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CRJ-900

Minimum Equipment List

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RR-i

REVISION 11

08 JAN 21

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**PSA Airlines, Inc.
CRJ-900 MEL/CDL Manual**

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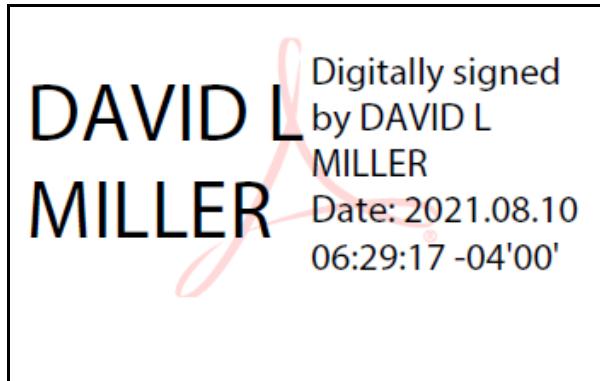


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REVISION 10

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Chapter 1: Preamble**1.1 Preamble (FAA MMEL Policy Letter 34, Revision 4)**

FEDERAL AVIATION ADMINISTRATION

MASTER MINIMUM EQUIPMENT LIST

Preamble
(Effective 6/14/89)

The following is applicable for authorized certificate holders operating under Title 14 Code of Federal Regulations (14 CFR) Parts 121, 125, 129, 135: 14 CFR require that all equipment installed on an aircraft in compliance with the Airworthiness Standards and the Operating Rules must be operative. However, the Rules also permit the publication of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary in the interests of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system or installed component may not be necessary when the remaining operative equipment can provide an acceptable level of safety.

A Master Minimum Equipment List (MMEL) is developed by the FAA, with participation by the aviation industry, to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The FAA approved MMEL includes those items of equipment related to airworthiness and operating regulations and other items of equipment which the Administrator finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations; it does not contain obviously required items such as wings, flaps, and rudders. The MMEL is the basis for development of individual operator MELs which take into consideration the operator's particular aircraft equipment configuration and operational conditions. Operator MELs, for administrative control, may include items not contained in the MMEL; however, relief for administrative control items must be approved by the Administrator. An operator's MEL may differ in format from the MMEL, but cannot be less restrictive than the MMEL. The individual operator's MEL, when approved and authorized, permits operation of the aircraft with inoperative equipment. Equipment not required by the operation being conducted and equipment in excess of 14 CFR requirements are included in the MEL with appropriate conditions and limitations. The MEL must not deviate from the Aircraft Flight Manual Limitations, Emergency Procedures or with Airworthiness Directives. It is important to remember that all equipment related to the airworthiness and the operating regulations of the aircraft not listed on the MMEL must be operative.

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as necessary are specified in the MEL to ensure that an acceptable level of safety is maintained.

The MEL is intended to permit operation with inoperative items of equipment for a period of time until repairs can be accomplished. It is important that repairs be accomplished at the earliest opportunity. In order to maintain an acceptable level of safety and reliability the MMEL establishes limitations on the duration of and conditions for operation with inoperative equipment.

The MEL provides for release of the aircraft for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Aircraft Maintenance Record/Logbook as prescribed by 14 CFR. The item is then either repaired or may be deferred per the MEL or other approved means acceptable to the Administrator prior to further operation. MEL conditions and limitations, do not relieve the operator from determining that the aircraft is in condition for safe operation with items of equipment inoperative. When these requirements are met, an Airworthiness Release, Aircraft Maintenance Record/Logbook entry, or other approved documentation is issued as prescribed by 14 CFR. Such documentation is required prior to operation with any item of equipment inoperative.

Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. When operating with multiple inoperative items, the interrelationships between those items and the effect on aircraft operation and crew workload will be considered. Operators are to establish a controlled and sound repair program including the parts, personnel, facilities, procedures and schedules to ensure timely repair.

WHEN USING THE MEL, COMPLIANCE WITH THE STATED INTENT OF THE PREAMBLE, DEFINITIONS, AND THE CONDITIONS AND LIMITATIONS SPECIFIED IN THE MEL IS REQUIRED.

Chapter 2: Policy and Procedures

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Chapter 2: Policy and Procedures**2.1 Policy**

The original revision of the PSA Airlines, Inc. MEL manual was written using the Federal Aviation Administration Master Minimum Equipment List (MMEL) revision number 11 dated 22 SEP 03.

Reference – FAR 121.628 (a)(4) and Ops Spec D095

• Note •

The PSA Airlines MEL/CDL/Deferred Maintenance Program is revised by an SMS committee comprising members of Maintenance, Flight, and Dispatch to ensure consistency with the program through all affected departments and manuals.

2.2 General

The following procedures will be used in each case to assist in timely correction of discrepancies, as well as keeping the flight crew and maintenance departments informed.

- Prior to each flight, the PIC must review the deferred items on the Aircraft Maintenance/Flight Log hard card list to determine if there are any deferred items that require the PIC to operate the aircraft in accordance with specific operational procedures as required by and contained in the approved MEL.
- The PIC will ensure all paperwork has been completed and full compliance with the placarding, operational, and/or maintenance procedures and the limitations specified in the MEL.

2.3 Communication

Following the identification of malfunctioning or inoperative equipment, the Technician or PIC will:

- Enter the discrepancy in the Aircraft Maintenance/Flight Log (Technician/Pilot) or on the Aircraft Work Order (Technician).
- Review the approved MEL to determine if the aircraft may continue flight operations.
- Notify Maintenance Control to coordinate the decision to and the deferral of the malfunctioning or inoperative equipment.

• Note •

PSA will not use an MEL for any aircraft that is not specifically authorized by operations specifications D095.

• Note •

PSA will not use an MEL for a component or system to provide relief due to negligence or oversight, i.e. part installed is not under correct effectiveness for aircraft or installed incorrectly, or to allow for more time to C/W a scheduled inspection task on a component or system.

• Note •

PSA will not use an MEL for a component or system with a wiring or wiring related issue to provide relief. The wiring issue must be repaired prior to release or written engineering authorization requested and received. If an engineering disposition is provided for continued service, all instructions will be followed including the application of any deferrals referenced in the document.

• Note •

PSA will not include in its MEL, any STC-installed item prior to inclusion in aircraft-specific MMEL.

2.3.1 Maintenance Controller and Pilot Notification to Dispatcher

OFF GATE PROCESS: When controllers are issuing or removing an MEL/CDL item with a pilot via telephone or the radio with the aircraft off the gate, neither party will complete the call until the pilot has been transferred AND connected to the responsible Dispatcher.

When controllers are issuing or removing an MEL/CDL item with a pilot via the telephone or the radio, every attempt will be made to connect the pilot to a dispatcher. The Dispatcher and the pilot must review the deferred or missing item, as well as restrictions that apply, and the release must be amended accordingly. The captain will be notified by Maintenance Control that he or she is not cleared for departure until an amended release has been issued by dispatch.

2.4 Logbook Entries – Corrective Action Block

Following the communication process, the PIC or Technician will enter the following statement in the corrective action block of the numbered Aircraft Maintenance/Flight Log or Work Order: Deferred (Nomenclature of System or item being deferred) per MEL XX-XX-XX, CAT X, (if applicable: Option X) and the Date of Deferral.

1. For any deferral approved by Maintenance Control, the PIC or Technician will enter "MOC #XXXXX" in the TECH SIGNATURE block. They will use the Emp # of the approving controller.
2. When an MEL is being applied by a Technician, the Technician will also sign the signature block of the logbook and enter their appropriate number.
3. When an MEL is being applied by a PIC, the PIC will enter their name in the body of the Action Taken and enter their appropriate number.

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2.5 Deferral Procedures

The Company's policy is to repair all noted defects as quickly as possible. Every effort is made to maintain the normal complement of equipment operative at all times. However, to avoid a delay or cancellation, corrective action may be deferred by Maintenance and/or Flight Crew personnel as permitted by the MEL/CDL.

Flights under 14 CFR Parts 91 or 121 may not be initiated with inoperative instruments or equipment installed unless such operation with inoperative equipment is permitted by an approved MEL or CDL. Approved MEL/CDL items include those items of equipment related to airworthiness and operating regulations and other items that may be inoperative but still maintain an acceptable level of safety by appropriate conditions and limitations.

2.5.1 Responsibility

- Maintenance Operations Control (MOC)
 1. The Maintenance Controller on duty is responsible to maintain and communicate MEL/CDL status in accordance with the General Maintenance Manual (GMM) (Refer to GMM Section 5.2: Deferral Procedures).
- Aircraft Maintenance Technician (AMT)
 1. The AMT is responsible to properly document any required maintenance actions and follow the placarding requirements in accordance with the GMM (Refer to GMM 5.2.7 Opening Maintenance MEL/CDL Deferral Procedures).
 2. If items are deferred due to the unavailability of parts, Aviation Maintenance Technicians (AMTs) are responsible to ensure that an order for the part has been submitted in accordance with the GMM (Refer to GMM 5.2.9 Deferral Coordination and Management).
- Flight Crew
 1. Upon discovery of a defect or malfunction of equipment, before, or after a flight, the Pilot-in-Command (PIC) will enter a concise description in the Aircraft Maintenance Logbook (AML) in accordance with the procedures contained in the Flight Operations Manual (FOM) (Refer to FOM 11.3.4 Aircraft Maintenances Log Procedures).
 2. The PIC will ensure that all applicable "M" and "O" procedures have been complied with, required placarding has been completed, and that MOC has been properly notified of the discrepancy prior to further flight.
 3. Prior to flight, the PIC will assess the effect of multiple inoperative items and the increased workload on safety. This would include review of all assigned MEL deferrals and the aircraft for their relationships to one another, as well as the provisos for each deferral that may dictate to consider another system inoperative. Any restrictions imposed by an assigned MEL item must be followed. These restrictions may be listed in either the "Flight Crew Operating Procedures" column or the "Remarks/Exceptions" column of the appropriate MEL item(s).

2.6 Operational Restriction

2.6.1 General

The Company requires each person who performs maintenance on critical systems effecting Reduced Vertical Separation Minimums (RVSM), and Lower Landing Minimums (LLM) to be trained, qualified, and authorized in order to maintain operational status.

RVSM airspace is defined as airspace between FL290 (29,000 ft) and FL410 (41,000 ft) where aircraft are required to be vertically separated by 1,000 ft. The Company aircraft are certified for RVSM operations.

- Maintenance personnel are to refer to GMM Appendix E for RVSM policies, procedures, and qualification requirements.
- Flight Crew personnel are to refer to FOM Chapter 5, Operational Policy for RVSM policies and procedures.

Category I instrument approach is an authorized precision or non-precision instrument approach which is conducted with a minimum height for IFR flight not less than 200 ft (60 m) above the touchdown zone and a minimum visibility/RVV not less than 1/2 statute mile or RVR 1800.

Category II instrument approach is an authorized instrument approach using an instrument landing system to the lowest applicable Category II minima (and below the lowest Category I minima).

- Maintenance personnel are to refer to GMM Appendix D for Lower Landing Minimums (LLM) policies, procedures, and qualification requirements.
- Flight Crew personnel are to refer to FOM Chapter 5.10.6 Category II Operations, CAT II Lower Landing Minimums (LLM) Operations for LLM policies and procedures.

2.6.2 System Identification

Any system listed in the MEL that affects an operational restriction will have a note in the Remarks and Exceptions section indicating one or more of the below associated Administrative Control Item (ACI) must be applied:

- ACI Item 90-10-01 to restrict RVSM Operations.
- ACI Item 90-10-04 to restrict Category II Operations.

These operational restriction ACI are contained in Chapter ATA 90 of this manual.

When an operational restriction ACI is applied, a placard shall be placed below the Captain's EFIS Malfunction Display in accordance with the associated ACI placarding instructions. This placard must be clearly visible to the flight crew, readily identify the operational restriction(s), and must remain in place until the associated MEL(s) are corrected and closed.

