Civil Aviation Authority of Thailand, after considering the specific nature of the local operating environment, may have a local alleviation policy for safety purpose. Besides, certain items in the MMEL may be specified with *"As required by Regulations"* or *"As required by the Authority"*. Operators, when compiling their MEL should specify clearly any limitations as required by CAAT regulations on those relevant items such that dispatch of the aircraft could be allowed.
    c. The item list under paragraph 2 of this appendix specifies CAAT alleviation policy for items that would fall into the situation as described in paragraph 1.2.
    d. The listed rectification/repair intervals shall be used when compiling the operator's MEL. If there are differences in rectification/repair intervals between those as listed and those specified in the respective MMEL, the more restrictive intervals shall be used.
    e. Rectification/repair intervals for the equipment as stipulated by the relevant regulations including ACs should be classified as Category A with applicable time limitations specified at the Remarks or Exceptions areas. No deviation from those intervals is allowed without prior approval from the Civil Aviation Authority.

ATA 22 Autoflight

Summary of the guidance items:

Item	ATA
Autopilot	22-10-1
Flight Director	22-10-2
Navigation Database	22-71-1

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 22 Autoflight					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
22-10-1	Autopilot (or Autopilit Channel)				
22-10-1A	(Other than CAT)	C	-	0	(M) May be inoperative provide: (O) (a) Affected autopilot/channel is deactivated, and (b) Affected autopilot/channel is not part of the equipment required for intended operation. **Procedures** (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.)

ATA Chapter 22 Autoflight				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
22-10-1B (CAT)	C	-	1	(M) Any in excess of one may be (O) inoperative provided: (a) Affected autopilot/channel is deactivated, and (b) Affected autopilot/channel is not part of the equipment required for intended operation **Procedures** See 22-10-1A
22-10-1C (CAT)	B	-	0	(M) May be inoperative provided: (O) (a) Any increase in crew workload caused by the affected autopilot/channel has been considered for intended operation, (b) Operations are conducted under VFR for single pilot operations, (c) Affected autopilot/channel is deactivated, and (d) Affected autopilot/channel is not part of the equipment required for intended operation. **Procedures** See 22-10-1A

ATA Chapter 22 Autoflight				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
22-10-1-1 Autopilot Functions/Modes **22-10-1-1A** (CAT)				(M) One or more functions/modes may (O) be inoperative provided: (a) Any increase in crew workload caused by the inoperative functions/modes has been considered for intended operation, (b) Inoperative functions/modes are deactivated as applicable, (c) Autopilot heading mode and altitude hold are operative, and (d) Affected functions/modes are not part of the equipment required for intended operation. **Procedures** (M) 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. (O) See 22-10-1A

Additional considerations:

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.
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 behavior 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).

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 22 Autoflight					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
22-10-2 22-10-2A	Flight Director Symbols (FD Bars)	C	-	-	(O) May be inoperative provided: (a) Affected flight director is not part of the equipment required for intended operation, and (b) Associated autopilot, if affected, is considered inoperative (Refer to 22-10- 1). **Procedures** (O) To specify any applicable restriction for operations requiring a specific approval (e.g. PBN/MNPS, RVSM, Low Visibility Operations (LVO), etc.)

Additional considerations:

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

A shorter rectification interval or a minimum of one FD bars operative may be required 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. Additional restrictions due to considerations on the autopilot items may also be applicable in case of integrated architecture.

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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 22 Autoflight				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
22-71-1 Navigation Database				Note: A database which is out of date is considered to be inoperative.
22-71-1A	C	-	0	(O) One or more may be inoperative for the intended flight route where conventional (non-RNAV/RNP) 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, and (c) Radio navigation aids, which are required to be flown for departure, arrival and approach procedures are manually tuned and identified. **Procedures** (O) To give guidance reference to established operator's procedure to ensure the dispatch conditions requirements are met prior to release of the aircraft.

ATA Chapter 22 Autoflight				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
22-71-1B	C	-	1	(O) 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/RNP, and (b) The operative database is available and used by the flight crew member(s) responsible for navigation, and (c) Radio navigation aids, which are required to be flown for departure, arrival and approach procedures are manually tuned and identified. **Procedures** (O) To give guidance reference to established operator's procedure to ensure dispatch conditions requirements are met prior to release of the aircraft.

ATA Chapter 22 Autoflight				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
22-71-1C	A	-	0	(O) One or more may be out of date for a maximum of 10 calendar days provided: (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, (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 flight route, and
(continued)				

ATA Chapter 22 Autoflight				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				(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. **Procedures** (O) To give guidance reference to established operator's procedure to ensure the dispatch conditions requirements are met prior to release of the aircraft.

Additional considerations:

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

(a) 22-71-1B applicable when RNAV/RNP operations are not conducted (C rectification interval), and

(b) 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 customized 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 navaids are automatically tuned by using the database data.

ATA 23 Communications

Summary of the guidance items:

Item	ATA
Headset	23-10-1
Audio Selector Panel	23-10-2
Flight Crew Compartment Speaker	23-10-3
HF Communications	23-11-1
VHF Communications	23-12-1
Audio Selector Panel Frequency Controls and Indications	23-13-1
Datalink (MC)	23-20-1
Public Address System	23-30-1
Datalink	23-30-2
Flight Crew Interphone System (Flight Crew Compartment Intercommunication) (MC)	23-40-1
Crew Member Interphone System (MC)	23-40-2
Flight Crew Compartment Door Surveillance System (MC)	23-70-1
Cockpit Voice Recorder (MC)	23-71-1

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-10-1 Headset 23-10-1A	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.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	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. **Procedures** (M) Check of the failure of the switch in open (non-transmitting) position or deactivation in open position.

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 identification 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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-10-3	Flight Crew Compartment Speaker				
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. **Procedures** (O) To provide alternate procedures for the use of headsets, as appropriate.

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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-11-1 HF Communications				
23-11-1A	D	-	-	Any in excess of those required for the intended flight route, may be inoperative.
23-11-1B	C	-	1	(O) Any in excess of one may be inoperative provided: (a) SATCOM air-ground communications with Air Traffic Service Providers (ATSPs) are available for the intended flight 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.
(continued)				

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				Note: The intended flight route corresponds to any point on the route including diversions to reach alternate aerodromes required to be selected by the operational rules. **Procedures** (O) To provide alternate communication procedures. SATCOM is to be used only as a backup to normal HF communications unless otherwise authorised by the appropriate Air Navigation Service Provider(s)
23-11-1C	A	-	1	(O) Any in excess of one may be inoperative for a maximum of 3 calendar days provided alternate communication procedures are established and used. **Procedures** (O) To provide alternate communication procedures. When the route enters airspace for which an In Flight Blind Broadcast Procedure exists, select the appropriate I.F.B.B. VHF frequency and apply the procedure.

Additional considerations:

When relief if 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 antenna or other antenna installations of equivalent reliability are used.

23-11-1B & 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.

Aircraft applicability: Aeroplanes & Helicopters

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

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-12-1C (CAT)	C	-	2	(O) Any in excess of two, may be inoperative provided alternate procedures are established and used, if applicable. **Procedures** See 23-12-1B.

Additional considerations:

When relief if 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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-13-1	Audio Selector Panel Frequency Controls and Indications				
23-13-1-1					
23-13-1-1A	Frequency Transfer Light	C	-	0	May be inoperative.
23-13-1-2					
23-13-1-2A	Frequency Transfer Switch	C	-	0	May be inoperative.
23-13-1-3					
23-13-1-3A	Frequency Selector Knob	C	-	2	Any in excess of two may be inoperative.
23-13-1-4					
23-13-1-4A	Frequency Indication	C	-	2	Any in excess of two may be inoperative.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-20-1 Datalink (MC)				
23-20-1A	C	-	0	(O) May be inoperative provided alternate procedures are established and used. **Procedures** (O) 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 procedures do not require its use.

Additional considerations:

Option 23-20-1B is applicable for aircraft not required to have datalink installed whenever aircraft is operated below FL285.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-30-1 Public Address (PA) System				
23-30-1A	D	-	-	Any in excess of those required may be inoperative provided procedures do not require their use.
23-30-1B	C	-	-	(O) Any in excess of those required may be inoperative provided alternate procedures are established and used.
23-30-1C	B	-	0	(O) May be inoperative provided: (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. **Procedures:** (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.

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-30-1D	D	-	O	(O) May be inoperative provided operations are conducted in cargo only configuration with all occupants in the Flight Crew Compartment. **Procedures:** (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: (a) Operations are conducted in cargo only configuration, and (b) Flight crew compartment/cabin interphone system (including audio and visual alerting system) is operative, and (c) Alternate procedures are established and used. **Procedures:** (O) To provide alternate normal and emergency communication procedures and/or operating restrictions as appropriate for the intended operations.

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-30-1F	D	-	0	(O) May be inoperative provided: (a) Operations are conducted with no passengers, (b) All occupants are in the flight crew compartment.

