ATA 22 AUTOFLIGHT

Summary of the guidance items:

Item	ATA
Autopilot	22-10-1
Flight Director	22-10-2
Navigation Databases (MC)	22-71-1

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 22 Autoflight					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
22-10-1	**Autopilot (or Autopilot Channel)**				
22-10-1A	(Other than CAT)	C	-	0	(M) (O) May be inoperative provided: (a) Affected autopilot/channel is deactivated, and (b) Affected autopilot/channel is not part of the equipment required for intended operation. **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.)
22-10-1B	(CAT)	C	-	1	(M) (O) Any in excess of one may be inoperative provided: (a) Affected autopilot/channel is deactivated, and (b) Affected autopilot/channel is not part of the equipment required for intended operation. **Procedures** See 22-10-1A
22-10-1C	(CAT)	B	-	0	(M) (O) May be inoperative provided: (a) Any increase in crew workload caused by the affected autopilot/channel has been considered for intended operation,
	(continued)				

ATA Chapter: 22 Autoflight				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				(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
22-10-1-1 Autopilot Functions/Modes				
22-10-1-1A (CAT)	C	-	-	(M)(O) One or more functions/modes may 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:

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

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

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

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

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

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

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

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

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

22-10-1C:

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

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 22 Autoflight				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
22-10-2 Flight Director Symbols (FD Bars)				
22-10-2A	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 & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
22-71-1 Navigation Database **(MC)**				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.
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
(continued)				

ATA Chapter: 22 Autoflight				
(1) System & Sequence Numbers 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 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.
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 (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:

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

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

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

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 & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
23-10-1 Headset (MC)				
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 & Sequence Numbers 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 & Sequence Numbers 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 & Sequence Numbers 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. 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.
(continued)				

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

Additional considerations:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 23 Communications				
(1) System & Sequence Numbers 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 as per Commission Regulation (EC) No 29/2009 or whenever aircraft is operated below FL285.

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 23 Communications				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
23-30-1 Public Address (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.
23-30-1D	D	-	0	(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.
(continued)				

ATA Chapter: 23 Communications				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				
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.
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 & Sequence Numbers 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) (MC)**				
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 & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
23-40-2	**Crew Member Interphone System (MC)**				
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. **Procedures:** (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
	(continued)				

ATA Chapter: 23 Communications

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
	(continued)				
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.
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 & Sequence Numbers 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)(M) May be inoperative provided: (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.
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.
(continued)					

ATA Chapter: 23 Communications

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
	(continued)				
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 Fligh Crew Interphone (MC)				
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 & Sequence Numbers 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 & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
23-71-1 Cockpit Voice Recorder System (MC)				
23-71-1A	D	-	-	Any in excess of those required may be inoperative.
23-71-1B	A	-	0	May be inoperative provided: (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

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 (MC)	25-40-1
Interior Lavatory Ashtrays (MC)	25-40-2
Escape Slides	25-60-1
Independent portable lights (MC)	25-60-2
Protective Breathing Equipment (PBE) (MC)	25-60-3
Megaphones (MC)	25-60-4
Life rafts (MC)	25-60-5
Survival Equipment (MC)	25-60-6
Emergency Flotation Equipment	25-60-7
Crash Axes and Crowbars (MC)	25-61-1
First-Aid Kits (MC)	25-62-1
Emergency Medical Kits (MC)	25-62-2
Emergency Locator Transmitter (MC)	25-63
Life jackets (MC)	25-64-1

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 25 Equipment/Furnishings						
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions	
25-11-1	**Flight Crew Seats (MC)**					
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. 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.	

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 25 Equipment/Furnishings				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-11-2 Observer Seats (MC)				
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 & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-21-1 Passenger Seats (MC)				
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 & Sequence Numbers 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 (MC)				
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

ATA Chapter: 25 Equipment/Furnishings					
(1) System & Sequence Numbers 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 (MC)				
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 underseat baggage restraining bar affects the integrity of the seat.

Aircraft applicability: Aeroplanes

ATA Chapter: 25 Equipment/Furnishings					
(1) System & Sequence Numbers 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.
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

ATA Chapter: 25 Equipment/Furnishings					
(1) System & Sequence Numbers 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.