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2.7 MEL

1. **Repair Category A.** The repair time intervals for repair category A items vary by item. The repair time interval will be specified in the “Remarks or Exceptions” section of the MEL. For time intervals specified in “calendar-days” or “flight days,” the day the malfunction was recorded in the aircraft maintenance record/logbook is excluded. This day is known as the “Day of Discovery”. For all other time intervals (e.g., cycles or hours), repair tracking begins at the point when the malfunction is discovered and recorded.
2. **Repair Category B.** All repair category B items must be repaired within 3 consecutive calendar-days (72 hours, recorded in either universal coordinated time (UTC) or local time), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook (Day of Discovery). For example, if a repair category B item was recorded at 10:00 a.m. on January 26, the 3-day interval would begin at midnight on January 26 and end at midnight on January 29.
3. **Repair Category C.** Repair category C items must be repaired within 10 consecutive calendar-days (240 hours, recorded in either UTC or local time), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook (Day of Discovery). For example, if a repair category C item was recorded at 10:00 a.m. on January 26, the 10-day interval would begin at midnight on January 26 and end at midnight on February 5.
4. **Repair Category D.** Repair category D items must be repaired within 120 consecutive calendar-days (2,880 hours), excluding the day the malfunction was recorded in the aircraft maintenance log and/or record (Day of Discovery).

2.8 Placard / Sticker

The Maintenance Controller will notify the PIC or Technician that the item being deferred requires a placard. Placards are in the form of a white sticker stored in the flight can. The PIC or Technician will remove the required number of white stickers from the flight can and write “INOP PER MEL XX-XX-XX” and the date of deferral on the sticker and install it in accordance with the MEL procedure.

Example: INOP PER MEL 33-41-04, 8-01-03

2.9 Specific Maintenance, Operations and Dispatcher Procedures (M), (M/FC), (O) and (D)

- Technicians may only perform procedures labeled as M or M/FC. These procedures must be documented in the AML and/or M&E system.
- Qualified flight crewmembers may only perform procedures labeled M/FC or O. Procedures labeled M/FC and performed by flight crewmembers are to be documented in the AML.
- Dispatch personnel are only allowed to perform procedures labeled as D. These procedures are not required to be documented in either the AML or M&E system.
- **The Technician** performing the procedure will make an entry stating how the M function was complied with, such as: “M’ procedure C/W IAW xxx by performing xxx” (maintenance procedure complied with, in accordance with the reference for the M function; AMM reference or procedure stated in MEL task and what action was performed, unless specifically stated in the sign-off or within the AMM task) with the respective deferral.
 - Example: “M function C/W IAW AMM 21-24-00-040-802”
 - Example: “M function C/W IAW MEL 25-11-01-2 by securing the armrest in the upright position.”
 - The Technician will endorse it with a legible signature and employee (or certificate) number in the Tech Signature block of the Aircraft Maintenance/Flight Log or Work Order, with the respective deferral.
- **The Flight Crew Member** performing the “M/FC” procedure will make the appropriate entry: “M/FC’ procedure C/W” (maintenance/flight crew procedure complied with) and endorse it with a legible signature and employee number in the body of the Action Taken block of the Aircraft Maintenance/Flight Log.
 - The flight crew member will then enter “MOC #XXXXX” in the Tech Signature block, per Section 2.4, “[Logbook Entries – Corrective Action Block](#)” of this book.

• Note •

Any and all circuit breakers that are pulled and collared must be recorded in the Action Taken block. This entry will be made with the “M” or “M/FC” procedure.

• Note •

During the deferral process, some items are deactivated by pulling and collaring circuit breakers. When this is accomplished, you may receive an EICAS message. This type of message is acceptable since pulling the circuit breaker causes the message.

- Any subsequent repetitive maintenance procedures will be documented and signed off in the Aircraft Maintenance Flight/Log. For example:
 - Discrepancy – M function needs C/W for MEL 29-32-01.
 - Action taken – M function complied with by verifying proper hydraulic fluid quantity IAW AMM TASK 12-12-29-611-801-A01.
 - For any flight crew member performing a repetitive M/FC, once completed the crewmember will put a diagonal line through the tech signature block.
- The PIC is responsible to ensure compliance with all “O” (Operations) procedures.
- The Dispatcher is responsible to ensure compliance with all “D” (Dispatcher) procedures.
- The Maintenance Controller on duty who deferred the item will list the item in the M&E system.
- The PIC will ensure all paperwork has been completed and full compliance with the placarding, operational, and/or maintenance procedures and the limitations specified in the MEL.

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2.10 Maintenance Review and Repair

- The Maintenance Operations Control and Maintenance Planning departments will review the MEL list on a daily basis for compliance within the repair interval specified.
 1. **Category A:** Items in this category shall be repaired within the time interval specified in the remarks column of the associated MEL.
 2. **Category B:** Items in this category shall be repaired within three (3) consecutive calendar days (72 hours), excluding the calendar day the malfunction was recorded in the aircraft maintenance log and/or record. For example, if it was recorded at 10 a.m. on January 26th, the three-day interval would begin at midnight the 26th and end at midnight the 29th.
 3. **Category C:** Items in this category shall be repaired within ten (10) consecutive calendar days (240 hours), excluding the calendar day the malfunction was recorded in the aircraft maintenance log and/or record. For example, if it was recorded at 10 a.m. on January 26th, the 10-day interval would begin at midnight the 26th and end at midnight February 5th.
 4. **Category D:** Items in this category shall be repaired within one hundred and twenty (120) consecutive calendar days (2,880 hours), excluding the day the malfunction was recorded in the aircraft maintenance log and/or record.
- The inoperative item will either be repaired or replaced upon return to a maintenance base within the allotted repair interval as specified in the approved MEL and documented in the Aircraft Maintenance/Flight Log or Work Order.
- When the corrective action is accomplished to clear an MEL, the Technician must review the associated MEL in the MEL manual.
 1. The Technician must ensure that any Maintenance "M" functions that may have been performed in order to deactivate the item or system in order to place the item or system on MEL are re-activated.
 2. The Technician performing the corrective action to clear the MEL is responsible for ensuring any MEL "M" functions are re-activated.
- Once the item deferred is repaired or replaced, the Lead Technician or the Technician on duty will sign the block "Technician correcting deferred item" on the Aircraft Maintenance/Flight Log hard card and remove the white MEL sticker. He/she will then update the M&E system and accomplish the following:
 1. As deferrals are cleared (MELs, CDLs, NEF), the Technician signing them off will alert the Maintenance Supervisor or Lead Technician on duty.
 2. During the operational day, the Maintenance Supervisor or Lead Technician will notify Maintenance Control of any cleared deferrals. Maintenance Control will notify dispatch either verbally or via electronic means of a change in aircraft operational status.

• Note •

A positive response from dispatch is required when making a change to the aircraft operational status by either applying or clearing a deferral during the operational day.

3. The Maintenance Supervisor or Lead Technician will scan the signed paperwork (Logbook/Work Order and hard card) and upload it to the shared drive under each respective base's night maintenance folder.
 4. The sub folder that is to be used will be labeled "Cleared Deferrals".
- If an unsuccessful attempt is made to clear a deferral that has a maintenance function, the associated maintenance function MUST be entered in the logbook and signed off as being complied with by the Technician as defined in [2.6, "Operational Restriction"](#).

2.11 Extension

In the event that the item cannot be repaired within the specified time, the Maintenance Control Duty Manager will complete an MEL Extension Form, available in Chapter 15 of the GMM, with the following data:

- Current day's date
- Aircraft N Number
- MEL Discrepancy Number
- Date the item was Deferred.
- Description of Deferred Item.
- Justification for extension (P.O. if required)
- Approved MEL extension date.
- Signature of person approving extension.
- Date repair is completed on MEL.
- Completed forms will be sent via email to the ADOMO and DQC.

• Note •

Items classified as Category A or category D in the MEL can not be extended.

2.11.1 Approval

The completed form will be sent to the ADOMO and DQC via email.

- Upon approval, the Director of Quality or Maintenance Operations Control Manager will notify the certificate holding Certificate Management Office (CMO) within 24 hours by email with a copy of the completed form.
- The Maintenance Control Duty Manager will then enter the extension limit date into the computer systems.
- If an additional extension is required after the continuing authorization – single extension privilege has been exercised, it must be approved by the principal inspectors (PIs) prior to expiration of the current extension time period.

Chapter 3: Definitions

3.1 Format Description**3.1.1 Item Overview**

The basic format selected for the MEL is tabular and incorporates a header and footer for each deferrable item.

Header

Each page contains a header identifying each item's:

- Stem number in ##-##-## format or ##-##-##-# if required

• Note •

The four (##-##-##-#) numeral format is required when an item contains multiple components which can be independently deferred.

- Item name
- Repair category
- Quantity installed
- Minimum required

Remarks and Exceptions

This section may include a statement(s) either prohibiting or permitting operation with a specific number of instrument and equipment items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes. This can include specific repair intervals and procedures that are complied with by technicians, flight crew or dispatch personnel.

Body

The area between the header and footer which may span multiple pages that contains:

- Remarks row
 - At least one horizontal row with a statement either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes.
 - Additional repair categories, quantities installed, and minimums required.
- Placard requirements detailing the positioning of the placard/sticker.
- **(M)** Maintenance specific procedures
- **(M/FC)** Maintenance specific procedures that can be accomplished by a qualified flight crewmember.
- **(O)** Operations specific procedures
- **(D)** Dispatcher specific procedures
- An “- OR -” providing a choice of specific procedure
- **Continued** found in the lower right hand corner signifying the continuation of the procedure on the following page.

Footer

The footer occurs only at the termination of all remarks and procedures and not at the bottom of each page. It contains the following:

- The word END signifying the termination of all remarks and procedures
- The revision date of the Master Minimum Equipment List (MMEL)

3.1.2 Page and Revision

- Each page contains a page header and footer
- The Header includes:
 - ATA Chapter Title.
 - Page number in ##-## format where the first two numerals are the ATA Chapter number and the last the sequential page number.
 - The Company revision date.
- The Footer includes:
 - The company proper name and dba name
 - The title of the manual
- A vertical bar (change bar) in the outside margin indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.

3.2 Definitions

(D) Symbol

Indicates a requirement for a specific Dispatcher-related procedure which must be accomplished prior to operation with the item listed inoperative. These procedures are accomplished by the Dispatcher responsible for the flight. Appropriate procedures are required to be published as part of the operator's manual or MEL.

• Note •

The (M) (M/FC) (O) and (D) symbols are required in the operator's MEL unless otherwise authorized by the Administrator.

(M) Symbol

Indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. These procedures are accomplished by maintenance personnel.

These procedures require specialized knowledge or skill, or require the use of tools or test equipment. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

(M/FC) Symbol

Indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. These procedures are accomplished by maintenance personnel or a qualified flight crewmember. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

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(O) Symbol

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

Administrative Control Item (ACI)

An ACI is an item that is not contained in any MMEL. An operator may include an ACI in their MEL for tracking and informational purposes only. An ACI may not provide any kind of MEL relief. However, an operator may list an ACI in their MEL if conditions and limitations providing relief are contained in another approved document (e.g., Structural Repair Manual (SRM)).

Airplane Flight Manual (AFM)

The FAA-approved AFM is the document approved by the responsible FAA Aircraft Certification Office (ACO) during type certification. The approved flight manual for the specific aircraft is listed on the applicable Type Certificate Data Sheet (TCDS). The approved flight manual is the source document for operational limitations and performance parameters for an aircraft. The FAA requires an approved flight manual for aircraft type certification.

Code of Federal Regulations (CFR) and Federal Aviation Regulations (FAR)

CFR, the current term, and FAR both refer to the applicable portions of the Federal Aviation Act and Code of Federal Regulations.

Concession Support Letter (CSL)

A letter of support to concur with the operator's request for a request to their local regulatory authority for a deviation to published aircraft operation. The CSL is considered to be acceptable data and is aircraft serial number specific with limited time validity. It will include limitation and operator action if required.

Considered Inoperative

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

Continuing Authorization – Single Extension

An aircraft operator who has the authorization to use an FAA-approved MEL may also have the authority to use a continuing authorization to approve a single (one-time) extension to the repair interval for category B or C items in accordance with Operations Specification D095. Continuing Authorization – Single Extension is not authorized for repair category A and D items.

Day of Discovery

This is the calendar-day an equipment/instrument malfunction was recorded in the aircraft maintenance record/logbook. This day is excluded from the calendar-days or flight-days specified in the MMEL for the repair interval of an inoperative instrument and/or equipment item. This provision is applicable to all MMEL items; i.e., categories A, B, C, and D.