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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-40-1	Flight Crew Interphone System (Flight Crew Compartment Intercommunication)				
23-40-1A		D	-	-	Any system in excess of those required may be inoperative.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-40-2	Crew Member Interphone System				
23-40-2A		D	-	-	Any in excess of those required may be inoperative provided procedures do not require their use.
23-40-2B		C	-	-	(O) Any in excess of those required may be inoperative provided alternate procedures are established and used.
23-40-2-1	Flight Crew Compartment to Cabin Cabin to Flight Crew Compartment Interphone				
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.
	(Continued)				

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
	(Continued)				(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
23-40-2-2	Flight Crew Compartment Handset (if installed)				
23-40-2-2A		C	-	0	(O) May be inoperative provided: (a) Flight crew compartment to cabin communication is operative, and (b) Alternate procedures are established and used. **Procedures:** (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.

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-40-2-3	Cabin to Cabin Interphone				
23-40-2-3A		C	-	0	(O) May be inoperative provided alternate procedures are established and used. **Procedures:** (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.
23-40-2-4	Flight Crew Compartment and/or Cabin to Crew Rest Facility/Bunk				
23-40-2-4A		C	-	0	(O) May be inoperative provided: (a) Public address system is operative, and (b) Alternate procedures are established and used.
	(continued)				

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				**Procedures:** (O) To provide alternate normal and emergency communication procedures between affected crew members and/or operating restrictions as appropriate for the intended operations.
23-40-2-4B	C	-	0	(O) May be inoperative provided: (M) (a) Affected crew rest facility/bunk is not occupied, and (b) Affected crew rest facility/bunk is placarded 'DO NOT OCCUPY'. **Procedures:** (O) To provide alternate normal and emergency communication procedures between affected crew members and/or operating restrictions as appropriate for the intended operations. (M) To give guidance reference for placarding the affected area.

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-40-2-5 Alerting System (Audio/Visual) **23-40-2-5A**	C	-	-	(O) May be inoperative provided: (a) Flight crew compartment call audio alerting system is operative, (b) Public Address system is operative, and (c) Alternate procedures are established and used. Note: 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). **Procedures:** (O) To provide alternate normal and emergency communication procedures for contacting crew members as appropriate for the intended operations.

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-40-2-6	Cabin Handset				
23-40-2-6A		C	-	-	(O) One or more may be inoperative provided: (a) At least 50 % of the cabin handset is operative, (b) One handset is operative at each pair of floor level exit door, (c) Operative handsets are located at operative cabin crew seats, and (d) Alternate procedures are established and used. **Procedures:** (O) To provide alternate normal and emergency communication procedures as appropriate for the intended operations.
23-40-2-6B		C	-	-	(O) May be inoperative at any non-required cabin crew seat.
23-40-2-7	Flight Crew to Ground/Ground to Flight Crew Interphone (MC)				

ATA Chapter 23 Communications				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
23-40-2-7A	C	1	0	(O) May be inoperative provided alternate procedures are established and used. Procedures: (O) To provide alternate communication procedures between flight crew compartment and ground as appropriate for the intended operations.

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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications					
1.System and Sequence Number ITEM		2. Rectification Interval	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 alternate procedures are established and used.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 23 Communications					
1.System and Sequence Number 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: (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. Note: This alleviation is not applicable to Flight data and cockpit voice combination recorders. For those combined systems, see the entries for combination recorders in item 31-31-2.

Additional considerations:

N/A

ATA 25 Equipment/Furnishings

Summary of the guidance items:

Item	ATA
Flight Crew Seats	25-11-1
Observer Seats	25-11-2
Passenger Seats	25-21-1
Cabin Crew Seat Assembly (single or dual position)	25-21-2
Exterior Lavatory Door Ashtrays	25-40-1
Interior Lavatory Ashtrays	25-40-2
Escape Slides	25-60-1
Independent portable lights	25-60-2
Protective Breathing Equipment (PBE)	25-60-3
Megaphones	25-60-4
Life rafts	25-60-5
Survival Equipment	25-60-6
Emergency Flotation Equipment	25-60-7
Crash Axes and Crowbars	25-61-1
First-Aid Kits	25-62-1
Emergency Medical Kits	25-62-2
Emergency Locator Transmitter	25-63
Life jackets	25-64-1

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings						
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch		5. Remarks or Exceptions
25-11-1	Flight Crew Seats					
25-11-1-1	Power Adjustments					
25-11-1-1A		D	-	0		May be inoperative for each flight crew member.
25-11-1-2	Manual Adjustments					
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 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 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 the affected seat is secured in a position acceptable to the flight crew member.
	(continued)					

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				Note: If an inoperative armrest will hinder an emergency evacuation or any other flight duties it should be removed. **Procedures** (M) To give guidance reference for a practical means of securing the seat position.
25-11-2 Observer Seats				
25-11-2A	D	-	0	One or more may be inoperative provided the affected seat is not occupied and is correctly stowed.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopters

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

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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-21-1	Passenger Seats				
25-21-1-1	Recline Functions				
25-21-1-1A		D	-	-	(M) One or more may be inoperative and the affected seat occupied provided the seat is secured in the take-off and landing position. **Procedures:** (M) To give guidance reference for a practical means of securing the seat in the take-off and landing position.
25-21-1-1B		C	-	-	One or more may be inoperative and the affected seat occupied provided the seat back is immovable in the take-off and landing position.

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)

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-21-1	Passenger Seats				
25-21-1-2	Underseat Baggage Restraining Bars				
25-21-1-2A		D	-	-	(O) May be inoperative or missing provided: (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 and used to alert cabin crew of inoperative restraining bars. **Procedures:** (O) To ensure the cabin crew is briefed about affected seat position.

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 under seat baggage restraining bar affects the integrity of the seat.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-21-1	Passenger Seats				
25-21-1-3	Passenger Seat Armrests with Recline Control Mechanism (MC)				
25-21-1-3A		D	-	-	(M) May be inoperative, damaged or missing and the affected seat occupied, provided: (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. **Procedures** (M) To give guidance reference for a practical means of securing the seat in the upright position.

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-21-1-4	Passenger seat armrests without recline control mechanism (MC)				
25-21-1-4A		D	-	-	May be inoperative, damaged or missing, and the affected seat occupied provided: (a) The affected armrest does not block an emergency exit, and (b) The affected armrest is not in such a position that it restricts any passengers from access to the aircraft aisle.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-21-1	Passenger Seats				
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: (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. **Procedures:** (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 the affected seat is immovable in take-off and landing position.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-21-2	Cabin Crew Seat Assembly (single or dual position)				
25-21-2-1	Required Cabin Crew Seat				Note: See definition of 'required cabin crew seat'
25-21-2-1A		B	-	-	(M) One seat or seat assembly may be (O) inoperative provided: a) Inoperative seat or seat assembly is not occupied, b) Cabin crew displaced by inoperative seat occupies the adjacent cabin crew seat or the passenger seat most suitable to perform assigned duties, c) Alternate procedures are established and used for displaced cabin crew, d) Folding type seat is stowed or secured in the retracted position, and e) Where a passenger seat is assigned to the displaced cabin crew it is placarded 'FOR CABIN CREW USE ONLY'.
	(continued)				

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued) **25-21-2-2** Excess Cabin Crew Seat				Note: A seat with an inoperative or missing seat belt or harness is considered inoperative. **Procedures**: (M) to give guidance reference for placarding and securing the folding type seat in the retracted position if failure modes preventing stowage are existing. (O) to give guidance reference for normal, abnormal and emergency procedures affected by cabin crew displacement.

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-21-2-2A (continued)	C	-	0	(M) Seat or seat assembly in excess of (O) requirements and assigned to a cabin crew may be inoperative provided: (a) Inoperative seat or seat assembly is not occupied, (b) Alternate procedures are established and used for displaced cabin crew, (c) Folding type seat is stowed or secured in the retracted position, and (d) Where a passenger seat is assigned to the displaced cabin crew it is placarded 'FOR CABIN CREW USE ONLY'. Note: A seat with an inoperative or missing seat belt or harness is considered inoperative. **Procedures:** (M) To give guidance reference for placarding and securing the folding type seat in the retracted position if failure modes preventing stowage are existing.

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				(O) To give guidance reference for normal, abnormal and emergency procedures affected by cabin crew displacement.
25-21-2-2B	C	-	0	(M) Seat or seat assembly in excess of requirements and not assigned to a cabin crew may be inoperative provided: (a) Inoperative seat or seat assembly is not occupied, and (b) Folding type seat is stowed or secured in the retracted position or removed. Note: A seat with an inoperative or missing seat belt or harness is considered inoperative. **Procedures:** (M) To give guidance reference for placarding and securing the folding type seat in the retracted position if failure modes preventing stowage are existing.

Additional considerations:

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 MEL. 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.

Some cabin configurations may permit more than one required cabin crew seat to be inoperative based on specific justifications.

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

Aircraft applicability: Aeroplanes

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-40-1	Exterior Lavatory Door Ashtrays				
25-40-1A		A	-	0	One or more may be inoperative or missing provided repairs are made within three consecutive calendar days.
25-40-1B		A	-	-	One or more may be inoperative or missing provided: (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) One or more may be inoperative or (O) missing provided: (a) Affected lavatory door is locked closed and placarded to prohibit passengers' entrance, and Repairs are made within ten consecutive calendar days. (b) Affected lavatory is used only by crew members.