ATA Chapter: 25 Equipment/Furnishings					
(1) System & Sequence Numbers 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)(O) One seat or seat assembly may be 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'. 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.
	(continued)				

ATA Chapter: 25 Equipment/Furnishings

(1) System & Sequence Numbers 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				
25-21-2-2A		C	-	0	(M)(O) Seat or seat assembly in excess of 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. (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.
(continued)					

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

A definition for 'Required Cabin Crew Seat' is provided in GM4 MMEL.120.

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

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

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 & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-40-1 Exterior Lavatory Door Ashtrays (MC)				
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)(O) One or more may be inoperative or missing provided: (a) Affected lavatory door is locked closed and placarded to prohibit passengers' entrance, and (b) 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.
25-40-1D	D	-	0	One or more may be inoperative or missing provided flight is non-smoking.

Additional considerations:

N/A

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Aircraft applicability: Aeroplanes

ATA Chapter: 25 Equipment/Furnishings				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-40-2 Interior Lavatory Ashtrays (MC)				
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)(O) One or more may be inoperative or 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 & Sequence Numbers 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 & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-60-2	**Independent portable lights (MC)**				
25-60-2A		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:

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

Aircraft applicability: Aeroplanes

ATA Chapter: 25 Equipment/Furnishings				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-60-3 Protective Breathing Equipment (PBE) **(MC)**				
25-60-3A	D		-	(M) (O) Any in excess of those required may 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. (O) To provide procedures to alert crew members.

Additional considerations:

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

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 25 Equipment/Furnishings					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-60-4	**Megaphones (MC)**				
25-60-4A		D	-	-	(M) (O) Any in excess of those required may be inoperative or missing provided: (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 & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-60-5 Life rafts (MC)				Note: For life raft used as slide, refer to 25-60-1.
25-60-5A	D	-	-	(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.
25-60-5B	C	-	-	(O) (M) Any in excess of those required for the intended flight may be inoperative or missing for extended overwater flights provided: (a) Required distribution is maintained, (b) Inoperative life raft and its installed location are placarded inoperative, (c) When practical, the inoperative life raft is secured out of sight, and (d) Procedures are established and used to alert crew members of inoperative or missing equipment. **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:

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

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 25 Equipment/Furnishings					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-60-6	**Survival Equipment (MC)**				Note: For ELT(S), refer to item 25-63-3.
25-60-6A		D	-	-	(O)(M) Any in excess of those required may 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 & Sequence Numbers 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.	
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 & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-61-1	**Crash Axes and Crowbars (MC)**				
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 & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-62-1	**First-Aid Kits (MC)**				
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 & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-62-2	**Emergency Medical Kits (MC)**				
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

ATA Chapter: 25 Equipment/Furnishings

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

(continued)

ATA Chapter: 25 Equipment/Furnishings					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
	(continued)				
25-63-2B	(Aeroplanes)	A	-	0	May be inoperative for a maximum of 6 flights or 25 flight hours, whichever occurs first.
25-63-2C	(Helicopters)	C	-	0	May be inoperative for overland operations or overwater operations at a distance from land not beyond 10 minutes flying time at normal cruise speed.
25-63-3	Survival Emergency Locator Transmitter ELT(S)				
25-63-3A		D	-	-	(M)(O) Any in excess of those required may be inoperative or missing provided: (a) Inoperative equipment and its installed location are placarded inoperative, and (b) Inoperative equipment is secured out of sight, and (c) Procedures are established and used to alert crew members of inoperative or missing equipment. **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 & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
25-64-1 Life jackets (MC)				
25-64-1A	D	-	-	(M) (O) Any in excess of those required may 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

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 & Sequence Numbers 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) (O) May be inoperative provided: (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.
26-17-1B		B	-	0	(M) (O) May be inoperative provided: (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 the authority approving the MEL.

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

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 26 Fire Protection				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
26-24-1 Hand Fire Extinguishers (MC)				
26-24-1A	D	-	-	(M) (O) Any in excess of those required may 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. (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

ATA Chapter: 26 Fire Protection					
(1) System & Sequence Numbers 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.