Deactivated and/or Secured

When the MEL refers to an instrument and/or equipment item as deactivated and/or secured, the specified component must be put into an acceptable condition for safe flight. An acceptable method of deactivating and/or securing will be established by the aircraft operator.

Extended Range (ER) Operations

R refers to extended range operations (ETOPS) of an airplane with operational approval to conduct ETOPS in accordance with the applicable regulations.

• Note •

Extended Range Operations are not approved per PSA Operation Specifications.

Flight Day

A flight-day is a 24-hour period (from midnight to midnight) local time, as established by the aircraft operator, during which at least one flight is initiated for the affected aircraft.

Icing Conditions

An atmospheric environment that may cause ice to form on the aircraft (structural) or in the engine(s) (induction).

Inoperative

Means a system and/or component malfunction to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limit(s) or tolerance(s).

Inoperative Components of an Inoperative System

Inoperative instrument and equipment items, which are components of a system that is inoperative, are usually considered components directly associated with and having no other function than to support that system.

• Note •

Warning/Caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the MEL.

Is Not Used

The phrase "Is Not Used" in the provisos, remarks or exceptions for an MEL instrument or equipment item may specify that another item in the MEL "is not used". In such cases, crewmembers must not activate, actuate, or otherwise utilize that item under normal operations. It is not necessary for aircraft operators to accomplish the (M) procedure(s) associated with the item. However, operational requirements must be complied with, and an additional placard must be affixed, to the extent practical, adjacent to the control or indicator for the item that is not used. This informs crewmembers that an instrument or equipment item is not to be used under normal operations.

M&E System

Maintenance and Engineering System. PSA Airlines utilizes the Maintenix software system to record and track aircraft maintenance, configuration control, parts, Airworthiness Directives, inspections, repairs, parts vendors, tooling and associated administrative functions.

Chapter 3: Definitions

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Manuals

- AMM: Bombardier Aerospace Aircraft Maintenance Manual
- FOM: PSA Airlines, Inc. Flight Operations Manual
- POH: PSA Airlines, Inc. Pilot Operating Handbook
- QRH: PSA Airlines Inc. Quick Reference Handbook

Nonessential Equipment and Furnishing (NEF)

NEFs are those items installed on the aircraft as part of the original type certification (TC), STC, engineering order, or other form of alteration that have no effect on the safe operation of flight and would not be required by the applicable certification rules or operational rules. They are those items that, if inoperative, damaged, or missing, have no effect on the aircraft's ability to be operated safely under all operational conditions. NEF items are not instrument and equipment items already identified in the MEL or CDL of the applicable aircraft. They do not include instrument and equipment items that are functionally required to meet the certification rule or for compliance with any operational rule.

Notes

Notes provide additional information for crewmember or maintenance consideration. Notes are used to identify applicable material, which is intended to assist with compliance, but do not relieve the aircraft operator of the responsibility for compliance with all applicable requirements. Additional notes may be amended, deleted, or added to the MEL by the aircraft operator, as appropriate. Notes are not a part of the provisos.

Operative

An operative system and/or component will accomplish its intended purpose and is consistently functioning normally within its design operating limit(s) and tolerance(s). When an MEL item specifies that an item of equipment must be operative, it does not mean that its operational status must be verified; it's to be considered operative unless reported or known to be malfunctioning. When an MEL item specifies that an item of equipment must be verified operative, it means that it must be checked and confirmed operative at the interval(s) specified for that MEL item. When an MEL item specifies that an item of equipment must be verified but no interval is specified, verification is required only at the time of deferral.

Other terminology sometimes used interchangeably with "operative" within the MEL is "operates normally", "fully operative", and "considered operative". The aircraft operator's MEL may incorporate standardized terminology of the aircraft operator's choice to specify that an item of equipment must be operative, provided the aircraft operator's MEL definitions indicate that the selected "operative" terminology means that the required item of equipment will accomplish its intended purpose and is consistently functioning normally within its design operating limit(s) and tolerance(s).

Placard/Sticker

Each inoperative item must be placarded to inform and remind the crew members and maintenance personnel of the equipment condition.

• Note •

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

Repair Category

All users of an MEL approved under parts 91K, 121, 125, 129, 135, and 142 must effect repairs of inoperative instrument and equipment items, deferred in accordance with the MEL, at or prior to the repair times established by the following letter designators. Part 91 MEL users (D095/D195 LOAs) are not required to comply with the repair categories, but will comply with any provisos defining a repair interval (flights, flight legs, cycles, hours, etc.):

Category A

This category item must be repaired within the time interval specified in the "Remarks or Exceptions" column of the aircraft operator's approved MEL. For time intervals specified in "calendar days" or "flight days", the day the malfunction was recorded in the aircraft maintenance record/logbook is excluded. For all other time intervals (i.e., flights, flight legs, cycles, hours, etc.), repair tracking begins at the point when the malfunction is deferred in accordance with the operator's approved MEL.

Category B

This category item must be repaired within 3 consecutive calendar-days (72 hours) excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the 3-day interval would begin at midnight the 26th and end at midnight the 29th.

Category C

This category item must be repaired within 10 consecutive calendar-days (240 hours) excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the 10-day interval would begin at midnight the 26th and end at midnight February 5th.

Category D

This category item must be repaired within 120 consecutive calendar-days (2880 hours) excluding the day the malfunction was recorded in the aircraft maintenance record/logbook.

System Numbers

Are based on the Air Transport Association (ATA) Specification Number 100 and items are numbered sequentially.

Takeoff

Takeoff is the act of beginning a flight in which an aircraft is accelerated from a state of rest to that of flight. For the purposes of MEL relief, this translates to the point at which the pilot physically begins to apply power to initiate the takeoff from the runway or takeoff surface.

Visible Moisture

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

Visual Flight Rules (VFR)

Defined in CFR 14 Part 91. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.

Visual Meteorological Conditions (VMC)

Means the atmospheric environment is such that would allow a flight to proceed under the visual flight rules applicable to the flight. This does not preclude operating under Instrument Flight Rules.

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MEL	Recirculation Fans	Repair Category	Quantity Installed	Minimum Required
21-22-01-2		C	2	0

REMARKS AND EXCEPTIONS.

(M/FC) May be inoperative provided:

- a. Affected fan(s) is deactivated,
- b. Inlet Cargo Air SOV is operative or secured CLOSED,
- c. AIR CONDITIONING Cargo switch is selected to OFF, and
- d. Live animals are not carried in cargo compartment.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M/FC) MAINTENANCE.

For an inoperative recirculation fan, do as follows:

1. Open and collar the circuit breaker that follows:

For Recirculation Fan 1

CB PANEL: **CBP-1**
 CB NO: **A5**
 NAME: **RECIRC FAN 1**
 ZONE: **221**

For Recirculation Fan 2

CB PANEL: **CBP-2**
 CB NO: **A5**
 NAME: **RECIRC FAN 2**
 ZONE: **222**

Galley Heater

CB PANEL: **CBP-2**
 CB NO: **B11**
 NAME: **GALLEY HEATER**
 ZONE: **222**

• Note •

When the deactivation procedure is completed, the RECIRC FAN FAULT status message will show continuously on the EICAS status page if the RECIRC FAN switch is set to ON.

Continued

MEL	Recirculation Fans (Continued)	Repair Category	Quantity Installed	Minimum Required
21-22-01-2		C	2	0
• Note •				
Because of the decreased airflow and to prevent overheating, the Galley Heater must be deferred per MEL 21-40-01.				
(O) OPERATIONS.				
• Note •				
Flight attendants are to be advised that the Galley Heater is inoperative.				
(D) DISPATCH. Not required.				
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MEL	FWD Exhaust Fan - Galley/Lavatory	Repair Category	Quantity Installed	Minimum Required
21-23-01-2		C	1	0
REMARKS AND EXCEPTIONS.				
(M/FC) May be inoperative provided fan is deactivated.				
PLACARD.				
1. Place a placard/sticker on the Flight Attendant Control Panel, and				
2. Place a placard/sticker on the CBP-2 in the flight compartment.				
(M/FC) MAINTENANCE.				
For an inoperative forward exhaust fan, deactivate the fan as follows:				
1. Open and collar the circuit breaker that follows:				
CB PANEL: CBP-2				
CB NO: B8				
NAME: GALLEY EXHAUST FAN				
ZONE: 222				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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MEL	AFT Exhaust Fan (Lavatory)	Repair Category	Quantity Installed	Minimum Required
21-23-02-2		C	1	0

REMARKS AND EXCEPTIONS.

(M/FC) May be inoperative provided fan is deactivated.

PLACARD.

1. Place a placard/sticker on the Flight Attendant's control panel.
2. Place a placard/sticker on the CBP-1 in the flight compartment.

(M/FC) MAINTENANCE.

For an inoperative aft lavatory exhaust fan, deactivate it as follows:

1. Open and collar the circuit breaker that follows:

CB PANEL: **CBP-1**CB NO: **B8**NAME: **LAV EXHAUST FAN**ZONE: **221****(O) OPERATIONS.**

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Repair Category	Quantity Installed	Minimum Required
21-24-02-2	C	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (O) One may be inoperative provided display check valve is verified operative.

PLACARD.

Place a placard/sticker on the Avionics Cooling panel.

(M/FC) MAINTENANCE.

Do the deactivation of the inoperative display cooling fan as follows:

1. Open and collar the circuit breaker that follows:

- a. For Display Cooling Fan 1

CB PANEL: **CBP-1 LOWER**CB NO: **U2**NAME: **AVIONICS DISPLAY COOLING FAN 1**ZONE: **221**

- b. For Display Cooling Fan 2

CB PANEL: **CBP-1**CB NO: **B2**NAME: **AVIONICS DISPLAY COOLING FAN 2**ZONE: **221**

2. Start the Auxiliary Power Unit (APU) and/or the engine(s).
3. On the Bleed Air panel, set the BLEED VALVES switch, the BLEED SOURCE switch and the ISOL switch as required to provide bleed air to the Air-Conditioning System.
4. Set the L and/or R PACK switch to ON.
5. Set the DSPLY FAN switch to STDBY.
6. Make sure that the DISPLAY COOL caution message does not appear on the EICAS primary page.

• Note •

If the DISPLAY COOL caution message appears on the EICAS after step (6), dispatch is not permitted.

7. Set the DSPLY FAN switch to the operative Display Cooling Fan as follows:
 - a. For an inoperative FAN #1, set the switch to NORM (FAN #2).
 - b. For an inoperative FAN #2, set the switch to GND ALTN (FAN #1).
8. Make sure the DISPLAY COOL caution message does not come into view on the EICAS primary page.

• Note •

If the DISPLAY COOL caution message appears on the EICAS primary page, dispatch is not permitted.

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MEL	Repair Category	Quantity Installed	Minimum Required	
21-24-02-2	C	2	1	
<p>9. Configure the Air-Conditioning Pack(s) as required.</p> <p>10. If required, shut down the Auxiliary Power Unit (APU) and/or the engine(s).</p>				
(O) OPERATIONS. For an inoperative FAN #1 (in flight fan), do as follows: <u>On ground</u> Set the DSPLY FAN switch to NORM (FAN #2). <u>In Flight</u> Set the DSPLY FAN switch to FLT ALTN (FAN #2). For an inoperative FAN #2 (on ground fan), do as follows: <u>On ground</u> Set the DSPLY FAN switch to GND ALTN (FAN #1). <u>In Flight</u> Set the DSPLY FAN switch to NORM (FAN #1).				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Exhaust Fan (Avionics Cooling) (Dual Fan)	Repair Category	Quantity Installed	Minimum Required
21-24-03-2		C	2	1

REMARKS AND EXCEPTIONS.

(M/FC) One may be inoperative provided one Air-Conditioning Pack is operative.

PLACARD.

Place a placard/sticker on the Avionics Cooling panel.

(M/FC) MAINTENANCE.