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-40-1D	D	-	0	Procedures (M) to provide instructions to lock closed and placard affected lavatory door. (O) to provide procedures to brief crew members. One or more may be inoperative or missing provided flight is non-smoking.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-40-2 Interior Lavatory Ashtrays				
25-40-2A	B	-	0	One or more may be inoperative or missing provided associated lavatory fire- extinguishing system, when installed, is operative.
25-40-2B	D	-	0	(M) One or more may be inoperative or (O) missing provided: (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. **Procedures** (M) to provide instructions to lock closed and placard affected lavatory door. (O) to provide procedures to brief crew members.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-1 Escape Slides **25-60-1A**	-	-	-	One may be inoperative or missing on each deck provided the associated door/exit is considered inoperative. Refer to item 52- 22-xx. Note: Refer to item 25-60-5 when escape slide is used as raft.

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).

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-2 25-60-2A	Independent portable lights	C	-	-	May be inoperative or missing provided each required crew member has an operative independent portable light 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.

Additional considerations:

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.

Aircraft applicability: Aeroplanes

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-3	Protective Breathing Equipment (PBE)				
25-60-3A		D	-	-	(M) Any in excess of those required may (O) be inoperative or missing provided: (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. Note: Inoperative PBE units may be subject to dangerous goods requirements. Procedures: (M) To provide instructions to placard the inoperative PBE unit and its installed location, to secure the PBE unit in an approved stowage.
	(continued)				

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				(O) To provide procedures to alert crew members.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-4 **25-60-4A**	Megaphones	D	-	-	(M) Any in excess of those required may (O) be inoperative or missing provided: (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. **Procedures:** (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.

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).

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-5 Life rafts **25-60-5A**	D	-	-	Note: For life raft used as slide, refer to 25- 60-1. (O) May be inoperative or missing provided: (a) Extended overwater flights are not conducted, and (b) Procedures are established and used to alert crew members of inoperative or missing equipment. **Procedures:** (O) To provide procedures to alert crew members.

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-5B	C	-	-	(O) Any in excess of those required for (M) the intended flight may be inoperative or missing for extended overwater flights provided: (a) Required distribution is maintained, (b) noperative life raft and its installed location are placarded inoperative, (c) (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. **Procedures:** (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.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-6 Survival Equipment **25-60-6A**	D	-	-	Note: For ELT(S), refer to item 25-63-3. (O) Any in excess of those required may (M) be missing or inoperative 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. **Procedures:** (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.

Additional considerations:

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

Aircraft applicability: Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-7	Emergency Flotation Equipment				
25-60-7A	(Other than commercial air transport operations)	D	-	0	Any in excess of those required may be inoperative.
25-60-7B		D	-	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.

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-60-7E (Performance Class 3)	C	-	0	May be inoperative provided: (a) Take-off and landing are not performed over water, and (b) Flight is not conducted over water beyond safe forced landing distance.

Additional considerations:

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

Aircraft applicability: Aeroplanes

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-61-1 Crash Axes and Crowbars 25-61-1A	D	-	-	Any in excess of those required may be inoperative or missing.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-62-1	First-Aid Kits				
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.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-62-2 Emergency Medical Kits				
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 flight to a destination where repairs or replacements can be made but not to exceed a maximum of two calendar days.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-63	Emergency Locator Transmitter (ELT)				
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.
25-63-1 1C	(Aeroplanes)	C	-	1	Any in excess of one may be inoperative.
25-63-1D	(Helicopters)	A	-	0	May be inoperative provided: (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.

ATA Chapter 25 Equipment/Furnishings					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-63-2	Automatically 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.
25-63-2 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)				
25-63-3A		D	-	-	(M) Any in excess of those required may (O) 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.

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
				Procedures (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.

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 attached 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).]

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 25 Equipment/Furnishings				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
25-64-1 Life jackets **25-64-1A**	D	-	-	(M) Any in excess of those required may (O) be inoperative or missing, provided: (a) Required distribution is maintained, (b) Inoperative lifejacket and its installed location are placarded inoperative, (c) Inoperative life jacket is secured out of sight, and (d) Procedures are established and used to alert crew members of inoperative or missing equipment. **Procedures:** (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. (O) To provide procedures to alert crew members.

Additional considerations:

N/A

ATA 26 Fire Protection

Summary of the guidance items:

Item	ATA
Lavatory Smoke Detection System	26-17-1
Hand Fire Extinguishers (MC)	26-24-1
Lavatory Waste Receptacle Fire Extinguishing System	26-25-1

Aircraft applicability: Aeroplanes

ATA Chapter 26 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
26-17-1	Lavatory Smoke Detection System				
26-17-1A		C	-	0	(M) May be inoperative provided: (O) (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. **Procedures** (M) to provide instructions to lock closed and placard the inoperative lavatory. (O) to provide procedures to brief crew members.

ATA Chapter 26 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
26-17-1B		B	-	0	(M) May be inoperative provided: (O) (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 **Procedures** (M) To provide instructions to verify/test the agent bottle of the lavatory waste receptacle fire-extinguishing system. (O) To provide procedures to ensure affected lavatory is visited periodically by the cabin crew and not used for stowage of any inflammable or combustible materials.
26-17-1C	(Aeroplanes with passenger capacity of less than 20)	C	-	0	May be inoperative.

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 Civil Aviation Authority of Thailand 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.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 26 Fire Protection				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
26-24-1 Hand Fire Extinguishers **26-24-1A** (continued)	D	-	-	(M) Any in excess of those required may (O) be inoperative or missing provided: (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. **Procedures** (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.

ATA Chapter 26 Fire Protection				
1.System and Sequence Number ITEM	2. Rectification Interval			
		3. Number Installed		
			4. Number Required for Dispatch	
				5. Remarks or Exceptions
(continued)				(O) To provide procedures to inform crew members.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter 26 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
26-25-1	Lavatory Waste Receptacle Fire- Extinguishing System				
26-25-1A		D	-	0	(M) May be inoperative provided: (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. **Procedures:** (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.

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:

Item	ATA
Inertial Separators - Position Indicating System	30-00-1
Airframe Aerodynamic Surface Ice Protection Monitoring System	30-10-1
Engine Inlet De-icing/Anti-icing Systems Monitoring System	30-21-1
Pitot Heating Failure Indication System	30-31-2
Alternative Windshield Rain Protection Means (e.g. Rain Repellent System, Coating, etc.)	30-40-1
Windshield Heating/De-icing Indicating System	30-41-1
Windshield Wipers	30-42-1
Propeller De-ice/Anti-ice System Monitoring System	30-61-1
Visual Ice Evidence Indication	30-80-1
Ice Detection System	30-80-2

Aircraft applicability: Aeroplanes

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-00-1	Inertial Separators — Position Indicating System				
30-00-1A		B	-	0	May be inoperative provided: (a) operations are not conducted at any time in known or forecasted icing conditions, and (b) Operations are conducted in day VMC. Note 1: Inertial separators includes pneumatic de-icing systems. Note 2: In the absence of any Aircraft Flight Manual definition, icing conditions should be taken as visible moisture or precipitation, when OAT on the ground and for takeoff, or TAT in flight is 10 °C or below

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.

Condition b) on day VMC may be alleviated based on demonstration of the capability of facing inadvertent encounter of icing conditions during aircraft certification. Aircraft expected types of operation have to be taken into account with regards to the risk exposure to unexpected icing conditions (e.g. FL limitation).

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-10-1	Airframe Aerodynamic Surface Ice Protection Monitoring System				
30-10-1A		B	-	0	One or more may be inoperative provided operations are not conducted at any time in known or forecasted icing 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.

In the absence of any Aircraft Flight Manual definition, icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +5°C.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 30 Fire Protection						
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions	
30-21-1	Engine Inlet De- icing/Anti-icing System					
30-21-1A	Monitoring System	B	-	-	May be inoperative provided operations are not conducted at any time in known or forecasted icing 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.
In the absence of any Aircraft Flight Manual definition, engine icing conditions should be taken as visible moisture or precipitation, when the OAT is less than +10°C.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-31-2 30-31-2A	Pitot Heating Failure Indication System	-	-	-	May be inoperative provided the associated pitot heating system is considered inoperative.

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.

Aircraft applicability: Aeroplanes

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-40-1	Alternative Windshield Rain Protection Means (e.g. Rain Repellent System, Coating, etc.)				
30-40-1A		C	-	0	May be inoperative provided: (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. Note: Take-off and destination aerodromes include any take-off and destination alternate aerodromes required by the operational rules.
30-40-1B		D	-	0	May be inoperative provided windshield wipers are 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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 30 Fire Protection					
1.System and Sequence Number 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: (a) The indicating system associated with the pilot handling/flying station is operative, and (b) An alternate procedure is established and used to ensure correct operation of the affected windshield heating system. **Procedures** (O) To give guidance to perform a pre-flight check of the affected heating system.
30-41-1B		C	-	0	May be inoperative provided operations are not conducted into known or forecasted icing conditions.

Additional considerations:

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.

30-41-1B This option is available only if the windshield heating system does not contribute to structural integrity.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-42-1	Windshield Wipers				
30-42-1A	(Aeroplanes)	C	-	0	May be inoperative provided: (a) No precipitation is forecasted at the take-off and destination aerodromes, and (b) Affected wiper is not part of the equipment required for the intended operation. Note: Take-off and destination aerodromes include any take-off and destination alternate aerodromes required by the operational rules.
30-42-1 1B	(Helicopters)	C	-	-	One or more may be inoperative provided the helicopter is not operated in known or forecast precipitation that requires their use.
30-42-1C		D	-	0	(O) May be inoperative provided an (M) alternative windshield rain protection mean (e.g. Rain Repellent System, Coating, etc.) is installed and verified operative. **Procedures** (O) To provide guidance to check correct (M) operation of the system.