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.) (MC)	30-40-1
Windshield Heating/De-icing Indicating System	30-41-1
Windshield Wipers (MC)	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 Ice and Rain Protection				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
30-00-1 Inertial Separators — 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 & Helicopters

ATA Chapter: 30 Ice and Rain Protection					
(1) System & Sequence Numbers 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 & Helicopters

ATA Chapter: 30 Ice and Rain Protection				
(1) System & Sequence Numbers 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 **Monitoring System**				
30-21-1A	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 & Helicopters

ATA Chapter: 30 Ice and Rain Protection				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
30-31-2 Pitot Heating Failure Indication System				
30-31-2A	-	-	-	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 Ice and Rain Protection				
(1) System & Sequence Numbers 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.) **(MC)**				
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 & Helicopters

ATA Chapter: 30 Ice and Rain Protection				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
30-41-1 Windshield Heating/De-icing Indicating System				
30-41-1A	C		1	(O) May be inoperative provided: (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 & Helicopters

ATA Chapter: 30 Ice and Rain Protection

(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
30-42-1 Windshield Wipers (MC)				
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.
30-42-1B (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) (M) May be inoperative provided an alternative windshield rain protection mean (e.g. Rain Repellent System, Coating, etc.) is installed and verified operative. **Procedures** (O) or (M) To provide guidance to check correct operation of the system.
30-42-1-1 High Speed Function				
30-42-1-1A	C	-	0	May be inoperative provided 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.

(continued)

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

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Aircraft applicability: Aeroplanes

ATA Chapter: 30 Ice and Rain Protection					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
30-61-1	**Propeller De-ice/Anti-ice System Monitoring System**				
30-61-1A		B	-	0	One or more may be inoperative provided operations are not conducted at any time in known or forecasted icing conditions.

Additional considerations:

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

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 Ice and Rain Protection					
(1) System & Sequence Numbers 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 & Helicopters

ATA Chapter: 30 Ice and Rain Protection					
(1) System & Sequence Numbers 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 aeroplanes use in-flight ice detection systems (IIDS). IIDS may either directly detect the presence of ice on the aeroplane surface or detect that the aeroplane is in icing conditions. There are basically two classes of IIDS:

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

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

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

Summary of the guidance items:

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

Aircraft applicability: Aeroplanes & Helicopters

ATA Chapter: 31 Indicating/Recording Systems				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
31-21-1 Clock (MC)				
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.

ATA Chapter: 31 Indicating/Recording Systems

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
31-31-1	**Flight Data Recorder (FDR)** **(MC)**				
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. 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).

(continued)

ATA Chapter: 31 Indicating/Recording Systems				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				Note 3: Where improper recording affects 5 % of the required parameters or less, refer to item 31-31-4.
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 & Helicopters

ATA Chapter: 31 Indicating/Recording Systems

(1) System & Sequence Numbers 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 (MC)**				
31-31-2A		D	-	-	(O) (M) Any function may be inoperative 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 Indicating/Recording Systems				
(1) System & Sequence Numbers 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. Note 3: Where improper recording affects 5 % of the required parameters or less, refer to item 31-31-4.
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.

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Aircraft applicability: Aeroplanes

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

Additional considerations:

N/A

Aircraft applicability: Aeroplanes & Helicopters

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

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.

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 & Helicopters

ATA Chapter: 33 Lights					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
33-10-1	**Flight Crew Compartment Lighting**				
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 & Helicopters

ATA Chapter: 33 Lights					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
33-20-1	**Passenger Compartment Lighting**				
33-20-1A		D	-	0	May be inoperative provided 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.

ATA Chapter: 33 Lights					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
33-20-2	**Cabin Signs ('Fasten Seat Belt', 'No Smoking' Signs, Return to Cabin, NO PED)**				
33-20-2A		C	-	-	(M)/(O) One or more may be inoperative provided 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)/(O) to give guidance reference for a practical mean of prohibiting the use of the affected seat. (O) To alert the crew about affected seats/lavatories.
33-20-2B		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. **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.
	(continued)				

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

ATA Chapter: 33 Lights					
(1) System & Sequence Numbers 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.

ATA Chapter: 33 Lights					
(1) System & Sequence Numbers 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. **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,
	(continued)				

ATA Chapter: 33 Lights

(1) System & Sequence Numbers Item		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)					(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.
33-42-1-1E	(Helicopters and other than Commercial Air Transport operations of aeroplanes)	B	-	0	May be inoperative for daylight operations.
33-42-1-2	Wing-Tip/Tail Strobe Lights (if installed)				
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 & Sequence Numbers 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 & Helicopters

ATA Chapter: 33 Lights					
(1) System & Sequence Numbers 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

ATA Chapter: 33 Lights					
(1) System & Sequence Numbers 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	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. 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.
	(continued)				

ATA Chapter: 33 Lights

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
	(continued)				
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				
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		-	-	-	One 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 MMELs 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 CS 25.811 (d)(2).