Do the deactivation of the inoperative exhaust fan as follows:

1. Open and collar the circuit breaker that follows:

- a. For Avionic Fan 1 (flight)

CB PANEL: CBP-1 LOWER

CB NO: V2

NAME: AVIONICS FAN 1

ZONE: 221

- b. For Avionic Fan 2 (ground)

CB PANEL: CBP-1

CB NO: A2

NAME: AVIONICS FAN 2

ZONE: 221

2. Set the AVIONICS FAN switch to the operative avionic exhaust fan (GND ALTN or FLT ALTN).

• Note •

When the AVIONICS FAN switch is set to the operative avionic exhaust fan,
 it can be approximately 60 seconds before the amber AVIONICS FAN
 caution message goes off.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Ground Valve (Avionics Cooling)	Repair Category	Quantity Installed	Minimum Required
21-24-07		C	1	0
REMARKS AND EXCEPTIONS.				
(M) May be inoperative CLOSED.				
PLACARD. Place a placard/sticker on the Cabin Press control panel.				
(M) MAINTENANCE. For a ground valve inoperative CLOSED, do as follows:				
1. Do the deactivation of the Ground Valve (refer to AMM TASK 21-24-18-040-801).				
• Note • When the deactivation procedure is completed, the OVBD COOL FAIL status message will come into view continuously on the EICAS secondary page. When the passenger door is closed, the OVBD COOL caution message will then come into view continuously on the EICAS primary page.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Automatic Cabin Pressurization Controllers	Repair Category	Quantity Installed	Minimum Required
21-31-01-2		C	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative provided:

- a. Manual control system is verified operative, and
- b. Cabin Pressure Controller Panel (CPCP) Pressure Monitoring Function of Cabin Pressure Monitoring Sub-system is operative.

PLACARD.

Place a placard/sticker on the Cabin Press control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For one Automatic Cabin Pressure Controller inoperative, do as follows:

1. On the CABIN PRESS control panel (CPCP), select the PRESS CONT switch to MAN.
2. Make sure that the CABIN PRESS MAN status message shows on the EICAS secondary page.
3. On the CPCP, select the MAN RATE selector to the full INCR (+) position.
4. On the CPCP, select the MAN ALT switch to DN to close the outflow valve.
5. Make sure that the OUTFLOW VLV OPEN status message does not show on the EICAS secondary page.
6. On the CPCP, select the MAN ALT switch to UP to open the outflow valve.
7. Make sure that the status OUTFLOW VLV OPEN status message shows on the EICAS secondary page.
8. On the CPCP, select the MAN ALT switch to HOLD.
9. On the CPCP, select the PRESS CONT switch to deselect the MAN mode.
10. Make sure that the CABIN PRESS MAN status message does not show on the EICAS secondary page.
11. On the CPCP, select the MAN RATE selector to the position required for flight.

(D) DISPATCH.

Not required.

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MEL	Automatic Cabin Pressurization Controllers (Continued)	Repair Category	Quantity Installed	Minimum Required
21-31-01-2		C	2	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) (D) Both may be inoperative provided:

- a. Cabin Pressure Controller Panel (CPCP) Pressure Monitoring Function of Cabin Pressure Monitoring Sub-system is operative,
- b. Operations are conducted unpressurized at or below 10,000 feet MSL,
- c. Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable). Fly Away kits are not used, and
- d. Takeoffs and landings must not be conducted on runways that may lead to imminent ditching.
- e. Unpressurized flight is NOT authorized while transporting dry ice.

PLACARD.

Place a placard/sticker on the Cabin Press control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Operational procedures for both CPCs inoperative:

For unpressurized flight procedures with air conditioning packs available (operative), do as follows:**• Note •**

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 feet and 10,000 feet and when manual mode of pressurization control is selected.

Before Takeoff

1. L and/or R PACK switchlights Press in L/R PACK OFF light out, L/R PACK OFF Status message out.

• Note •

Selection of the right Air-Conditioning Pack to OFF renders the Galley Heater inoperative. Flight Attendants are to be advised.

2. EMERG DEPRESS switchlight..... Press in EMERG DEPR light on, EMER DEPRESS Caution message on.

Continued

MEL	Automatic Cabin Pressurization Controllers (Continued)	Repair Category	Quantity Installed	Minimum Required
21-31-01-2		C	2	0

After Takeoff

3. Airplane altitude 10,000 feet maximum
4. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

For unpressurized flight procedures with air conditioning packs unavailable (inoperative), do as follows:

Before Takeoff

1. L and R PACK switchlights Press out (L and R PACK OFF light on, L and R PACK OFF Status message on)
2. EMER DEPRESS switchlight Press in (EMER DEPR light on, EMER DEPRESS Caution message on)
3. RAM AIR switchlight Press in (RAM AIR OPEN light on, RAM AIR OPEN Status message on)
4. RECIRC FAN switch Select to OFF

After Takeoff

5. Airplane altitude 10,000 feet maximum
6. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

In case of unplanned ditching during unpressurized flight, do as follows:

With air conditioning packs **available (operative)**, do the following:

1. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

With air conditioning packs **unavailable (inoperative)**, do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

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MEL	Automatic Cabin Pressurization Controllers (Continued)	Repair Category	Quantity Installed	Minimum Required
21-31-01-2		C	2	0

In case of planned ditching during unpressurized flight, do as follows:

With air conditioning packs available (operative), do the following:

1. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
2. Perform Planned Ditching Procedure as per QRH.

With air conditioning packs unavailable (inoperative), do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
3. Perform Planned Ditching Procedure as per QRH.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

(D) DISPATCH.

1. Ensure flight is planned at 10,000 feet MSL or below.
2. Ensure take-offs and landings are not planned on runways that may lead to imminent ditching.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

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MEL	EMER DEPRESS Switch Guard	Repair Category	Quantity Installed	Minimum Required
21-31-02-2		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative or missing provided:

- a. Both Air Conditioning Packs are operative, and
- b. Operations are conducted at or below 15,000 feet MSL.

PLACARD.

Place a placard/sticker on the Cabin Pressure panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Operations are conducted at or below 15,000 feet MSL.

(D) DISPATCH.

Ensure flight is planned at FL150 or below.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) (D) May be inoperative or missing provided:

- a. Operations are conducted unpressurized at or below 10,000 feet MSL, and
- b. Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sands or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used).
- c. Unpressurized flight is NOT authorized while transporting dry ice.

PLACARD.

Place a placard/sticker on the Cabin Pressure panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

A. For an inoperative or missing EMER DEPRESS Switch Guard (Unpressurized Operations):

• Note •

NOTE: If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 ft and 10,000 ft and when manual mode of pressurization control is selected.

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MEL	EMER DEPRESS Switch Guard (Continued)	Repair Category	Quantity Installed	Minimum Required
21-31-02-2		C	1	0

For unpressurized flight procedures with air conditioning packs available (operative), do as follows:

• Note •

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 feet and 10,000 feet and when manual mode of pressurization control is selected.

Before Takeoff

1. L and/or R PACK switchlights Press in L/R PACK OFF light out, L/R PACK OFF Status message out.
2. EMERG DEPRESS switchlight..... Press in EMERG DEPR light on, EMER DEPRESS Caution message on.

After Takeoff

3. Airplane altitude..... 10,000 feet maximum
4. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

For unpressurized flight procedures with air conditioning packs unavailable (inoperative), do as follows:

• Note •

The Unpressurized Flight Procedure (PACKs off) will make the Galley Heater inoperative. Flight attendants are to be advised.

Before Takeoff

1. L and R PACK switchlights Press out (L and R PACK OFF light on, L and R PACK OFF Status message on)
2. EMER DEPRESS switchlight Press in (EMER DEPR light on, EMER DEPRESS Caution message on)
3. RAM AIR switchlight Press in (RAM AIR OPEN light on, RAM AIR OPEN Status message on)
4. RECIRC FAN switch..... Select to OFF
After Takeoff
5. Airplane altitude..... 10,000 feet maximum
6. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

Continued

MEL	EMER DEPRESS Switch Guard (Continued)	Repair Category	Quantity Installed	Minimum Required
21-31-02-2		C	1	0

In case of unplanned ditching during unpressurized flight, do as follows:

With air conditioning packs available (operative), do the following:

1. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

With air conditioning packs unavailable (inoperative), do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

In case of planned ditching during unpressurized flight, do as follows:

With air conditioning packs available (operative), do the following:

1. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
2. Perform Planned Ditching Procedure as per QRH.

With air conditioning packs unavailable (inoperative), do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
3. Perform Planned Ditching Procedure as per QRH.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

(D) DISPATCH.

Ensure flight is planned at 10,00 feet MSL or below.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

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MEL	Cabin Pressure Control Manual Mode	Repair Category	Quantity Installed	Minimum Required
21-31-03		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided Outflow Valve is considered inoperative.				
• Note • Outflow valve must be deferred under MEL 21-32-01-3.				
PLACARD. Place a placard/sticker on the Cabin Pressure Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Cabin Pressure Control Manual Mode - MAN ALT Switch	Repair Category	Quantity Installed	Minimum Required
21-31-03-1		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. Pressure control is not selected to MAN,
- b. EMER DEPRESS switch is selected ON,
- c. Operations are conducted unpressurized at or below 10,000 feet MSL,
- d. Extended overwater operations are prohibited, and
- e. Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, or sand ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used).
- f. Unpressurized flight is NOT authorized while transporting dry ice.

PLACARD.

Place a placard/sticker on the Cabin Press control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

A. For an inoperative MAN ALT Switch, do as follows:

• Note •

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 ft and 10,000 ft and when manual mode of pressurization control is selected.

For unpressurized flight procedures with air conditioning packs available (operative), do as follows:

• Note •

• Note •

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 feet and 10,000 feet and when manual mode of pressurization control is selected.

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MEL	Cabin Pressure Control Manual Mode - MAN ALT Switch (Continued)	Repair Category	Quantity Installed	Minimum Required
21-31-03-1		C	1	0

Before Takeoff

1. L and/or R PACK switchlights Press in L/R PACK OFF light out, L/R PACK OFF Status message out.
2. EMERG DEPRESS switchlight..... Press in EMERG DEPR light on, EMER DEPRESS Caution message on.

After Takeoff

3. Airplane altitude..... 10,000 feet maximum
4. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

For unpressurized flight procedures with air conditioning packs unavailable (inoperative), do as follows:**• Note •**

The Unpressurized Flight Procedure (PACKs off) will make the Galley Heater inoperative. Flight attendants are to be advised.

Before Takeoff

1. L and R PACK switchlightsPress out (L and R PACK OFF light on, L and R PACK OFF Status message on)
2. EMER DEPRESS switchlightPress in (EMER DEPR light on, EMER DEPRESS Caution message on)
3. RAM AIR switchlight Press in (RAM AIR OPEN light on, RAM AIR OPEN Status message on)
4. RECIRC FAN switch.....Select to OFF

After Takeoff

5. Airplane altitude..... 10,000 feet maximum
6. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

Continued

MEL	Cabin Pressure Control Manual Mode - MAN ALT Switch (Continued)	Repair Category	Quantity Installed	Minimum Required
21-31-03-1		C	1	0

In case of unplanned ditching during unpressurized flight, do as follows:

With air conditioning packs available (operative), do the following:

1. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

With air conditioning packs unavailable (inoperative), do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

In case of planned ditching during unpressurized flight, do as follows:

With air conditioning packs available (operative), do the following:

1. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
2. Perform Planned Ditching Procedure as per QRH.

With air conditioning packs unavailable (inoperative), do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
3. Perform Planned Ditching Procedure as per QRH.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

(D) DISPATCH.

Ensure flight is planned at 10,000 feet MSL or below.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

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MEL	Outflow Valves	Repair Category	Quantity Installed	Minimum Required
21-32-01-3		B	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative provided:

- a. Affected valve is secured OPEN,
- b. Floatation Valve is checked for integrity,
- c. Operations are conducted unpressurized at or below 10,000 feet MSL, and
- d. Cargo compartments are empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used.).
- e. Unpressurized flight is NOT authorized while transporting dry ice.

PLACARD.

Place a placard/sticker on the Cabin Press control panel.

(M) MAINTENANCE.

For an outflow valve inoperative OPEN, do as follows:

1. Do the procedure for deactivation of the outflow valve (refer to AMM TASK 21-32-01-040-801).

• Note •

When the deactivation procedure is completed, the AUTO PRESS caution message will come into view continuously on the EICAS primary page.