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-42-1-1	High Speed Function				
30-42-1-1A		C	-	0	May be inoperative provided the associated low speed function is operative.
30-42-1-2	Low Speed Function				
30-42-1-2A		C	-	0	May be inoperative provided 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: (a) It does not affect operation of the wipers, and (b) It is acceptable to the affected flight crew member(s).

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 accounts for the specific helicopters mission profile (hover capability).

30-42-1C allows dispatch with windshield wipers inoperative when an equivalent system is installed (rain repellent, etc.) provided it has been demonstrated as efficient as the wipers in the certified kind of operations (low speed, light rain, 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.

Aircraft applicability: Aeroplanes

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-61-1 30-61-1A	Propeller De- ice/Anti-ice System	B	-	0	One or more may be inoperative provided operations are not conducted at any time in known or forecasted icing 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 MEL. Associated dispatch conditions and rectification interval may then become applicable.
In the absence of any Aircraft Flight Manual definition, engine icing conditions should be taken as visible moisture or precipitation when the OAT is less than +10°C.

Aircraft applicability: Aeroplanes

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-80-1	Visual Ice Evidence Indication				
30-80-1A		B	-	0	May be inoperative provided operations are not conducted in known or forecasted icing conditions
30-80-1B		D	-	0	May be inoperative provided procedures are not dependent upon its use.
30-80-1-1	Visual Ice Evidence Indication Lighting system				
30-80-1-1A		D	-	0	May be inoperative for daylight operations provided procedures are not dependent upon its use.
30-80-1-1B		B	-	0	(O) May be inoperative for night operations provided an alternate means is used to illuminate the affected indicator. **Procedures** (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.

Additional considerations:

30-80-1A: In the absence of any Aircraft Flight Manual definition, icing conditions should be taken as visible moisture or precipitation when the OAT is less than +5°C.

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

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 30 Fire Protection					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
30-80-2	Ice Detection System				
30-80-1A	System certified as an Advisory System	D	-	0	May be inoperative provided procedures do not require its use.
30-80-1B	System certified as a Primary Detection System	C	-	0	(O) May be inoperative provided alternate procedures are established and used. **Procedures:** (O) To provide a procedure to the crew to determine conditions where ice protection system must be activated manually.

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:

(a) 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.
(b) 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.

ATA 31 Indicating/Recording Systems

Summary of the guidance items:

Item	ATA
Clock	31-21-1
Flight Data Recorder (FDR)	31-31-1
Flight Data and Cockpit Voice Combination recorder	31-31-2
Quick Access Recorder (or any equivalent Flight Data Monitoring equipment)	31-31-3
Flight Data Recorder (FDR) Required Parameters	31-31-4

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 31 Indicatinf/Recording Systems				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
31-21-1 Clock 31-21-1A	C	-	0	May be inoperative provided an accurate timepiece is operative in the flight crew compartment indicating the time in hours, minutes and seconds.

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.

If the above is verified and 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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 31 Indicatinf/Recording Systems				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
31-31-1 Flight Data Recorder (FDR)				
31-31-1A	D	-	-	Any in excess of those required may be inoperative provided the FDR parameters are not required for monitoring purpose.
31-31-1B	A	-	0	May be inoperative provided: (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. Note 1: This alleviation is not applicable to flight data and cockpit voice combination recorders. For those combined systems, see the entries for flight data and cockpit voice combination recorders in item 31-31-3.
(continued)				

ATA Chapter 31 Indicatinf/Recording Systems				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				Note 2: The flight data recorder is considered to be inoperative when any of the following conditions exist: (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 (ii) The need for maintenance has been identified by the system monitors, where available, and the failure origin has not been identified; or (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). Note 3: Where improper recording affects 5 % of the required parameters or less, refer to item 31-31-4.

ATA Chapter 31 Indicatinf/Recording Systems				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
31-31-2A	A	-	0	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.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 31 Indicatinf/Recording Systems					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
31-31-2	Flight Data and Cockpit Voice Combination Recorder				
31-31-2A		D	-	-	(O) Any function may be inoperative (M) provided: (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: (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. Note 1: A flight data and cockpit voice combination recorder is a single flight recorder that combines the functions of flight data recorder and of a cockpit voice recorder.
	(continued)				

ATA Chapter 31 Indicatinf/Recording Systems				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				Note 2: The flight data recorder is considered to be inoperative when any of the following conditions exist: (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 (ii) (ii) The need for maintenance has been identified by the system monitors, where available, and the failure origin has not been identified; or (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. Note 3: Where improper recording affects 5 % of the required parameters or less, refer to item 31-31-4.

ATA Chapter 31 Indicatinf/Recording Systems				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
31-31-2C	A	2	1	One of the two required flight data and cockpit voice combination recorders may be inoperative for a maximum of 10 calendar days.

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 31 Indicatinf/Recording Systems					
1.System and Sequence Number ITEM		2. Rectification Interval	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)				
31-31-3A		C	1	0	(O) May be inoperative when used for (M) Flight Data Monitoring (FDM) purposes, provided approved alternate procedures, if appropriate to other programmes using associated data, are established and used. **Procedures** (O) To provide guidance for alternate (M) procedures associated to data monitoring programmes, as applicable.
31-31-3B		D	1	0	May be inoperative provided procedures do not require its use.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 31 Indicatinf/Recording Systems					
1.System and Sequence Number 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				
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.

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
Flight Crew Compartment Lighting	33-10-1
Passenger Compartment Lighting	33-20-1
Cabin Signs ('Fasten Seat Belt', 'No Smoking' Signs, Return to Cabin, NO PED)	33-20-2
Navigation/Position Lights	33-41-1
Anti-Collision Light System	33-42-1
Wing illumination lights	33-43-1
Landing Lights	33-44-1
Cabin Emergency Lighting (Aeroplanes)	33-50-1
Cabin Emergency Lighting (Helicopters)	33-50-1
Exterior Emergency Lighting Systems	33-50-2

Aircraft applicability: Aeroplanes & Helicopter

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

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.).

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 33 Lights					
1.System and Sequence Number 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 passengers are not carried.
33-20-1B	(Aeroplanes)	C	-	-	Individual lights may be inoperative provided: (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: (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.

Additional considerations:

If the cabin illumination is used to charge floor mounted emergency photoluminescent lighting system, additional conditions on a minimum of lighting to be provided may be required.

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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 33 Lights					
1.System and Sequence Number 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) One or more may be inoperative (O) provided affected passenger seats, crew member seats or lavatories from which at least one cabin sign is not readily legible are blocked and placarded 'DO NOT OCCUPY'. **Procedures:** (M) to give guidance reference for a (O) practical mean of prohibiting the use of the affected seat. (O) To alert the crew about affected seats/lavatories.
33-20-2B	(continued)	C	-	-	(O) One or more may be inoperative and the affected passenger seats, crew member seats or lavatories may be occupied provided: (a) The passenger address system is operative and can be clearly heard throughout the cabin during flight, and (b) A procedure is used to notify passengers as appropriate.

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)					**Procedures:** (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.
33-20-2C		C	-	-	May be inoperative provided passengers are not carried.
33-20-2-1	Aural Tone Function	C	-	0	(O) May be inoperative provided 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: (a) Manual control function is operative, and (b) An alternate procedure is established and used.

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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-41-1	Navigation/Position Lights				
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	-	-	(O) One or more may be inoperative for a single night flight when departing from an offshore or remote installation provided: (a) The appropriate Air Navigation Service Provider (ANSP) has been informed before departure, (b) The anti-collision light system is operative, and (c) The landing light system is operative. **Procedures:** (O) To provide guidance to the crew for operations of anti-collision and landing lights.

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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-42-1	Anti-Collision Light System				Note: This guidance may be subject to additional restrictions in accordance with the applicable Rules of the Air.
33-42-1-1	Fuselage Lights (Beacon or Strobe Type)				Note: 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.
33-42-1-1A	(Aeroplanes)	C	-	1	(O) Either the upper or the lower fuselage lights may be inoperative provided an acceptable number of white wing-tip strobe lights are operative. **Procedures:** (O) to provide guidance to the crew for operations of anti-collision and strobe lights.
33-42-1-1B	(Aeroplanes)	C	-	0	(O) May be inoperative for daylight operations provided all white wing-tip strobe lights are operative.
	(continued)				

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
	(continued)				**Procedures:** (O) To provide guidance to the crew for operations of anti-collision and strobe lights.
33-42-1-1C	(Helicopters)	C	-	1	Any in excess of one may be inoperative.
33-42-1-1D	(Helicopters)	A	-	0	(O) One or more may be inoperative for a single night flight when departing from an offshore or remote installation provided: (a) The appropriate Air Navigation Service Provider (ANSP) has been informed before departure, (b) The navigation light system is operative, and (c) The landing light system is operative. **Procedures:** (O) To provide guidance to the crew for operations of remaining lights.
33-42-1-1 1E	(Helicopters and other than Commercial Air Transport operations of aeroplane)	B	-	0	May be inoperative for daylight operations.
33-42-1-2	Wing-Tip/Tail Strobe Lights (if installed)				

ATA Chapter 33 Lights				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-41-1-2A	C	-	0	One or more may be inoperative.