Item 33-50-1-3 Cabin Emergency Lighting - EXIT locator Sign covers those lights required by CS 25.811 (d)(1) and (d)(3).

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 CS 25.812 (e)(2) and (d)(3).

Aircraft applicability: Helicopters

ATA Chapter: 33 Lights

(1) System & Sequence Numbers 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.
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.

(continued)

ATA Chapter: 33 Lights

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)					
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 & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
33-50-2	**Exterior Emergency Lighting Systems**				
33-50-2A		B	-	0	One or more may be inoperative for daylight operations.
33-50-2-1	Escape Slide Lighting				
33-50-2-1A		B	-	0	One or more may be inoperative for daylight operations.
33-50-2-1B		-	-	-	One may be inoperative for night operations provided 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

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

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
34-10-1	**Primary Airspeed Indication**				Note: Standby airspeed indication is not considered as a primary airspeed indication by this guidance.
34-10-1A	(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.
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.
	(continued)				

ATA Chapter: 34 Navigation				
(1) System & Sequence Numbers 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 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.
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 MMEL.

Compliance with airworthiness requirements may lead to the installation of secondary (standby) attitude indication.

The above guidance item does not cover such standby airspeed indication. If a standby airspeed indication is required to comply with airworthiness requirements for certification of the aircraft, (e.g. CS-23 with EFIS, CS-25, etc.), no relief can be given unless an acceptable level of safety is demonstrated, on a case-by-case basis, in accordance with CS-MMEL.

34-10-1A:

For aircraft fitted with EFIS, the airspeed indicator displays (tape) are considered as the primary airspeed indication and are therefore required at each required pilot station.

For single pilot operations, if credit has been taken during the certification, on the availability of the off side primary airspeed indication in order to meet applicable requirements, this may result in additional restrictions.

34-10-1B:

Same as 34-10-1A, except for the rectification interval.

34-10-1C:

The airspeed indication is less critical for the helicopters to ensure a safe landing further to the loss of airspeed under day VFR overland operations.

Dispatch is authorised with one primary airspeed indication left.

VFR condition allows departure from field under IMC under special VFR procedures.

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers 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)	B	-	-	May be inoperative provided: (a) Flight is conducted under VFR, (b) An independent altitude indication is available at each required pilot's station, and (c) An additional independent altitude indication is operative for single pilot operations. Note: For single pilot operations, a secondary/standby or off-side indication may satisfy condition (b) or (c), if visibility requirements are met.
34-10-2C	(Aeroplanes) (continued)	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.

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers ITEM (continued)		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
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.

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers 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.
34-10-3-1E	(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) (continued)	C	-	1	Any in excess of one may be inoperative provided the operative slip/skid indication is on the pilot's-in-command station.

ATA Chapter: 34 Navigation				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				
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 & Helicopters

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers 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 & Helicopters

ATA Chapter: 34 Navigation				
(1) System & Sequence Numbers 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 (e.g. CS-27).

Sivil Havacılık Genel Müdürlüğü

Aircraft applicability: Aeroplanes

ATA Chapter: 34 Navigation						PAGE: 34-x
(1) System & Sequence Numbers Item		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions	
34-15-1	**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: Helicopters

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers 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:
In addition to the equipment required by CAT.IDE.H.145, helicopter involved in NVIS operations shall be equipped with a radio altimeter and a low height warning system giving visual and audio warnings selectable by the pilot and discernible during NVIS operation.

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers 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.
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
	(continued)				

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)					(c) Magnetic/standby compass is operative. **Procedures:** (O) To provide switching procedure to the flight crew to ensure adequate configuration of the displays in accordance with the above condition (b)
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 CS-MMEL 145 prior to considering using this guidance.

34-20-1D

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

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

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

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
34-22-1	**Magnetic/Standby compass**				
34-22-1A		B	-	0	May be inoperative for single pilot operations provided: (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.
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 CS-MMEL requirements.

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

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

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

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers 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 for 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 for 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.
34-20-2D	(Aeroplanes & Helicopters) (continued)	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).

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
	(continued)				
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)
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 (e.g. CS-23.1311 Electronic Flight Display or CS-25.1309) 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.