2. Do the detailed inspection of the Floatation Valve as follows:

- a. Examine the valve for cracks, deterioration, corrosion and damage.
- b. Examine the valve hinge pin for cracks, deterioration, corrosion, damage and lubrication.
- c. If necessary, lubricate the valve hinge pin.
- d. Move the valve to close the outflow valve orifice.
- e. Make sure that the valve closes the outflow valve orifice
- f. Release the valve.
- g. Make sure that the valve opens freely and fully.

(O) OPERATIONS.

For unpressurized flight procedures with air conditioning pack(s) available (operative), do as follows:

• Note •

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 feet and 10,000 feet and when manual mode of pressurization control is selected.

Continued

MEL	Outflow Valves (Continued)	Repair Category	Quantity Installed	Minimum Required
21-32-01-3		B	1	0

Before Takeoff

1. L and/or R PACK switchlights Press in (L(R) PACK OFF light off, and L(R) PACK OFF Status messages not shown)

• Note •

Selection of the right air conditioning pack to OFF renders the galley heater inoperative. Flight Attendants are to be advised.

2. EMER DEPRESS switchlight Press in (EMERG DEPR light on, and EMERG DEPR Caution message on)

After Takeoff

3. Airplane altitude 10,000 feet maximum

4. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

For unpressurized flight procedures with air conditioning pack(s) unavailable (inoperative), do as follows:

• Note •

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 feet and 10,000 feet and when manual mode of pressurization control is selected.

Before Takeoff

1. L and R PACK switchlights Press out (L and R PACK OFF light on, L and R PACK OFF Status message on)

• Note •

Selection of right air conditioning pack to OFF renders the galley heater inoperative. Flight Attendants are to be advised.

2. EMER DEPRESS switchlight Press in (EMER DEPR light on, EMER DEPRESS Caution message on)

3. RAM AIR switchlight Press in (RAM AIR OPEN light on, RAM AIR OPEN Status message on)

4. RECIRC FAN switch Select to OFF

After Takeoff

5. Airplane altitude 10,000 feet maximum

6. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

Continued

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MEL	Outflow Valves (Continued)	Repair Category	Quantity Installed	Minimum Required
21-32-01-3		B	1	0

In case of unplanned ditching during unpressurized flight, do as follows:**• Note •**

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8,500 feet and 10,000 feet and when manual mode of pressurization control is selected.

With air conditioning packs available (operative), do the following:

1. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

With air conditioning packs unavailable (inoperative), do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

In case of planned ditching during unpressurized flight, do as follows:

With air conditioning packs available (operative), do the following:

1. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
2. Perform Planned Ditching Procedure as per QRH.

With air conditioning packs unavailable (inoperative), do the following:

1. RAM AIR switchlight Press out (RAM AIR OPEN light off, RAM AIR OPEN Status message disappears)
2. EMER DEPRESS switchlight Press out (EMER DEPR light out, EMER DEPRESS Caution message not shown)
3. Perform Planned Ditching Procedure as per QRH.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

(D) DISPATCH.

Ensure flight is planned at 10,000 feet MSL or below.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

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MEL	CABIN PRESSURE Control Panel (CPCP) Pressure Monitoring Function	Repair Category	Quantity Installed	Minimum Required
21-33-01		A	1	0
REMARKS AND EXCEPTIONS.				
(O) (D) May be inoperative provided:				
<ul style="list-style-type: none"> a. Both automatic Cabin Pressure Controllers are operative, b. Emergency depress system is verified operative, c. Operations are conducted at or below FL300, and d. Repairs are made within one flight day. 				
PLACARD.				
Place a placard/sticker on the Cabin Press control panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
<u>Before take-off, do as follows:</u>				
<ol style="list-style-type: none"> 1. Push the PRESS CONT switch on the CABIN PRESS Control Panel to select MAN. 2. Make sure that the CABIN PRESS MAN Status message shows on the EICAS Secondary page. 3. Select the MAN ALT Switch to DN to close the outflow valve. 4. Make sure that the OUTFLOW VLV OPEN status message does not show on the EICAS Secondary page. 5. Push the EMER DEPRESS switch. 6. Make sure that the EMER DEPRESS caution message shows on the EICAS Primary page. 7. Make sure that the OUTFLOW VLV OPEN status message shows on the EICAS Secondary page. 8. Press the EMERG DEPRESS switch. 9. Make sure that the EMER DEPRESS caution message goes out of view from the EICAS Primary page. 10. Push the PRESS CONT switch on the CABIN PRESS Control Panel to deselect the MAN mode. 11. Make sure that the CABIN PRESS MAN Status message goes out of view from the EICAS Secondary page. 				
Procedure for subsequent failure of both CPCs:				
<ol style="list-style-type: none"> 1. Do the Unpressurized Flight Procedure as per QRH ABNORMAL PROCEDURES, Air-Conditioning, Bleed and Pressurization, Pressurization System, Unpressurized Flight Procedure 				
(D) DISPATCH.				
Ensure flight is planned at FL300 or below.				
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MEL	Repair Category	Quantity Installed	Minimum Required
21-40-01	C	1	0

REMARKS AND EXCEPTIONS.

(M/FC) May be inoperative provided system is deactivated.

PLACARD.

Place a placard/sticker on the Galley Services Panel.

(M/FC) MAINTENANCE.

For an inoperative galley heating system, deactivate it as follows:

1. Open and collar the circuit breaker that follows:

CB Panel: **CBP-2**CB No. **B11**Name: **GALLEY HEATER**Zone: **222****(O) OPERATIONS.****• Note •****Flight attendants are to be advised that the Galley Heater is inoperative.****(D) DISPATCH.**

Not required.

MMEL 20	END	25 OCT 19
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MEL	Ground Air Conditioning Connector Cover	Repair Category	Quantity Installed	Minimum Required
21-50-01		B	1	0
REMARKS AND EXCEPTIONS.				
(M) (O) (D) May be inoperative or missing provided:				
<ul style="list-style-type: none"> a. Connector check valve is verified CLOSED, b. Operations are conducted at or below FL250, and c. Extended overwater operations are prohibited. 				
PLACARD.				
Place a placard/sticker on the Air-Conditioning Control Panel and on the inside of the Ground Air-Conditioning Connector door.				
(M) MAINTENANCE.				
For an inoperative or missing ground air conditioning connector cover, do as follows:				
1. Open the access door that follows:				
Panel: 182BR Name: LP Ground Connection Access Door				
2. Make sure that the ground air conditioning check valve is CLOSED.				
3. Close the access door that follows:				
Panel: 182BR Name: LP Ground Connection Access Door				
(O) OPERATIONS.				
Operations are conducted at or below FL250.				
(D) DISPATCH.				
Ensure flight is planned at FL250 or below.				
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MEL	Air Conditioning Packs (RH Pack Inoperative)	Repair Category	Quantity Installed	Minimum Required
21-51-01-3		C	2	1

REMARKS AND EXCEPTIONS.

(O) (D) RH Pack may be inoperative provided:

- a. RH pack is selected OFF,
- b. Operations are conducted at or below FL310,
- c. Maximum number of cabin occupants (souls) (including flight attendants) is equal to or less than 82,
- d. RAM AIR SOV is either verified operative or deactivated OPEN,
- e. Ground operation for left air conditioning pack is conducted using engine bleed,
- f. Operations are limited to temperature below ISA+35, and
- g. Performance penalties are assessed in the Takeoff / Landing Report (TLR) and the inoperative system is noted on the Flight Release.
- h. If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**For operations with RH pack inoperative, do as follows:**

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

• Note •

If cowl anti-ice is required when operating the aircraft with the PACK selected OFF (inoperative), reduce or increase thrust on the affected engine as required, until the PRSOV opens (as verified from the ANTI-ICE synoptic page) before selecting cowl anti-ice to ON. Thereafter, set thrust as required.

• Note •

On ground, during hot weather operation and with the APU selected ON, high temperature in the R pack discharge duct may be reached while associated Flow Control Valve (FCV) is closed and same side pack is OFF with the other pack selected ON. When the FCV is closed there is a small normal and acceptable leakage of bleed air through the butterfly of the FCV. This leakage is sufficient to induce a flow of bleed air through the inoperative pack and increase the Supply Duct Temperature shown on the ECS synoptic page. This condition is normal and the aircraft can be dispatched.

Continued

MEL	Air Conditioning Packs (RH Pack Inoperative) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-01-3		C	2	1

1. On the AIR-CONDITIONING panel:
- a. L PACK switch..... On
 - 1. L PACK OFF light out.
 - 2. L PACK OFF status messages out.
 - b. R PACK switch OFF
 - 1. R PACK OFF light on.
 - 2. R PACK OFF status message on.
 - c. Airplane altitude not above
 - 1. 31000 ft (If total number of cabin occupants is 82 or less).
- Note •
- If the R PACK OFF status message does not show, refer to 21-51-02 "Flow Control Valve" for possible relief. The corresponding limitations must be observed and the corresponding (M) Maintenance Procedure (FCV secured closed) must be performed before dispatch.
2. Make sure that the Ram Air SOV is either verified operative or deactivated OPEN.
- a. To make sure that the Ram Air SOV is operative, do as follows:
 - 1. Push the RAM AIR switch to open the Ram Air SOV.
 - 2. Make sure that the Ram Air SOV legend is OPEN on the ECS page and that the RAM AIR OPEN status message shows on the EICAS secondary page.
 - 3. Push the RAM AIR switch to close the Ram Air SOV.
 - 4. Make sure that the Ram Air SOV legend is CLOSED on the ECS page and that the RAM AIR OPEN status message does not show on the EICAS secondary page.
 - b. To deactivate the Ram Air valve OPEN, do as follows:
 - 1. Make sure that the limitations 21-52-01 "Ram Air SOV" are observed and that the corresponding Maintenance (M) and Operations (O) procedures are performed.

IN FLIGHT

During single pack operation, if the left pack causes the presentation of a L PACK TEMP and/or L PACK caution message, do the related QRH abnormal procedure, then do as follows:

1. Do the Unpressurized Flight Procedure (PACKs off) procedure as per QRH ABNORMAL PROCEDURES Air-Conditioning System.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

Continued

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MEL	Air Conditioning Packs (RH Pack Inoperative) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-01-3		C	2	1

(D) DISPATCH.

1. Ensure flight is planned at FL310 or below.
2. Dispatcher will select "One pack inop blds open" for take-off and landing performance in Dispatch Monitor.
3. Maximum number of cabin occupants (souls)(including flight attendants) is equal to or less than 82.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

- OR OPTION 2 -

Air Conditioning Packs (LH Pack Inoperative)	Repair Category	Quantity Installed	Minimum Required
	C	2	1

REMARKS AND EXCEPTIONS.

(O) (D) LH pack may be inoperative provided:

- a. LH pack is selected OFF,
- b. Operations are conducted at or below FL310,
- c. Maximum number of cabin occupants (souls) (including flight attendants) is equal to or less than 82,
- d. RAM AIR SOV is either verified operative or deactivated OPEN,
- e. Ground operation for right air conditioning pack is conducted using engine bleed,
- f. Operations are limited to temperature below ISA+35, and
- g. Performance penalties are assessed in the Takeoff/Landing Report (TLR) and the inoperative system is noted on the Flight Release.
- h. If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**For operations with LH pack inoperative, do as follows:****• Note •**

Selection of the right PACK to OFF will make the Galley Heater inoperative.
Flight attendants are to be advised.

Continued

MEL	Air Conditioning Packs (LH Pack Inoperative) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-01-3		C	2	1

• Note •

If cowl anti-ice is required when operating the aircraft with the PACK selected OFF (inoperative), reduce or increase thrust on the affected engine as required, until the PRSOV opens (as verified from the ANTI-ICE synoptic page) before selecting cowl anti-ice to ON. Thereafter, set thrust as required.

• Note •

On ground, during hot weather operation and with the APU selected ON, high temperature in the R pack discharge duct may be reached while associated Flow Control Valve (FCV) is closed and same side pack is OFF with the other pack selected ON. When the FCV is closed there is a small normal and acceptable leakage of bleed air through the butterfly of the FCV. This leakage is sufficient to induce a flow of bleed air through the inoperative pack and increase the Supply Duct Temperature shown on the ECS synoptic page. This condition is normal and the aircraft can be dispatched.

1. On the AIR-CONDITIONING panel:
 - a. R PACK switch On
 1. R PACK OFF light out.
 2. R PACK OFF status messages out. - b. L PACK switch OFF
 1. L PACK OFF light on.
 2. L PACK OFF status message on. - c. Airplane altitude not above
 1. 31000 ft (If total number of cabin occupants is 82 or less).