Additional considerations:

An anti-collision light system is required for Commercial Air Transport (Part-CAT) operations and for other than Commercial Air Transport (Part-NCC) 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.

33-42-1-1A:

The acceptable number of white strobe lights has to be defined by the applicant according to the requirements applicable for anti-collision light system.

Aircraft applicability: Aeroplanes

ATA Chapter 33 Lights				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-43-1 Wing Illumination Light				
33-43-1A	D	-	0	One or more may be inoperative for daylight operations.
33-43-1B	C	-	0	One or more may be inoperative provided operations are not conducted at any time into known or forecast icing conditions.
33-43-1C	B	-	0	(O) One or more may be inoperative Provided a portable lamp/light of Adequate capacity for wing and/or control surface inspection is available and used for night operations in icing conditions. **Procedures** (O) To provide crew procedures in accordance with the above conditions.
33-43-1D	C	-	0	One or more may be inoperative provided ground de-icing procedures do not require their use.

Additional considerations:

Further relief might be granted when the wing illumination lights are not required to ensure

ice accretion monitoring (flight/ground).

33-43-1D: For passenger and cargo aeroplanes where view of the wing surfaces from the flight crew compartment is restricted (due to the sweep of the aircraft wing) or for cargo aircraft where access to the aircraft cabin to view ice formation on the wings is not possible, the wing illumination lights may be inoperative provided ground deicing procedures do not require their use.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-44-1	Landing Lights				
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. **Procedures:** (O) To provide guidance to the crew for operations of remaining lights

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 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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-44-1	Cabin Emergency Lighting				
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. Note: 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 Marking Signs				
33-50-1-2A		C	-	-	Up to 50 % of the bulbs/LEDs may be inoperative in one or more signs provided the sign remains legible.
33-50-1-2B		-	-	-	One may be inoperative provided The associated door/exit is Considered inoperative. Refer to item 52-22.
	(continued)				

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
	(continued)				Note: If any twin overwing exits are served by a single sign, both Exits should be considered inoperative.
33-50-1-3	EXIT Locator Signs				
33-50-1-3A		C	-	-	Up to 50 % of the bulbs/LEDs may be inoperative in one or more signs provided the sign remains legible.
33-50-1-3	Exit Area Lighting				
33-50-1-3A		-	-	-	May be inoperative provided the associated door/exit is considered inoperative. Refer to item 52-22.
33-50-1-4	Floor Proximity Lighting (Electrical or photo luminescent systems)				
33-50-1-4-1	Individual Lights/ strips				

ATA Chapter 33 Lights				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-50-1-4-1A	B	-	-	Lights/strips may be inoperative provided: (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) A minimum of lights/strips evenly distributed along each aisle axis to provide required escape guidance are operative.
33-50-1-4-2 EXIT Markers/Identifiers				
33-50-1-4-2A	C	-	-	Up to 50 % of the bulbs/LEDs may be inoperative in one or more signs provided the sign remains legible.
33-50-1-4-2B	-	-	-	ne may be inoperative provided the associated door/exit is considered inoperative. Refer to item 52-22.

Additional considerations:

The proposed guidance is provided as examples of relief generally accepted in MELs and should be validated on particular cabin design configuration. Different levels of relief may be validated through test showing compliance to requirements even in a degraded configuration. Such relief could then be granted 'C' interval relief.

Item 33-50-1-2 Cabin Emergency Lighting - EXIT Marking Sign covers those lights required by

air transport – aeroplane.

Item 33-50-1-3 Cabin Emergency Lighting - EXIT locator Sign covers those lights required by air transport – aeroplane.

Item 33-50-1-4-1 Floor Proximity Lighting (Electrical or photoluminescent systems) - Individual Lights/ strips option 33-50-1-4-1A condition (b) & (c) are example proposals that require validation based on the specific system design and installation. The objective is to ensure the minimum certification requirements in terms of escape guidance are still complied with. If demonstrated by adequate substantiations, a rectification interval C could be granted.

Item 33-50-1-4-2 Floor Proximity Lighting (Electrical seat mounted or photo luminescent floor mounted systems) EXIT Markers/Identifiers covers those lights required by air transport – aeroplane.

Aircraft applicability: Helicopter

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
33-50-1	Cabin Emergency Lighting				
33-50-1-1	Cabin Emergency Lighting System	-	-	-	May be inoperative provided it is in accordance with the arrangements agreed with the national authority.
33-50-1-2	EXIS Lighting				
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.

ATA Chapter 33 Lights					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
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.
33-50-1-3	Helicopter Emergency Egress Lighting System (HEELS)				
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..

Additional considerations:

N/A

Aircraft applicability: Aeroplanes

ATA Chapter 33 Lights					
1.System and Sequence Number 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 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 the associated door/exit is considered inoperative. Refer to item 52-22.

Additional considerations:

N/A

ATA 34 Navigation

Flight Instruments

Summary of the guidance items:

Item	ATA
Primary Airspeed Indication	34-10-1
Primary Altitude Indication	34-10-2
Turn and Slip Indicator /Turn Co-ordinators (if installed)	34-10-3
Vertical Speed Indicator	34-10-4
OAT Indicator	34-10-5
Radio Altimeter with an Audio Voice Warning (or equivalent)	34-15-2
Stabilised direction Indication	34-20-1
Magnetic/Standby Compass)	34-22-1
Primary Attitude Indication	34-20-2
Standby Attitude Indication	34-20-3

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-10-1	Primary Airspeed Indication				Note: Standby airspeed indication is not considered as a primary airspeed indication by this guidance.
34-10-1A	(Aeroplanes)	B	-	-	(O) May be inoperative provided: (a) A primary independent airspeed indication 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. **Procedures:** (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. Note: The procedure can be based on the use of a secondary (standby) airspeed indication, if installed.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-10-1B (Helicopters)	D	-	-	(O) May be inoperative provided: (a) A primary independent airspeed indication 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. **Procedures:** (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. Note: The procedure can be based on the use of a secondary (standby) airspeed indication, if installed.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-10-1C (Helicopters)	B	-	1	(O) Any in excess of one may be inoperative provided: (a) The primary airspeed indication is available at the handling pilot's side, (b) Flight is conducted by day under VFR, (c) Operations are not conducted over water, and (d) Procedures are established and used to cover the loss of a primary airspeed indication in-flight. **Procedures:** (O) To provide guidance to the flight crew to ensure safe flight in case of the failure in-flight of a primary indication. Note: The procedure can be based on the use of a secondary (standby) airspeed indication, if installed.

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 certificated 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 MEL.
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 no relief can be given unless an acceptable level of safety is demonstrated, on a case-by-case basis, in accordance with MEL.
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:
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 authorized with one primary airspeed indication left.
VFR condition allows departure from field under IMC under special VFR procedures.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-10-2	Primary Altitude Indication				Note: A secondary/standby altitude indication is not considered as a primary altitude indication..
34-10-2A	(Aeroplanes) (Other than commercial air transport operations)	C	-	-	May be inoperative provided: (a) Flight is conducted under VFR, and (b) An altitude indication is available at each required pilot's station. Note: For single pilot operations, a secondary/standby or off-side indication may satisfy condition (b), if visibility requirements are met.
34-10-2B	(Aeroplanes) (continued)	B	-	-	May be inoperative provided: (a) Flight is conducted under VFR, (b) An independent altitude indication is available at each required pilot's station, and (c) An additional independent altitude indication is operative for single pilot operations.

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
	(continued)				Note: 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: (a) Flight is conducted under VMC in sight of the surface, and (b) A primary altitude indication is available on pilot flying's side.
34-10-2D	(Helicopters)	C	-	1	May be inoperative provided: (a) A primary altitude indication is available at the handling pilot's side, and (b) Operations are conducted under day VFR over routes navigated by reference to visual landmarks.
34-10-2E	(Helicopters)	C	-	1	May be inoperative provided: (a) A primary altitude indication is available at handling pilot's station, and (b) Alternate independent altitude or height indication is operative, Note: A secondary/standby altitude indication or radio altimeter indication may satisfy condition (b) if visibility requirements are met.

Additional considerations:

Primary Altitude indication should normally be a sensitive pressure altitude indication.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	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	Turn Indication				
34-10-3-1A	(Aeroplanes)	B	-	0	May be inoperative for single pilot operations provided operations are conducted under day VMC.
34-10-3-1B	(Aeroplanes & Helicopters)	C	-	0	May be inoperative for single pilot operations provided standby attitude indication is operative.
34-10-3-1C	(Aeroplanes & Helicopters)	B	-	0	May be inoperative provided three independent attitude indications are operative
34-10-3-1D	(Aeroplanes)	C	-	1	May be inoperative provided: (a) The operative turn indication is on the pilot-in-command station, and (b) Primary attitude indications are operative at required pilot's station.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-10-3-1 1E (Aeroplanes)	B	-	1	May be inoperative provided: (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 the operative slip/skid indication is on the pilot's-in-command station.
34-10-3-2A (Helicopters)	B	-	0	May be inoperative provided: (a) Operations are conducted under VFR over routes navigated by reference to visual landmarks, and (b) Operations are not conducted over water.