NAVIGATION EQUIPMENT

Summary of the guidance items:

ITEM	ATA
Marker Beacon (MC)	34-31-1
ILS (or MLS) (MC)	34-32-1
Airborne Collision Avoidance System (ACAS) (MC)	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

ATA Chapter: 34 Navigation				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
34-31-1 Marker Beacon (MC)				
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

ATA Chapter: 34 Navigation				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
34-32-1 ILS (or MLS) (MC)				
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

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
34-40-1	**Airborne Collision Avoidance System (ACAS)** **(MC)**				
34-40-1A		A	-	0	(O)(M) May be inoperative for a maximum of 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				
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.
	(continued)				

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
	(continued)				**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.
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.

34-40-1B covers the failure of the ACAS when the system is not required by operating rules.

Aircraft applicability: Aeroplanes

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers 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		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 use .To provide alternate navigation procedures, if applicable.
		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 & Helicopters

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers 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 & helicopters

ATA Chapter: 34 Navigation						
(1) System & Sequence Numbers 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

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers 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				
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.

(continued)

ATA Chapter: 34 Navigation				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				
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 & Helicopters:

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers 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.

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers 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.
	(continued)				

ATA Chapter: 34 Navigation

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)					
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.
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.
(continued)					

ATA Chapter: 34 Navigation					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
	(continued)				
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.

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: Non-pressurised Aeroplanes and Helicopters

ATA Chapter: 35 Oxygen					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
35-00-1	**Supplemental Oxygen System (Non- Pressurized Aircraft)**				
35-00-1-1	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.
35-00-1-2	Cabin Compartment				
35-00-1-2A		C	-	-	Any in excess of those required may be inoperative.
35-00-1-2B		C	-	-	One or more may be inoperative provided 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

ATA Chapter: 35 Oxygen					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
35-10-1	**Flight Crew Fixed Oxygen System (Supplemental)**				
35-10-1-1	Flight Crew Compartment Pressure Indications				
35-10-1-1A		C	-	-	(O)(M) One or more may be inoperative provided a procedure is used to ensure that oxygen supply is above the minimum for the intended flight. **Procedures:** (O)/(M) To provide an alternate means to compute the available oxygen quantity, e.g. using the pressure gauge located on the bottle.
35-10-1-2	Bottle Gauges				
35-10-1-2A		C	-	0	One or more may be inoperative provided 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.
35-10-1-3B		C	-	0	One or more may be inoperative provided the maximum altitude is limited to 10 000 ft pressure altitude.

Additional considerations:

N/A

Aircraft applicability: Aeroplanes

ATA Chapter: 35 Oxygen					
(1) System & Sequence Numbers 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)(M) May be inoperative provided: (a) Maximum altitude is limited to 10 000 ft pressure altitude, (b) An adequate supply of fresh air is provided to the cabin, and (c) Passengers are appropriately briefed. **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.
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,
	(continued)				

ATA Chapter: 35 Oxygen

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)					(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. **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)					

ATA Chapter: 35 Oxygen					
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)					**Procedures:** (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)(O) One or more passenger service units may be inoperative provided: (a) Affected seats are blocked and placarded to prevent occupancy, and (b) Units are operative for all operative passenger seats, toilet compartments and cabin crew locations. **Procedures:** (M) or alternatively (O) To give guidance reference for a practical mean of prohibiting the use of the affected seat(s).

Additional considerations:

35-20-1A:

The fresh air is non-re-circulated air.

35-20-1B:

The total amount of supplemental oxygen required in Portable Passenger Oxygen units (e) is in addition to the amount required for first-aid oxygen. The oxygen quantity requirements are based on CAT rules.

The intent of the CAT rules 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 30 000 ft would result in rapid loss of consciousness that justifies the automatic presentation.Failure of the automatic function is generally not detected until the maintenance task is performed and thus MMEL guidance to cover the loss of this particular function is only justified to release the aircraft after maintenance.

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. The associated limitations are based on CAT.IDE.A.235 (c) rule. It is expected that the descent performance dispatch condition (b) is explicited at aircraft type MMEL 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.

Sivil Havacılık Genel Müdürlüğü

Aircraft applicability: Aeroplanes

ATA Chapter: 35 Oxygen				
(1) System & Sequence Numbers 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)(O) Any portable oxygen dispensing unit 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.