• Note •

If the L PACK OFF status message does not show, refer to 21-51-02 "Flow Control Valve" for possible relief. The corresponding limitations must be observed and the corresponding (M) Maintenance Procedure (FCV secured closed) must be performed before dispatch.

2. Make sure that the Ram Air SOV is either verified operative or deactivated OPEN.
 - a. To make sure that the Ram Air SOV is operative, do as follows:
 1. Push the RAM AIR switch to open the Ram Air SOV.
 2. Make sure that the Ram Air SOV legend is OPEN on the ECS page and that the RAM AIR OPEN status message shows on the EICAS secondary page.
 3. Push the RAM AIR switch to close the Ram Air SOV.
 4. Make sure that the Ram Air SOV legend is CLOSED on the ECS page and that the RAM AIR OPEN status message does not show on the EICAS secondary page.

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MEL	Air Conditioning Packs (LH Pack Inoperative) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-01-3		C	2	1

- b. To deactivate the Ram Air valve OPEN, do as follows:

1. Make sure that the limitations 21-52-01 "Ram Air SOV" are observed and that the corresponding Maintenance (M) and Operations (O) procedures are performed.

IN FLIGHT

During single pack operation, if the left pack causes the presentation of a R PACK TEMP and/or R PACK caution message, do the related QRH abnormal procedure, then do as follows:

1. Do the Unpressurized Flight Procedure (PACKs off) procedure as per QRH ABNORMAL PROCEDURES Air-Conditioning System.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.

1. Ensure flight is planned at FL310 or below.
2. Dispatcher will select "One pack inop blds open" for take-off and landing performance in Dispatch Monitor.
3. Maximum number of cabin occupants (souls)(including flight attendants) is equal to or less than 82.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

- OR OPTION 3 -

Air Conditioning Packs (Both Pack Inoperative) - NON REVENUE OPERATIONS ONLY TO MAINTENANCE STATION	Repair Category	Quantity Installed	Minimum Required
	C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both may be inoperative provided:

- a. Both packs are selected OFF,
- b. RAM AIR SOV is either verified operative or deactivated OPEN,
- c. Inlet Cargo Air SOV is operative or secured CLOSED,
- d. AIR CONDITIONING Cargo switch is selected to OFF,
- e. Live animals are not carried in cargo compartment
- f. Operations are conducted unpressurized at or below 10,000 feet MSL,
- g. Unpressurized flight is NOT authorized while transporting dry ice.

Continued

MEL	Air Conditioning Packs (Both Pack Inoperative) - NON REVENUE OPERATIONS ONLY TO MAINTENANCE STATION (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-01-3		C	2	0

PLACARD.

Place two placards/stickers on the Air-Conditioning Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**For both packs inoperative (unpressurized operations), do as follows:****• Note •**

If cowl anti-ice is required when operating the aircraft with the PACK selected OFF (inoperative), reduce or increase thrust on the affected engine as required, until the PRSOV opens (as verified from the ANTI-ICE synoptic page) before selecting cowl anti-ice to ON. Thereafter, set thrust as required.

• Note •

If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8500 ft and 10000 ft and when manual mode of pressurization control is selected.

• Note •

The procedure will make the Galley Heater inoperative.
Flight attendants are to be advised.

1. Check that the Ram Air valve is operative or deactivated open.
 - a. To check the Ram Air valve operative, do as follows:
 1. Push the RAM AIR switch to open the Ram Air SOV.
 2. Verify that the Ram Air SOV legend is OPEN on the ECS page and that the RAM AIR OPEN status message shows on the EICAS secondary page.
 3. Push the RAM AIR switch to close the Ram Air SOV.
 4. Verify that the Ram Air SOV legend is CLOSED on the ECS page and that the RAM AIR OPEN status message does not show on the EICAS secondary page.

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MEL	Air Conditioning Packs (Both Pack Inoperative) - NON REVENUE OPERATIONS ONLY TO MAINTENANCE STATION (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-01-3		C	2	0
2. Do the Unpressurized Flight Procedure (PACKs off) procedure as per QRHABNORMAL PROCEDURES Air-Conditioning System.				
• Note • If the L and/or R PACK OFF status message does not show, refer to 21-51-02 “Flow Control Valve” for possible relief. The corresponding limitations must be observed and the corresponding (M) Maintenance Procedure (FCV secured closed) must be performed before dispatch.				
3. In case of ditching during unpressurized operations, do as follows:				
a. Set the EMER DEPRESS switch to off.				
b. Do the Ditching and Forced Landing procedure as per QRH EMERGENCY PROCEDURES.				
Caution				
Unpressurized flight is <u>NOT</u> authorized while transporting dry ice.				
(D) DISPATCH. Ensure flight is planned at 10,000 feet MSL or below.				
Caution				
Unpressurized flight is <u>NOT</u> authorized while transporting dry ice.				
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MEL	Flow Control Valve (RH FCV)	Repair Category	Quantity Installed	Minimum Required
21-51-02-2		B	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) RH FCV may be inoperative provided:

- a. Valve is secured CLOSED,
- b. RH Pack is selected OFF,
- c. Opposite Air-Conditioning Pack is operative,
- d. Operations are conducted at or below FL310,
- e. Maximum number of cabin occupants (including Flight Attendants) is equal to or less than 82,
- f. RAM AIR SOV is either verified operative or deactivated OPEN, and
- g. Performance penalties are assessed in the Takeoff / Landing Report (TLR) and the inoperative system is noted on the Flight Release.
- h. If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M) MAINTENANCE.**For an inoperative RH FCV, do as follows:**

1. Do the deactivation of the RH FCV in the CLOSED position (refer to TASK 21-53-14-040-801).

• Note •

For dispatch purpose if the Ram Air SOV is deactivated open,
refer to item 21-52-01 "Ram Air SOV" for related limitations
and maintenance procedure.

• Note •

When the deactivation procedure is completed, the R PACK caution message will
come into view continuously on the EICAS primary page and the pack symbol on
the EICAS ECS synoptic page will become amber.

(O) OPERATIONS.**For operations with RH FCV inoperative, do as follows:**

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative.
Flight attendants are to be advised.

Continued

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MEL	Flow Control Valve (RH FCV) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-02-2		B	2	1

• Note •

If cowl anti-ice is required when operating the aircraft with the PACK selected OFF (inoperative), reduce or increase thrust on the affected engine as required, until the PRSOV opens (as verified from the ANTI-ICE synoptic page) before selecting cowl anti-ice to ON. Thereafter, set thrust as required.

• Note •

On ground, during hot weather operation and with the APU selected ON, high temperature in the R pack discharge duct may be reached while associated Flow Control Valve (FCV) is closed and same side pack is OFF with the other pack selected ON. When the FCV is closed there is a small normal and acceptable leakage of bleed air through the butterfly of the FCV. This leakage is sufficient to induce a flow of bleed air through the inoperative pack and increase the Supply Duct Temperature shown on the ECS synoptic page. This condition is normal and the aircraft can be dispatched.

1. On the AIR-CONDITIONING panel:

- a. L PACK switch..... On
 - 1. L PACK OFF light out.
 - 2. L PACK OFF status messages out.
- b. R PACK switch..... OFF
 - 1. R PACK OFF light on.
 - 2. R PACK OFF status message on.
- c. Airplane altitude not above FL 310
(If total number of cabin occupants is 82 or less.)

• Note •

If the R PACK OFF status message does not show, refer to 21-51-02 "Flow Control Valve" for possible relief. The corresponding limitations must be observed and the corresponding (M) Maintenance Procedure (FCV secured closed) must be performed before dispatch.

2. Make sure that the Ram Air SOV is either verified operative or deactivated OPEN.

- a. To make sure that the Ram Air SOV is operative, do as follows:
 - 1. Push the RAM AIR switch to open the Ram Air SOV.
 - 2. Make sure that the Ram Air SOV legend is OPEN on the ECS page and that the RAM AIR OPEN status message shows on the EICAS secondary page.
 - 3. Push the RAM AIR switch to close the Ram Air SOV.
 - 4. Make sure that the Ram Air SOV legend is CLOSED on the ECS page and that the RAM AIR OPEN status message does not show on the EICAS secondary page.

Continued

MEL	Flow Control Valve (RH FCV) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-02-2		B	2	1
<p>b. To deactivate the Ram Air valve OPEN, do as follows:</p> <ol style="list-style-type: none"> 1. Make sure that the limitations 21-52-01 "Ram Air SOV" are observed and that the corresponding Maintenance (M) and Operations (O) procedures are performed. <p>3. During single pack operation, if the left pack causes the presentation of a L PACK TEMP and/or L PACK caution message, do the related AFM abnormal procedure, then do as follows:</p> <ol style="list-style-type: none"> a. Do the Unpressurized Flight Procedure (PACKs off) procedure as per QRH ABNORMAL PROCEDURES Air-Conditioning System. 				
Caution				
<p>If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.</p>				
<p>(D) DISPATCH.</p> <ol style="list-style-type: none"> 1. Ensure flight is planned at FL310 or below. 2. Dispatcher will select "One pack inop blds open" for take-off and landing performance in Dispatch Monitor. 				
Caution				
<p>If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.</p>				
- OR OPTION 2 -				
Flow Control Valve (LH FCV)		Repair Category	Quantity Installed	Minimum Required
		B	2	1
<p>REMARKS AND EXCEPTIONS.</p> <p>(M) (O) (D) LH FCV may be inoperative provided:</p> <ol style="list-style-type: none"> a. Valve is secured CLOSED, b. LH Pack is selected OFF, c. Opposite Air-Conditioning Pack is operative, d. Operations are conducted at or below FL310, e. Maximum number of cabin occupants (including Flight Attendants) is equal to or less than 82, f. RAM AIR SOV is verified operative, and g. Performance penalties are assessed in the Takeoff / Landing Report (TLR) and the inoperative system is noted on the Flight Release. h. If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs. 				
Continued				

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MEL	Flow Control Valve (LH FCV) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-02-2		B	2	1

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M) MAINTENANCE.**For an inoperative LH FCV do as follows:**

1. Do the deactivation of the LH FCV in the closed position (refer to AMM TASK 21-53-14-040-801).

• Note •

When the deactivation procedure is completed, the L PACK caution message will come into view continuously on the EICAS primary page and the pack symbol on the EICAS ECS synoptic page will become amber.

(O) OPERATIONS.**For operations with LH FCV inoperative, do as follows:****• Note •**

If cowl anti-ice is required when operating the aircraft with the PACK selected OFF (inoperative), reduce or increase thrust on the affected engine as required, until the PRSOV (Bleed Valve) opens (as verified from the ANTI-ICE synoptic page) before selecting cowl anti-ice to ON. Thereafter, set thrust as required.

• Note •

On ground, during hot weather operation and with the APU selected ON, high temperature in the L pack discharge duct may be reached while associated Flow Control Valve (FCV) is closed and same side pack is OFF with the other pack selected ON. When the FCV is closed there is a small normal and acceptable leakage of bleed air through the butterfly of the FCV. This leakage is sufficient to induce a flow of bleed air through the inoperative pack and increase the Supply Duct Temperature shown on the ECS synoptic page. This condition is normal and the aircraft can be dispatched.

1. On the AIR-CONDITIONING panel:
 - a. R PACK switch On
 1. R PACK OFF light out.
 2. R PACK OFF status messages out.
 - b. L PACK switch OFF
 1. L PACK OFF light on.
 2. L PACK OFF status message on.
 - c. Airplane altitude not above FL 310
(If total number of cabin occupants is 82 or less).

Continued

MEL	Flow Control Valve (LH FCV) (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-02-2		B	2	1

• Note •

If the L PACK OFF status message does not show, refer to 21-51-02 "Flow Control Valve" for possible relief. The corresponding limitations must be observed and the corresponding (M) Maintenance Procedure (FCV secured closed) must be performed before dispatch.