Additional considerations:
Turn indication entry may apply to equivalent indication displayed as part of an integrated system.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-10-4	Vertical Speed Indication (VSI)				
34-10-4A	(Aeroplanes)	C	-	1	Any in excess of one may be inoperative provided the operative VSI is on the pilot's -in-command side.
34-10-4B	(Aeroplanes)	C	-	1	Any in excess of one may be inoperative for operations under day VMC provided procedures do not require = its use.
34-10-4C	(Helicopters)	C	-	1	Any in excess of one may be inoperative provided the operative VSI is on the pilot's -in-command side.
34-10-4D	(Helicopters)	B	-	0	May be inoperative for operations under day VFR over routes navigated by reference to visual landmarks.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-10-5 OAT Indicator **34-10-5A**	C	-	0	(O) May be inoperative provided another air temperature indication is operative that is convertible to OAT. **Procedures:** (O) To provide guidance to the crew to convert the alternate temperature indication in OAT, as required.

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.

Aircraft applicability: Aeroplanes

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-15-1 Altitude Alerting System **34-15-1A**	B	-	0	(O) May be inoperative provided: (a) An autopilot with an altitude hold is operative, (b) Alternate procedures are established and used, and (c) The altitude alerting system is not part of the equipment required for the intended operation. **Procedures** (O) To provide alternate operational procedures to the flight crew, if applicable. (O) To specify any applicable restriction for operations requiring a specific approval.

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.

Aircraft applicability: Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-15-2	Radio Altimeter with an Audio Voice Warning (or equivalent)				
34-15-2A		A	-	0	(O) May be inoperative provided: (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 helicopter 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. **Procedures** (O) To provide operational procedures to the flight crew to ensure that applicable dispatch conditions are satisfied.

Additional considerations:

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 discernible during NVIS operation.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-20-1	Stabilised Direction Indication				
34-20-1A	(Aeroplanes other than commercial air transport operations & Helicopters)	C	-	1	May be inoperative provided: (a) a stabilised direction indication is operative on the pilot's-in-command side, and (b) Magnetic/standby compass is operative,
34-20-1B	(Aeroplanes)	C	-	1	May be inoperative for single pilot operations provided: (a) Operations are conducted under day VFR, and (b) A stabilised direction indication is operative on the pilot's-in-command side, (c) Magnetic/standby compass is operative.
34-20-1C	(Aeroplanes)	C	-	2	May be inoperative provided an independent stabilised direction indication is operative at each required pilot's station. Note: A standby heading indication cannot be considered to meet the above dispatch conditions.

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-20-1D	(Aeroplanes)	B	-	1	(O) May be inoperative provided: (a) Operations are conducted under day VFR, and (b) The stabilised direction indication is displayed at each required pilot's station, and (c) Magnetic/standby compass is operative.
34-20-1E	(Helicopters with MCTOM < 3 175 kg)	A	-	0	May be inoperative for a maximum of 5 flights provided: (a) The operations are conducted under day VFR, and (b) The operations are not conducted over water out of sight of land or with a visibility less than 1 500 m, and (c) A non-stabilised direction indication (e.g. magnetic/standby compass) is operative.

Additional considerations:

34-20-1C

System architecture and functional integration should be considered in determining additional relief or restrictions.

If electronic flight deck displays are installed, a review of the failure conditions involving loss of heading displays and display of misleading heading information should be conducted in accordance with MEL

34-20-1D

Relief can be considered for night VFR and IFR operations based on a case-by-case evaluation and in accordance with CAAT 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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation				
1.System and Sequence Number 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: (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: (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: a) Two independent stabilised direction indications are operative, and b) Another source of magnetic heading is available and visible by the pilot- in-command.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-22-1D (Helicopters)	B	-	0	May be inoperative provided: (a) Operations are conducted under VFR, and (b) Two independent stabilised direction indications are operative.

Additional considerations:

Relief can be considered for night VFR and IFR operations based on a case-by-case evaluation and in accordance with MEL requirements.

Justifications may take advantage of available equipment providing stabilized direction indication or equivalent (e.g. GPS track).

Whenever independent stabilized direction indications are required for dispatch, compliance is ensured by the availability of independent sources (e.g. stabilized gyros) so that no single failure can lead to the loss of both heading indications.

The two independent stabilized direction indicator systems may be achieved by any combination of two gyroscopic or INS (IRU) stabilized compass systems.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-20-2	Primary Attitude Indication				Note: A secondary/standby attitude indication is not considered as a primary indication.
34-20-2A	(Aeroplanes or other than CAT operations)	B	-	0	May be inoperative provided: (a) Operations are conducted under VFR, and (b) Standby attitude indication is operative.
34-20-2B	(Helicopters or other than CAT operations)	D	-	0	May be inoperative provided 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: (a) Operations are conducted in day VMC in sight of the surface with adequate external attitude reference, and (b) The primary attitude indication is operative on the pilot's-in-command side, and (c) Standby attitude indication is operative.

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-20-2D	(Aeroplanes & Helicopters)	C	-	2	Any in excess of two may be inoperative provided: (a) Operations are conducted under VFR, and (b) An independent primary attitude indication is operative at each required pilot's station Note: A secondary/standby indication cannot satisfy the above condition (b).
34-20-2E	(Aeroplanes & Helicopters)	B	-	1	(O) Any in excess of one may be inoperative provided: (a) Operations are conducted under VFR, and (b) The primary attitude indication is displayed on both pilot's stations, and (c) Standby attitude indication is operative. **Procedures:** (O) To provide switching procedure to the crew to ensure adequate configuration of the displays in accordance with the above condition (b)

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-20-2F	(Aeroplanes) (Single pilot)	A	-	0	May be inoperative for single pilot operations only for a maximum of 2 calendar days provided: (a) Operations are conducted under day VMC in sight of the surface with adequate external attitude reference, and (b) A standby attitude indication is installed and operative.
34-20-2G	(Helicopters with MCTOM < 3 175 kg)	C	-	0	May be inoperative provided: (a) Operations are conducted under day VFR, and (b) Operations are not conducted over water out of sight of the land, and (c) Visibility is more than 1 500m.
34-20-3	Standby Attitude Indication				
34-20-3A	(Other than commercial air transport operations)	D	-	0	May be inoperative provided flight is conducted under VMC with a visual horizon.
34-20-3B	(Aeroplanes & Helicopters)	B	-	0	May be inoperative provided flight is conducted under day VMC 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 & B Standby attitude indication:

If the standby attitude indicator is needed to meet the applicable requirements relief may not be granted for operations under IFR for night VFR or IFR operations. Case-by-case evaluations are, however, possible, based on the applicable CS-MMEL requirements. The VMC with a visual horizon limitation prohibits 'VFR on top' or 'VFR over-the-top' operations.

ATA 34 Navigation

Navigation Equipment

Summary of the guidance items:

Item	ATA
Marker Beacon	34-31-1
ILS (or MLS)	34-32-1
Airborne Collision Avoidance System (ACAS)	34-40-1
Area Navigation System	34-40-2
Weather Detection System (Antenna(s), XCVR(s), Controller(s), Display(s))	34-41-1
Wind shear Detection/Warning System (if installed)	34-41-2
Navigation Systems (based on VOR, DME, ADF, GNSS, INS)	34-51-1
Terrain Awareness Warning System (TAWS)	34-43-1
SSR Transponder Mode A/C	34-54-1
SSR Transponder Mode S	34-54-2

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-31-1 Marker Beacon				
34-31-1A	C	-	0	May be inoperative under IFR operations provided approach procedures do not require marker fixes.
34-31-1B	D	-	0	May be inoperative under VFR operations.

Additional considerations:

One marker beacon receiving system is required to be installed where a marker beacon is required for approach navigation purpose.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-32-1 ILS (or MLS) (MC)				
34-32-2A	B	-	0	May be inoperative under IFR operations provided approaches and missed approaches where navigation is based on ILS are not included in the flight plan.
34-32-2B	D	-	0	May be inoperative under VFR operations.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-40-1	Airborne Collision Avoidance System (ACAS)				
34-40-1A		A	-	0	(O) May be inoperative for a maximum of (M) 10 calendar days provided: (a) ACAS is deactivated, and (b) Operating procedures do not require its use. **Procedures:** (O) To provide alternate crew procedures, as applicable. (M) To provide guidance for deactivation of the ACAS.
34-40-1B		C	-	-	(M) Any in excess of those required may be inoperative provided it is deactivated. **Procedures:** (M) To provide guidance for deactivation of the ACAS.
34-40-1-1	Combined TA and RA Dual Display				

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-40-1-1A	C	-	1	(O) May be inoperative on the pilot monitoring's side provided: (a) TA and RA elements and audio functions are operative on the pilot flying's side, and (b) TA and RA display indications are visible to the pilot monitoring. **Procedures:** (O) To provide alternate crew procedures, as applicable.
34-40-1-2 Resolution Advisory (RA) Display Systems				
34-40-1-2A	C	-	1	(O) One may be inoperative on the pilot monitoring side. **Procedures:** (O) To provide alternate flight crew procedures, as applicable.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-40-1-2B	C	-	0	(O) One or more may be inoperative provided: (a) All Traffic Alert (TA) display elements and voice command audio functions are operative, and (b) TA only mode is selected by the crew, and (c) Operating procedures do not require its use. **Procedures:** (O) To provide alternate crew procedures, as applicable.
34-40-1-3 Traffic Alert (TA) Display System(s)				
34-40-1-3A	C	-	0	(O) One or more may be inoperative provided: (a) RA display and audio functions are operative, and (b) Operating procedures do not require its use. **Procedures:** (O) To provide alternate flight crew procedures, as applicable.