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

ATA Chapter: 46 Information Systems

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
46-20-1	**Electronic Flight Bag (EFB) Systems**				
46-20-1A		C	-	0	(M)(O) May be inoperative provided 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) (O) Any in excess of one may be inoperative provided the affected EFB is secured by an alternative means.
46-20-2-1B		C	-	0	(M) (O) May be inoperative provided: (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				
46-20-2-2A		C	-	1	(M) (O) Any in excess of one may be inoperative provided an alternative means of data connectivity is used.
		C	-_	0	(M) (O) May be inoperative provided alternate procedures are established and used where operating procedures require the use of the affected EFB.

(continued)

ATA Chapter: 46 Information Systems				
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch / (5) Remarks or Exceptions
(continued)				**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) (O) Any in excess of one may be inoperative provided an alternative power source is available and can be used for the planned duration of use of the affected EFB.
46-20-3B		C	-	0 (M) (O) May be inoperative provided 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.

Summary of the guidance items:

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

Aircraft applicability: Aeroplanes

ATA Chapter: 52 Doors				
(1) System & Sequence Numbers 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)(M) One, on each deck, may be 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 (f) All the door/exit markings, signs and lights associated with the affected door/exit must be obscured, as applicable.
(continued)				

ATA Chapter: 52 Doors				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				**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; — 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.
(continued)				

ATA Chapter: 52 Doors

(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)					(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.
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.
(continued)					

ATA Chapter: 52 Doors

(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				
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, (f) 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 (g) Flight crew members are to review the evacuation procedure before each flight.
(continued)				

ATA Chapter: 52 Doors				
(1) System & Sequence Numbers ITEM	(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
(continued)				**Procedures:** (O) To ensure that: — All crew members are briefed on the location 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.
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):

(1) the external exit opening means does not function correctly;

(2) the internal exit opening means does not function correctly;

(3) the exit opening power assist mechanism does not function correctly, unless already covered by a dedicated MMEL item;

(4) the door gust lock does not function correctly unless already covered by a dedicated MMEL item;

(5) the assisting evacuation means, if required, is inoperative;

(6) the exit marking or locator sign is inoperative;

(7) the floor proximity exit marker is inoperative;

(8) the exit interior emergency lighting is inoperative; or

(9) the exit exterior emergency lighting or slide illumination, in case of night operation, is inoperative.

Passenger/Seat Occupancy Reduction Guidance:

1. GENERAL

(1) Any aeroplane configured with two pairs of Type III or larger exits only, is considered to be in an airworthy condition with one passenger emergency exit inoperative provided that the number of passengers is reduced to less than 20 and the entry door is operative.

(2) Any aeroplane configured with more than two pairs of exits is considered to be in an airworthy condition with one passenger emergency exit inoperative provided that the number and distribution of passengers is in accordance with the maximum permitted (for the complete aeroplane and in each zone) capacity tables (MPC tables) that are specified in the relevant MEL in accordance with paragraph 2 below.

MPC tables are to be established for each exit inoperative configuration in every aeroplane type and model and for each individual passenger seating configuration that shall be operable with the respective exit inoperative.

(3) ***Not more than one exit may be inoperative.***

In this respect, twin overwing exits (separated by less than three rows) in a side of the aeroplane are considered as a single exit if declared inoperative because of a single common failure (e.g., but not limited to a common slide failure or a common exit locator sign failure.)

2. Calculation of MAXIMUM PASSENGER CAPACITY (MPC) TABLES

(a) General

(1) For the calculation, it is to be assumed that **both exits of the exit pair are inoperative, if one exit fails.**

An exit pair consists of two exits located essentially directly opposite each other but the combination of a single side exit and a tailcone exit is also considered to be a pair of exits.

(2) A zone is defined as any section of the passenger cabin which is longitudinally bounded by a pair of exits on both ends or, where passenger seats are installed beyond the most forward or aft pair of exits, by the start or end of the cabin and the nearest pair of exits. If a zone has only an exit pair on one end, it is called a dead end zone.

A zone may also exist between the last exit pair and the tailcone exit (opening), or between an exit pair and a single ventral exit, if there are passenger seats installed in this area.

In aeroplanes where a single side exit and a tailcone exit are considered to be an exit pair and where seats are installed behind the side exit, the last zone starts and the penultimate zone ends at a centre line midway between the side exit and the tailcone exit (opening). The last zone in this configuration is also considered to be a dead end zone.

Note: Seats installed between the side exit and the tailcone exit are considered to be in the zone forward (or aft respectively) of the centreline midway between the two single exits if their front studs are forward (or aft respectively) of the centreline.