2. Push the RAM AIR switch to open the Ram Air SOV.
3. Make sure that the Ram Air SOV legend is OPEN on the ECS page and that the RAM AIR OPEN status message shows on the EICAS secondary page.
4. Push the RAM AIR switch to close the Ram Air SOV.
5. Make sure that the Ram Air SOV legend is CLOSED on the ECS page and that the RAM AIR OPEN status message does not show on the EICAS secondary page.
6. During single pack operation, if the right pack causes the presentation of a R PACK TEMP and/or R PACK caution message, do the related AFM abnormal procedure, then do as follows:
 - a. Do the Unpressurized Flight Procedure (PACKs off) procedure as per QRH ABNORMAL PROCEDURES Air-Conditioning System.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.

1. Ensure flight is planned at FL310 or below.
2. Dispatcher will select "One pack inop blds open" for take-off and landing performance in Dispatch Monitor.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

- OR OPTION 3 -

Flow Control Valve (Both FCV) NON REVENUE OPERATIONS ONLY TO MAINTENANCE STATION	Repair Category	Quantity Installed	Minimum Required
	C	2	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) Both FCVs may be inoperative provided:

- a. Both valves are secured CLOSED,
- b. Both Air-Conditioning Packs are selected OFF,
- c. RAM AIR SOV is either verified operative or deactivated OPEN,

Continued

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MEL	Flow Control Valve (Both FCV) NON REVENUE OPERATIONS ONLY TO MAINTENANCE STATION (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-02-2		C	2	0
<p>d. Inlet Cargo Air SOV is operative or secured CLOSED,</p> <p>e. AIR CONDITIONING Cargo switch is selected to OFF,</p> <p>f. Live animals are not carried in cargo compartment,</p> <p>g. Operations are conducted unpressurized at or below 10,000 feet MSL,</p> <p>h. Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used.).</p> <p>i. Unpressurized flight is NOT authorized while transporting dry ice.</p>				
PLACARD. Place a placard/sticker on the Air-Conditioning control panel.				
(M) MAINTENANCE.				
For two inoperative (LH and RH) FCVs, do as follows:				
1. Do the deactivation of the two FCVs in the closed position (refer to TASK 21-53-14-040-801).				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">For dispatch purpose if the Ram Air SOV is deactivated open, refer to item 21-52-01 “Ram Air SOV” for related limitations and maintenance procedure.</p>				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">When the deactivation procedure is completed, the L PACK and R PACK caution messages will come into the view continuously on the EICAS primary page and the pack symbol on the EICAS ECS synoptic page will become amber.</p>				
(O) OPERATIONS.				
For both FCVs inoperative (unpressurized operations), do as follows:				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">If cowl anti-ice is required when operating the aircraft with the PACK selected OFF (inoperative), reduce or increase thrust on the affected engine as required, until the PRSOV opens (as verified from the ANTI-ICE synoptic page) before selecting cowl anti-ice to ON. Thereafter, set thrust as required.</p>				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">If taking off and landing at higher altitudes, the CABIN ALT caution message will be posted when the cabin altitude is between 8500 ft and 10000 ft and when manual mode of pressurization control is selected.</p>				
Continued				

MEL	Flow Control Valve (Both FCV) NON REVENUE OPERATIONS ONLY TO MAINTENANCE STATION (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-02-2		C	2	0

• Note •

The procedure will make the Galley Heater inoperative.
Flight attendants are to be advised.

1. Check that the Ram Air valve is operative or deactivated open.
 - a. To check the Ram Air valve operative, do as follows:
 1. Push the RAM AIR switch to open the Ram Air SOV.
 2. Verify that the Ram Air SOV legend is OPEN on the ECS page and that the RAM AIR OPEN status message shows on the EICAS secondary page.
 3. Push the RAM AIR switch to close the Ram Air SOV.
 4. Verify that the Ram Air SOV legend is CLOSED on the ECS page and that the RAM AIR OPEN status message does not show on the EICAS secondary page.
 - b. To deactivate the Ram Air valve open, do as follows:
 1. Make sure that the limitations 21-52-01 "Ram Air SOV" are observed and that the corresponding Maintenance (M) and Operations (O) procedures are performed.
2. Do the Unpressurized Flight Procedure (PACKs off) procedure as per QRH ABNORMAL PROCEDURES Air-Conditioning System.

• Note •

If the L and/or R PACK OFF status message does not show,
refer to 21-51-02 "Flow Control Valve" for possible relief. The corresponding
limitations must be observed and the corresponding (M) Maintenance Procedure
(FCV secured closed) must be performed before dispatch.

3. In case of ditching during unpressurized operations, do as follows:
 - a. Set the EMER DEPRESS switch to off.
 - b. Do the Ditching and Forced Landing procedure as per QRH EMERGENCY PROCEDURES.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

(D) DISPATCH.

Ensure flight is planned at 10,000 feet or below.

Caution

Unpressurized flight is NOT authorized while transporting dry ice.

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MEL	AIR CONDITIONING PACK "FAULT/OFF" Switch Lights (Light Function Only)	Repair Category	Quantity Installed	Minimum Required
21-51-03		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD. Place a placard/sticker on the Air-Conditioning Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Air Conditioning System	Repair Category	Quantity Installed	Minimum Required
21-51-04-1		C	1	1
REMARKS AND EXCEPTIONS.				
(M/FC) System redundancy may be degraded as indicated by "L PACK FAULT" and/or "R PACK FAULT" status message(s) provided:				
<ul style="list-style-type: none"> a. Associated pack discharge pressure sensor(s) is verified operative once each flight day, and b. Automatic Mode of the associated Cockpit/Cabin Temperature Control System is operative and associated MAN mode is not selected. 				
• Note •				
Pack Discharge Temperature Readout(s) and/or Cockpit TEMP Readout(s) and/or Cabin TEMP Readout(s) and/or Cockpit SEL Readout(s) and/or Cabin SEL Readout(s) may be replaced by amber dashes on the EICAS ECS Synoptic Page.				
PLACARD. Place a placard/sticker on the Air-Conditioning Control Panel.				
(M/FC) MAINTENANCE.				
<ol style="list-style-type: none"> 1. On the bulkhead panel behind the pilot seat, set the MAINT switch to MFD 1 or MFD 2. 2. On the MFD 1 (MFD 2), make sure that the MAINTENANCE MAIN MENU page is shown. 3. On the EICAS control panel (ECP), push the UP and DN pushbuttons to move the cursor (>) to the CURRENT FAULTS line. 				
• Note •				
The function of the pushbuttons on the ECP is shown at the bottom of the MFD display.				
Continued				

MEL	Air Conditioning System (Continued)	Repair Category	Quantity Installed	Minimum Required
21-51-04-1		C	1	1
<p>4. On the ECP, push the SEL pushbutton to make a selection of the CURRENT FAULTS page.</p> <p>5. Wait for a minimum of one minute until all of the faults are shown.</p> <p>6. On the ECP, push the UP and DN pushbuttons to move the cursor (>) to the fault line related to the Air-Conditioning System.</p> <p>7. On the ECP, push the SEL pushbutton to get access to the ADVANCED DIAGNOSTICS page.</p> <p>8. On the ADVANCED DIAGNOSTICS page, do the following:</p> <ul style="list-style-type: none"> a. Select > to view Detailed Diagnostic Data and read label 351. b. Make sure that bit 28 is not set on label 351. <p>9. Exit from the MDC as follows:</p> <ul style="list-style-type: none"> a. On the ECP, push the MENU pushbutton to go back to the MAINTENANCE MAIN MENU page. b. On the bulkhead panel behind the pilot seat, set the MAINT switch to OFF. c. Make sure that the navigation data is shown on the MFD 1 (MFD 2). 				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
- OR OPTION 2 -				
REMARKS AND EXCEPTIONS.				
System redundancy may be degraded as indicated by "L PACK FAULT" and/or "R PACK FAULT" status messages provided the associated Air-Conditioning Pack(s) is considered inoperative.				
• Note •				
Associated Air-Conditioning Pack must be deferred under MEL 21-51-01-3.				
PLACARD.				
Place a placard/sticker on the Air-Conditioning Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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MEL	RAM AIR SOV	Repair Category	Quantity Installed	Minimum Required
21-52-01-3		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative OPEN provided:

- a. RAM AIR SOV is deactivated OPEN,
- b. LH Air-Conditioning Pack is operative,
- c. RH Air-Conditioning Pack is selected OFF,
- d. Operations are conducted at or below FL250, and
- e. Performance penalties are assessed in the Takeoff / Landing Report (TLR) and the inoperative system is noted on the Flight Release.
- f. If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M) MAINTENANCE.

For a RAM AIR SOV inoperative OPEN with the LH PACK operative, do as follows:

1. Do the deactivation of the RAM AIR SOV (refer to AMM TASK 21-52-00-040-802).

• Note •

When the deactivation procedure is completed, the RAM AIR SOV symbol will be shown in the closed position on the ECS synoptic page.

(O) OPERATIONS.

1. Operations are conducted at or below FL250, and
2. Performance penalties are assessed in the Takeoff / Landing Report (TLR) and the inoperative system is noted on the Flight Release.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.

1. Ensure flight is planned at FL250 or below.
2. Dispatcher will select “One pack inop blds open” for take-off and landing performance in Dispatch Monitor.

Caution

If either air conditioning pack is not operational, shipments containing dry ice are limited to 50 lbs.

Continued

MEL	RAM AIR SOV (Continued)	Repair Category	Quantity Installed	Minimum Required
21-52-01-3		C	1	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) (D) May be inoperative OPEN provided:

- a. RAM AIR SOV is deactivated OPEN,
- b. RH and LH Air-Conditioning Packs are selected OFF,
- c. Inlet Cargo Air SOV is operative or secured CLOSED,
- d. AIR CONDITIONING Cargo switch is selected to OFF,
- e. Live animals are not carried in cargo compartment.
- f. Operations are conducted unpressurized at or below 10,000 feet MSL,
- g. Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used.).
- h. EMER DEPRESS switch is selected ON.
- i. Unpressurized flight is NOT authorized while transporting dry ice.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M) MAINTENANCE.

For a RAM AIR SOV inoperative OPEN with both PACK's inoperative, do as follows:

1. Do the deactivation of the RAM AIR SOV (refer to AMM TASK 21-52-00-040-802).
2. Make sure the cargo compartment is empty.

• Note •

When the deactivation procedure is completed, the RAM AIR SOV symbol will be shown in the closed position on the ECS synoptic page.

(O) OPERATIONS.

For unpressurized flight procedures with air-conditioning packs unavailable (inoperative), do the following:

Before Takeoff

1. L and R PACK switchlights Press out (L and R PACK OFF lights on, L and R PACK OFF Status messages on)

• Note •

Selection of the right Air-Conditioning Pack to OFF renders the Galley Heater inoperative. Flight Attendants are to be advised.

2. EMER DEPRESS switchlight Press in (EMER DEPRESS light on, EMER DEPRESS Caution message on)

Continued

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MEL	RAM AIR SOV (Continued)	Repair Category	Quantity Installed	Minimum Required
21-52-01-3		C	1	0

3. RECIRC FAN switch.....Select to OFF

After Takeoff

4. Airplane altitude..... 10,000 feet maximum
 5. Airspeed Not less than 200 KIAS recommended during cruise to provide sufficient airflow to passengers within the cabin

In case of unplanned ditching during unpressurized flight, do the following:

1. Perform Ditching or Forced Landing Imminent Procedure as per QRH.

In case of planned ditching during unpressurized flight, do the following:

1. EMER DEPRESS switchlight Press out (EMER DEPRESS light out, EMER DEPRESS Caution message not shown)
 2. Perform Planned Ditching Procedure as per QRH.

Caution

| Unpressurized flight is NOT authorized while transporting dry ice.

(D) DISPATCH.

Ensure flight is planned at 10,000 feet MSL or below.

Caution

| Unpressurized flight is NOT authorized while transporting dry ice.

MMEL 20	END	25 OCT 19
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MEL	Air Conditioning Panel RAM AIR "OPEN" Switch Lights (Light Function Only)	Repair Category	Quantity Installed	Minimum Required
21-52-02		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Ram Air Regulating Valve (RARV)	Repair Category	Quantity Installed	Minimum Required
21-52-03		C	2	0

REMARKS AND EXCEPTIONS.

Both may be inoperative provided both Air Conditioning Packs are considered inoperative.

• Note •

Both Air Conditioning Packs must be deferred under MEL 21-51-01-3.

PLACARD.

Place a placard/sticker below the Electronic Standby Flight Instrument.