Additional considerations:

The deactivation of the ACAS can alternatively be performed through an operational procedure, if acceptable. 34-40-1 1B covers the failure of the ACAS when the system is not required by operating rules.

Aircraft applicability: Aeroplanes

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-40-2 Area Navigation System 34-40-2A (continued)	C	-	-	(O) may be inoperative provided: (a) Applicable airspace requirements for the intended flight route are complied with, (b) Certified RNP/ RNAV capabilities relevant for the intended flight route are maintained, and (c) Operational procedures do not require its use. **Procedures:** (O) To provide information about which procedures require its used to provide alternate navigation procedures, if applicable.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)	A	-	0	(O) 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 flight route.

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 flight route.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-41-1	Weather Detection System (Antenna(s), XCVR(s), Controller(s), Display(s))				
34-41-1A		D	-	-	Any in excess of those required may be inoperative provided procedures do not require their use.
34-41-1B		C	-	0	May be inoperative provided operations are conducted in daylight VMC.
34-41-1C		C	-	0	May be inoperative provided no Thunderstorm or other potentially Hazardous weather conditions, Regarded as detectable with the airborne weather detection system, are forecasted along the route. Note: The route corresponds to any Point on the route including Diversions to reach alternate Aerodromes required by the operational rules.
34-41-1-1	Wind shear Detection/Warning System Predictive Function				
34-41-1-1A		C	-	0	May be inoperative.

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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-41-2	Wind shear Detection/Warning System (if installed)				
34-41-2-1	Reactive Function				
34-41-2-1A		C	-	0	(O) May be inoperative provided alternate procedures are established and used. **Procedures:** (O) To provide guidance procedures for wind shear avoidance and wind shear recovery procedure.

Additional considerations:
The operational procedure shall be developed to:
— Assess and minimise 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

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-43-1	Terrain Awareness Warning System (TAWS)				
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 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				

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-43-1-4A	B	-	0	May be inoperative provided: (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: (a) Low visibility approaches requiring the use of affected callouts are not performed, and (b) Alternate procedures are established and used. Note: Check Flight Manual limitations for approach minima.

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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-51-1	Navigation Systems (based on VOR, DME, ADF, GNSS, INS)				
34-51-1A	(Except for commercial air transport operations)	D	-	0	May be inoperative provided: (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: (a) The navigation systems required for each segment of the intended flight route are operative, and (b) Alternate procedures are established and used, where applicable. **Procedures:** (O) To give alternate procedures in case existing operational procedures are affected.

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.
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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-54-1	SSR Transponder Mode A/C				
34-54-1A		A	-	0	(O) May be inoperative for a maximum of 5 flights provided: (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. Note: Mode C function is required to be operative for RVSM operations
34-54-1B		D	-	-	Any in excess of those required may be inoperative.
34-54-2	SSR Transponder Mode S				
34-54-2A		D	-	-	Any in excess of those required for the intended flight route, may be inoperative. Note: 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				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-54-2B	C	-	0	One or more may be inoperative provided permission is obtained from the Air Navigation Service Provider(s) when required for the intended flight route. Note 1: An SSR transponder with an operative Mode S function is defined as a transponder which can provide, at least, Elementary Surveillance capability. Note 2: Elementary Surveillance (ELS) capability (Mode S including Aircraft Identification and Pressure Altitude Reporting) is required in European Mode S designated airspace. Note 3: Altitude reporting, provided by an SSR transponder Mode S function, is required for ACAS II operation. Refer to item 34-40 for flight with ACAS II inoperative. Note 4: Altitude reporting, provided by an SSR transponder Mode S function, is required for flight into RVSM airspace.

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
34-54-2-1	Enhanced Surveillance Functions				
34-54-2-1A		D	-	0	One or more Downlinked Aircraft Parameters (DAPs), which provide Enhanced Surveillance, may be inoperative when not required for the intended flight route.
34-54-2-1B		C	-	0	One or more Downlinked Aircraft Parameters (DAPs), which provide Enhanced Surveillance, may be inoperative when required for the intended flight route. Note: Enhanced surveillance capability is required in Mode S EHS notified airspace.
34-54-2-2	Extended Squitter (ADS- B OUT) Transmissions				
34-54-2-2A		D	-	0	One or more extended squitter transmissions may be inoperative when not required for the intended flight route.
34-54-2-2B		C	-	0	One or more extended squitter transmissions may be inoperative when required for the intended flight route.

Additional considerations:

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:

Item	ATA
Supplemental Oxygen System (Non-Pressurized Aircraft)	35-00-1
Flight Crew Fixed Oxygen System (Supplemental)	35-10-1
Passenger/Cabin Crew Oxygen System (Supplemental) (if installed)	35-20-1
First-Aid Oxygen	35-50-1

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation						
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions	
35-1-1	Supplemental Oxygen System (Non- Pressurized Aircraft)					
35-1-1-1	Flight Crew Compartment					
35-00-1-1A		C	-	0	One or more may be inoperative provided the aircraft is not operated above 10 000 ft pressure altitude.	
35-1-1-2	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 the aircraft is not operated above 10 000 ft pressure altitude.	

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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number 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) One or more may be inoperative (M) provided a procedure is used to ensure that oxygen supply is above the minimum for the intended flight. **Procedures**: (O) To provide an alternate means to (M) 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 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 the associated seat is not occupied.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
35-10-1-3B	C	-	0	One or more may be inoperative provided the maximum altitude is Limited to 10000 ft pressure altitude.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
35-20-1	Passenger/Cabin Crew Oxygen System (Supplemental oxygen) (if installed)				
35-20-1A		B	-	0	(O) May be inoperative provided: (M) (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. **Procedures:** (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.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
35-20-1B	B	-	0	(O) May be inoperative provided: (a) Maximum altitude is limited to 25 000 ft pressure altitude, (b) (Air conditioning packs are operative, (c) All components of the pressurisation system are operative, (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, (e) Portable oxygen units are available for all required cabin crew members, (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 flight route, and (g) Passengers are appropriately briefed.
(continued)				

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
	(continued)				**Procedures:** (O) To provide passenger briefing in accordance with the dispatch configuration.
35-20-1-1	Automatic Presentation System				
35-20-1-1A		C	-	0	May be inoperative provided: (a) The manual deployment from the flight crew compartment is operative, and (b) The maximum altitude is limited to 30 000 ft pressure altitude.
35-20-1-1B		C	-	0	(O) May be inoperative provided: (a) Maximum altitude is limited to 25 000 ft pressure altitude, and (b) 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,
	(continued)				**Procedures:**

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
	(continued)				(O) To ensure passenger oxygen availability and quantity is adequate to the intended route taking into account manual deployment may not be available (hidden failure) when needed.
35-20-1-2	Passenger Service Units (Drop-Down Oxygen)				
35-20-1-2A		B	-	-	(M) One or more passenger service units (O) 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. **Procedures**: (M) or alternatively (O) To give guidance reference for a practical mean of prohibiting the use of the affected seat(s).

dditional 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 CAAT announcement (Air transport – aeroplane).
The intent of the CAAT announcement is to ensure that 10% of passenger, wherever there are should have access to oxygen.
This requirement is mainly applicable to small aircraft not certified to fly above FL250. For those small aircraft, portable oxygen units can be embarked for 10% of the passengers and circulated in the aircraft whenever needed
This is not relevant to big aircraft since it would not be realistic to embark additional portable oxygen bottles for 10% of the passengers and ensure those bottles would be circulated throughout the aircraft in the case of necessity.
35-20-1-1A Automatic Presentation System:
The automatic function of the passenger oxygen system can only be tested by simulation (usually by an MRB task) if no built-in monitoring is provided. 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 of more than 30 000ft 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 MEL guidance to cover the loss of this particular function is only justified to release the aircraft after maintenance.
The proposed guidance is only applicable to design where the manual control system is monitored and is indicated to the crew in case of failure by dedicated fault message before the flight.
35-20-1-1B Automatic Presentation System: This entry is to cover cases where the manual control system is not monitored and thus no credit could be taken upon its availability. It is expected that the descent performance dispatch condition (b) is explicited at aircraft type MEL level.
35-20-1-2A
Rectification interval B is more restrictive than the rectification interval proposed for 25-21-1A (Passenger Seats) in order to cover the consequence of the inoperative unit on adjacent passengers and/or cabin crew.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
35-50-1 First-Aid Oxygen **35-50-1A**	D	-	-	(M) Any portable oxygen dispensing unit (O) in excess of those required may be inoperative or missing provided: (a) Required distribution of operative units is maintained throughout the aircraft, (b) The inoperative portable oxygen dispensing unit is placarded inoperative, and (c) Procedures are established and used to alert crew members of inoperative or missing equipment. **Procedures:** (M) To provide instructions to placard the inoperative portable oxygen dispensing unit or its installed location if the unit is removed from its installed location. To secure the portable oxygen dispensing unit if if the unit is removed from its installed location and stored in another location. (O) To provide procedures to alert crew members.