(3) 'Aeroplane capacity' means the number of passengers calculated for the aeroplane; 'zone capacity' means the number of passengers calculated for a designated zone of the passenger cabin.

(4) The maximum number of passengers permitted for each *operative* exit pair/exit is defined as follows:

Table 1

Emergency exit	Passenger exit/ exit pair rating
Type A (exit pair)	110
Type B (exit pair)	75
Type C (exit pair)	55
Type I (exit pair)	45
Type II (exit pair)	40
Type III (exit pair)	35
Adjacent type III (less than 3 seat rows)* see Note 2	65
Type IV (exit pair)	9
Ventral exit (single exit)	12
Large tailcone exit (single exit)	25
Other tailcone exit (single exit)	15
Large tailcone exit combined with a Type I or larger exit (exit pair)	45

Note 1: Type B and C are listed above, 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.

In case of a single common failure of the adjacent exit pairs, all four exits are assumed to be inoperative. In case of a non-common single failure related to one exit out of the four exits only, one operative Type III exit pair with a rating of 35 remains.

Note 4: Exits of an exit pair that are not of the same size, e.g. a Type III exit on one side of the fuselage and a Type II exit opposite, have the (exit pair) rating of the smaller exit type.

Note 5: A *large* tailcone exit is an exit incorporating a floor level opening of not less than 20 inches wide by 60 inches high, with corner radii not greater than 7 inches, in the pressure shell and incorporating an approved assist means.

Note 6: Any *other* tailcone exit is an exit incorporating an opening in the pressure shell which is at least equivalent to a type III exit and has the top of the opening not less than 56 inches from the passenger compartment floor.

Note 7: The rating of each emergency exit in the passenger compartment installed in excess of the minimum number of required passenger emergency exits is zero for the calculation of the Maximum Passenger Capacity.

(b) Calculation method

Based on the passenger seat layout approved for the individual aeroplane, a drawing of the passenger compartment must first be established clearly showing:

- the position of exits,
- the type of exits,
- the exits above the waterline ('ditching exits')
- the passenger zones,
- the number and position of all passenger seats in each zone,
- the overload capacities of the rafts available at each exit.

Using the above drawing, initial aeroplane capacities for the different inoperative exit cases are to be calculated according to (b) (1) below to ensure that an acceptable level of safety is maintained.

Then initial zone capacities are to be calculated for each case according to (b) (2) below for all zones to avoid overloading of individual zones and to ensure that passenger seating arrangement is optimized.

Finally, the *maximum permitted zone capacities* (MPZC) are to be calculated according to (b) (3) below.

(1) Initial aeroplane capacity:

If only one of the operative exit pairs of the aeroplane is a Type A, Type B, or Type C, this exit pair has to be downrated to Type I before starting the following calculation.

The initial aeroplane capacity with one exit inoperative is the most limiting figure of the following:

(i) the sum of the passenger exit ratings for all *operative exit pairs*/exits as specified in table 1 of section 2(a) above;

(ii) the maximum 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;

(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.

(iv) 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.

(v) 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. the sum of the overload capacities of all slide rafts of operative exit pairs including the overload capacity of any life raft taking into account the loss of one slide/life raft of the **largest rated** capacity

whichever is the most limiting.

(2) Initial zone capacities:

To get the initial zone capacities, the following criteria must be applied one after the other using the most limiting zone capacity achieved so far for the next calculation step.

(i) **Individual zone capacity limitation:**

The capacity of each individual zone shall not exceed the sum of the exit ratings of the operative exit pairs bordering the zone.

In addition, passengers shall not be seated on seat rows adjacent to the affected exit(s), 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.

(3) Maximum permitted zone capacities (MPZC):

The initial zone capacities must be reduced to maximum permitted zone capacities, the sum of which is limited by the initial aeroplane capacity.

The reduction may be applied equally to all zones or mainly to the zone(s) adjacent to the inoperative exit, as appropriate.

ATA Chapter: 52 Doors						
(1) System & Sequence Numbers ITEM		(2) Rectification Interval	(3) Number installed	(4) Number required for dispatch	(5) Remarks or Exceptions
52-51-1	**Flight Crew Compartment Door**				
52-51-1-1	Locking System				
52-51-1-1A		B	-	0	(M) (O) May be inoperative provided: (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.
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.