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 dispensing units:

The number of mandatory portable oxygen dispensing units, defined for each aircraft type, is calculated as follows:

- One portable oxygen dispensing unit is required for each required cabin crew, and
- Portable oxygen dispensing units are required for 2 % of the passengers.

The minimum number of required portable oxygen dispensing units is determined by the highest number due to the above requirements.

The actual number of portable oxygen dispensing units 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.

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

ATA 46 Information Systems

Summary of the guidance items:

Item	ATA
Electronic Flight Bag (EFB) Systems	46-20-1
Class 2 EFB	46-20-2
Power Connection for Class 1 and Class 2 EFB	46-20-3

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
46-20-1	Electronic Flight Bag (EFB) Systems				
46-20-1A		C	-	0	(M) May be inoperative provided (O) alternate procedures are established and used where operating procedures require the use of the affected EFB.
46-20-2	Class 2 EFB				
46-20-2-1	Mounting Device				
46-20-2-1A		C	-	1	(M) Any in excess of one may be (O) inoperative provided the affected EFB is secured by an alternative means.
46-20-2-1B		C	-	0	(M) May be inoperative provided: (O) (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 require the use of the affected EFB.
46-20-2-2	Data Connectivity				

ATA Chapter 34 Navigation					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
46-20-2-2A		C	-	1	(M) Any in excess of one may be (O) inoperative provided an alternative means of data connectivity is used.
		C	-	0	(M) May be inoperative provided (O) alternate procedures are established and used where operating procedures require the use of the affected EFB. **Procedures:** (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.
46-20-3	Power Connection for Class 1 and Class 2 EFB				
46-20-3A		C	-	1	(M) Any in excess of one may be (O) inoperative provided an alternative power source is available and can be used for the planned duration of use of the affected EFB.

ATA Chapter 34 Navigation				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
46-20-3B	C	-	0	(M) May be inoperative provided (O) alternate procedures are established and used. **Procedures:** (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.

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 competent authority.

Any EFB function which operates normally may be used.

ATA 52 Doors

Summary of the guidance items:

Item	ATA
Door/Exit	52-11-1
C Door/Exit (All Cargo Configuration only)	52-11-2
Flight Crew Compartment Door	52-51-1

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 52 Doors				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
52-11-1 Door/Exit **52-11-1A**	A	-	-	(O) One, on each deck, may be (M) inoperative for a maximum of 5 flights provided: (a) The number of passengers carried and the position of the seats which they occupy is in accordance with the the Maximum Passenger Capacity (MPC) table [see guidance provided in 'Additional Considerations'], and (b) Adequate cabin safety procedures are established and used, and (c) Affected door/exit is closed and locked, and (d) The affected door/exit is not used for passenger boarding, nor for any non- emergency purpose whilst passengers are on board, (e) Affected door/exit is marked with a placard to prohibit utilisation, as applicable, and
(continued)				

ATA Chapter 52 Doors				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				(f) All the door/exit markings, signs and lights associated with the affected door/exit must be obscured, as applicable. **Procedures:** (O) To ensure that: — All crew members are briefed on the location and condition of the affected door/exit, passenger distribution and modified cabin safety procedures; — Where the affected door/exit can be opened, the briefing should address the possible use of the door for emergency evacuation in certain circumstances; — The affected emergency exit, escape paths, and blocked seating layout are checked before each take-off and landing; — The pre-take-off briefing to passengers accurately represents the current state and condition of the aircraft's escape facilities;
(continued)				

ATA Chapter 52 Doors				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
(continued)				— 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. (M) To ensure that: — Affected door/exit is closed and locked if the closing/locking function is not affected; — If the closing/locking mechanism is affected, the door is secured closed and locked; — 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; — Associated door/exit markings, signs and lights are obscured or removed.

ATA Chapter 52 Doors					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
52-11-2	Door/Exit (All Cargo Configuration only)				
52-11-2A		C	-	2	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.
52-11-2B		A	-	1	(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. **Procedures:** (O) To ensure that: — All crew members are briefed on the location and condition of the affected emergency exit and modified cabin safety procedures; — A pre-take-off briefing to occupants accurately represents the current state and condition of the escape facilities.

ATA Chapter 52 Doors				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
52-11-2C	A	-	1	(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: (a) A specific evacuation procedure is established, and (b) Only flight crew members and authority or operator inspector(s) essential for the flight are on board, and (c) The operative door external opening mechanism is operative, and (d) The operative door internal opening mechanism is operative, (e) The operative door escape slide or slide raft is operative unless an approved alternate means of escape is available, and an appropriate raft (if required) is available,

ATA Chapter 52 Doors				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
				(g) The operative door 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 (h) Flight crew members are to review the evacuation procedure before each flight. **Procedures:** (O) To ensure that: — All crew members are briefed on the ocation and condition of the affected door/exit and modified cabin safety procedures; — An alternate evacuation procedure is established and used to cover the specific dispatch configuration.

ATA Chapter 52 Doors				
1.System and Sequence Number ITEM	2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
52-11-2D	A	-	0	(O) All doors/exits not located in the flight crew compartment may be inoperative for a maximum of 3 flights provided: (a) Specific procedures are established to enter/evacuate the aeroplane, (b) An appropriate raft (if required) is available, (c) Only flight crew members and authority or operator's inspector(s) essential for the flight are on board, and (d) Flight crew members are to review the evacuation procedure before each flight. Procedures: (O) refer to 52-11-1C.

Additional considerations:

52-11-1 Door/exit 52-11-1A

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 not 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 utilisation 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).

Condition (f):

In case of cabin crew seats are located adjacent to an inoperative pair of exits, the operator should considered a re-location of one or more cabin crew to a different zone of the cabin in order to improve

52-11-2 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):

(a) the external exit opening means does not function correctly;
(b) the internal exit opening means does not function correctly;
(c) the exit opening power assist mechanism does not function correctly, unless already covered by a dedicated MMEL item;
(d) the door gust lock does not function correctly unless already covered by a dedicated MMEL item;
(e) the assisting evacuation means, if required, is inoperative;
(f) the exit marking or locator sign is inoperative;
(g) the floor proximity exit marker is inoperative;
(h) the exit interior emergency lighting is inoperative; or
(i) the exit exterior emergency lighting or slide illumination, in case of night operation, is inoperative.

Passenger/Seat Occupancy Reduction Guidance:

(a) GENERAL
    a. 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.

b. 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.

c. 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.)

(b) Calculation of MAXIMUM PASSENGER CAPACITY (MPC) TABLES

a. General

i. 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.

ii. 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.

iii. 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.

iv. 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, for aircraft that were certificated using these ratings, if any. 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.

n 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:

i. the position of exits,
ii. the type of exits,
iii. the exits above the waterline (‘ditching exits’)
iv. the passenger zones,

v. the number and position of all passenger seats in each zone,
vi. 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) (ii) 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) (iii) below.

i. 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:

1. the sum of the passenger exit ratings for all operative exit pairs/exits as specified in table 1 of section 2(a) above;
2. the maximum number of passengers approved for the emergency evacuation as specified on Type Certificate Data Sheet (TCDS) 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;
3. (iii) 9, if only one operative exit pair including doors smaller than Type III is available, 19, if only one operative exit pair of Type III or larger is available,

   40, if at least two operative exits pairs are available, of which one pair is Type II or larger,

   110, if at least two operative exits pairs are available, of which one pair is Type I or larger,

   If at least two operative exit pairs of type I or larger are available, this paragraph(iii) is not applicable.

   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.

4. whether ditching certification is requested or not, the number of operative exits in both sides 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.
5. If life rafts are required to be carried:
   a. the sum of the rated capacities of all slide rafts of operative exit pairs including the rated capacity of any life raft, or
   b. he 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.

ii. 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.

1. **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), unless for particular layout it has been shown that the remaining evacuation capability remains acceptable without this restriction.

In case a dead end zone is made up of two adjacent zones one forward and one rearward of the inoperative exit (e.g. first pair of exits is considered inoperative and passengers are seated forward of the pair of exits), 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.

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 and the associated passenger capacity of the affected zones is downgraded to 75 % of the rating of the single pair of exits bordering the zone (rounded down).

Sequential zone capacity limitation:

While traversing the cabin 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 and included in the consecutive zones being analysed. The combination of all zones is excluded from the analysis (e.g. for a 4 zones (A/B/C/D) cabin: A+B, A+B+C and D+C,D+C+B combinations have to be analysed). If necessary, the passenger capacity of the affected zone(s) in this combination (i.e. bordered by an inoperative exit pair) shall be reduced accordingly. These reduced capacities, if any, have to be taken into account for the next sequences of the calculation when traversing the cabin in one direction.

iii. 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.

Aircraft applicability: Aeroplanes & Helicopter

ATA Chapter 52 Doors					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
52-51-1	Fligth Crew Compartment Door				
52-51-1-1	Locking System				
52-51-1-1A		B	-	0	(M) May be inoperative provided: (O) (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. **Procedures:** (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.

ATA Chapter 52 Doors					
1.System and Sequence Number ITEM		2. Rectification Interval	3. Number Installed	4. Number Required for Dispatch	5. Remarks or Exceptions
52-51-1-2	Flight Crew Compartment Access/Control Functions				
52-51-1-2A		B	-	0	(O) May be inoperative provided: (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. **Procedures:** (O) To provide alternate procedures for the crew to manage access control to the flight crew compartment.

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.