Place a RAM AIR REGULATING VALVE INOPERATIVE placard on the Ram Air Regulating Valve Lever.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -

Repair Category	Quantity Installed	Minimum Required
C	2	1

REMARKS AND EXCEPTIONS.

One may be inoperative provided associated Air Conditioning Pack is considered inoperative.

• Note •

Associated Air Conditioning Pack must be deferred under MEL 21-51-01-3.

PLACARD.

Place a placard/sticker below the Electronic Standby Flight Instrument.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Cargo Exhaust SOV	Repair Category	Quantity Installed	Minimum Required
21-55-03-2		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative CLOSED provided:

- a. SOV is secured CLOSED,
- b. Live animals are not carried in the aft cargo compartment, and
- c. Air-Conditioning Cargo switch is selected to OFF.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control panel.

(M) MAINTENANCE.

For a cargo exhaust SOV inoperative CLOSED, do as follows:

1. Do the deactivation of the cargo exhaust SOV (refer to AMM TASK 21-55-00-040-802).

• Note •

When the deactivation procedure is completed, the AFT CARGO SOV status message will come into view continuously on the EICAS secondary page.

(O) OPERATIONS.

1. On the Air-Conditioning Control panel, set the cargo air conditioning switch to OFF.

Caution

Ensure live animals are not placed in the cargo compartment.

(D) DISPATCH.

Not required.

- OR OPTION 2 -

(O) May be inoperative OPEN provided:

- a. Air-Conditioning Cargo switch is selected to OFF, and
- b. Aft cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used.).

PLACARD.

Place a placard/sticker on the Air-Conditioning Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

1. On the Air-Conditioning Control panel, set the cargo air conditioning switch to OFF.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Cargo Air SOV - Inlet	Repair Category	Quantity Installed	Minimum Required
21-55-04-3		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative CLOSED provided:

- a. SOV is secured CLOSED,
- b. Live animals are not carried in the aft cargo compartment, and
- c. Air-Conditioning Cargo switch is selected to OFF.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control panel.

(M) MAINTENANCE.

For a cargo air inlet SOV inoperative CLOSED, do as follows:

1. Do the deactivation of the conditioned-air SOV (refer to AMM TASK 21-55-00-040-801).

• Note •

When the deactivation procedure is completed, the AFT CARGO SOV status message will come into view continuously on the EICAS secondary page.

(O) OPERATIONS.

1. On the Air-Conditioning Control panel, set the cargo air conditioning switch to OFF.

• Note •

Ensure live animals are not placed in the aft cargo compartment.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) May be inoperative OPEN provided:

- a. Air-Conditioning Cargo switch is selected to OFF,
- b. Both Recirculation Fans are operative,
- c. Both Air Conditioning Packs are operative,
- d. Both Flow Control Valves are operative,
- e. Both Pressure Regulating SOV's are operative,
- f. Both High Pressure Valves are operative, and
- g. Aft cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used.).

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MEL	Cargo Air SOV - Inlet (Continued)	Repair Category	Quantity Installed	Minimum Required
21-55-04-3		C	1	0
PLACARD. Place a placard/sticker on the Air-Conditioning Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. For a cargo air inlet SOV inoperative OPEN, do as follows: 1. On the Air-Conditioning Control panel, set the CARGO air-conditioning switch to OFF.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	AFT Cargo Compartment Temperature Control System	Repair Category	Quantity Installed	Minimum Required
21-55-05-2		C	1	0
REMARKS AND EXCEPTIONS. (M/FC) (O) May be inoperative provided: a. Live animals are not carried in cargo compartment, and b. Air-Conditioning Cargo switch is selected to AIR or OFF.				
PLACARD. Place a placard/sticker on the Air-Conditioning Control Panel.				
(M/FC) MAINTENANCE. For an inoperative aft cargo compartment temperature control system, do as follows: 1. On the Air-Conditioning control panel, put the CARGO switch to AIR or OFF.				
(O) OPERATIONS.				
Caution Ensure live animals are not placed in the cargo compartment.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Cabin/Cockpit Temperature Control Systems	Repair Category	Quantity Installed	Minimum Required
21-61-01		C	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative provided associated Air-Conditioning Pack is considered inoperative.

• Note •

Associated Air-Conditioning Pack must be deferred under MEL 21-51-01-3.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**For the LH Pack inoperative, do as follows:**

1. Select the left PACK to OFF.
2. Make sure that the L PACK OFF status message shows on the EICAS secondary page.
3. If the L PACK OFF status message does not show, deactivate the left Flow Control Valve (FCV) (refer to item 21-51-02).
4. On the co-pilot's Display reversionary control panel, set the selector switch to PFD 2.
5. On the EICAS control panel (ECP), push the ECS pushbutton to get access to the ECS synoptic page.
6. On the AIR-CONDITIONING control panel, lift the guard and push the RAM AIR switch to OPEN.
7. Make sure that the Ram air legend shows open on the ECS synoptic page.
8. Make sure that the RAM AIR OPEN message shows on the EICAS secondary page.
9. On the AIR-CONDITIONING control panel, lift the guard and push the RAM AIR switch to CLOSE.
10. Make sure that the Ram air legend shows closed on the ECS synoptic page.
11. Make sure that the RAM AIR OPEN message does not show on the EICAS secondary page.
12. On the co-pilot's Display reversionary control panel, set the selector switch to NORM.

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MEL	Cabin/Cockpit Temperature Control Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
21-61-01		C	2	1

For the RH Pack inoperative and RAM AIR SOV operative, do as follows:

1. Select the right PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 thru 15356:

• Note •

NOTE: Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised. Galley Heater is to be deferred per MEL 21-40-01.

FOR ALL AIRCRAFT:

2. Make sure that the R PACK OFF status message shows on the EICAS secondary page.
3. If the R PACK OFF status message does not show, deactivate the right Flow Control Valve (FCV) (refer to item 21-51-02).
4. On the co-pilot's Display reversionary control panel, set the selector switch to PFD 2.
5. On the EICAS control panel (ECP), push the ECS pushbutton to get access to the ECS synoptic page.
6. On the AIR-CONDITIONING control panel, lift the guard and push the RAM AIR switch to OPEN.
7. Make sure that the Ram air legend shows open on the ECS synoptic page.
8. Make sure that the RAM AIR OPEN message shows on the EICAS secondary page.
9. On the AIR-CONDITIONING control panel, lift the guard and push the RAM AIR switch to CLOSE.
10. Make sure that the Ram air legend shows closed on the ECS synoptic page.
11. Make sure that the RAM AIR OPEN message does not show on the EICAS secondary page.
12. On the co-pilot's Display reversionary control panel, set the selector switch to NORM.

Continued

MEL	Cabin/Cockpit Temperature Control Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
21-61-01		C	2	1

For the RH PACK inoperative and Ram Air SOV inoperative, do as follows:

1. Select the right PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 thru 15356:

• Note •

NOTE: Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised. Galley Heater is to be deferred per MEL 21-40-01.

FOR ALL AIRCRAFT:

2. Make sure that the R PACK OFF status message shows on the EICAS secondary page.
3. If the R PACK OFF status message does not show, deactivate the right Flow Control Valve (FCV) (refer to item 21-51-02).
4. Make sure that limitations are observed and that the Maintenance procedure is performed as per Item Ram Air SOV, 21-52-01.

For a one PACK operation, if the remaining PACK causes the presentation of the L(R) PACK TEMP and/or L(R) PACK caution message on EICAS primary page, do as follows:

1. Do the QRH, Air-Conditioning, Bleed and Pressurization, Air-Conditioning System, Pressurization - Unpressurized Flight QRH Procedure.

• Note •

Performance penalties are assessed in the Takeoff/Landing Report (TLR) and the inoperative system is noted on the Flight Release.

(D) DISPATCH.

Ensure the TLR reflects data for "one pack inop bleeds open" in dispatch monitor.

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MEL	Cabin/Cockpit Temperature Control Systems - Automatic Mode (One Auto Control Inop)	Repair Category	Quantity Installed	Minimum Required
21-61-01-1		C	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (O) One automatic control may be inoperative provided:

- a. Associated manual control is operative, and
- b. Associated Duct Temperature Indication is operative.

PLACARD.

Place a placard/sticker on the Air-Conditioning panel.

(M/FC) MAINTENANCE.**For an inoperative cockpit temperature control system (automatic mode), deactivate it as follows:**

1. Open and collar the circuit breaker that follows:

CB Panel: **CBP-1**CB No: **K7**Name: **CKPT TEMP SENS**Zone: **221**

2. On the Air-Conditioning Control panel, push the related CKPT MAN switchlight to the ON position and make sure the MAN part of the switchlight comes on.
3. On the secondary EICAS display, make sure the CKPT TEMP MAN status message is displayed.

For an inoperative cabin temperature control system (automatic mode), deactivate it as follows:

1. Open and collar the circuit breaker that follows:

For the Forward Cabin Temperature SensorCB Panel: **CBP-2**CB No: **J1**Name: **FWD CABIN TEMP SENS**Zone: **222****For the Aft Cabin Temperature Sensor**CB Panel: **CBP-1**CB No: **J1**Name: **AFT CABIN TEMP SENS**Zone: **221****Continued**

MEL	Cabin/Cockpit Temperature Control Systems - Automatic Mode (Continued)	Repair Category	Quantity Installed	Minimum Required
		C	2	1
21-61-01-1				
	2. On the Air-Conditioning Control panel, push the CABIN MAN switchlight to the ON position and make sure the MAN part of the switchlight comes on.			
	3. On the secondary EICAS display, make sure the CABIN TEMP MAN status message is displayed.			
(O) OPERATIONS.				
Operate affected temperature control system in manual mode.				
(D) DISPATCH.				
Not required.				
- OR OPTION 2 -		Repair Category	Quantity Installed	Minimum Required
		C	2	0
REMARKS AND EXCEPTIONS.				
(M/FC) (O) Both automatic controls may be inoperative provided:				
a. Both manual controls are operative, and				
b. Both Duct Temperature Indications are operative.				
PLACARD.				
Place a placard/sticker on the Air-Conditioning Control panel.				
(M/FC) MAINTENANCE.				
For an inoperative <u>cockpit and cabin temperature control system (automatic mode)</u>, deactivate it as follows:				
1. Open and collar the circuit breaker that follows:				
For the Cockpit Temperature Sensor				
CB Panel: CBP-1				
CB No: K7				
Name: CKPT TEMP SENS				
Zone: 221				
For the Forward Cabin Temperature Sensor				
CB Panel: CBP-2				
CB No: J1				
Name: FWD CABIN TEMP SENS				
Zone: 222				
Continued				

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MEL	Cabin/Cockpit Temperature Control Systems - Automatic Mode (Continued)	Repair Category	Quantity Installed	Minimum Required
21-61-01-1		C	2	0

For the Aft Cabin Temperature SensorCB Panel: **CBP-1**CB No: **J1**Name: **AFT CABIN TEMP SENS**Zone: **221**

2. On the Air-Conditioning Control panel, push the CKPT MAN switchlight to the ON position and make sure the MAN part of the switchlight comes on.
3. On the secondary EICAS display, make sure the CKPT TEMP MAN Status message is displayed.
4. On the Air-Conditioning Control panel, push the CABIN MAN switchlight to the ON position and make sure the MAN part of the switchlight comes on.
5. On the secondary EICAS display, make sure the CABIN TEMP MAN Status message is displayed.

(O) OPERATIONS.

Operate affected temperature control system in manual mode.

(D) DISPATCH.

Not required.

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MEL	Cabin / Cockpit Temperature Control Systems - Manual Mode (One Manual Control Inop)	Repair Category	Quantity Installed	Minimum Required
21-61-01-2		C	2	1

REMARKS AND EXCEPTIONS.

(M/FC) One manual control may be inoperative provided:

- a. Associated automatic control is operative, and
- b. Associated Duct Temperature Indication is operative.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control panel.

(M/FC) MAINTENANCE.

For an inoperative cockpit or cabin temperature control system with manual control inoperative, do as follows:

1. Open and collar the circuit breaker that follows:

For the Cockpit Temperature Control System

CB Panel: **CBP-2 LOWER**

CB No: **T8**

Name: **ACS L MAN**

Zone: **222**

For the Cabin Temperature Control System

CB Panel: **CBP-2**

CB No: **K6**

Name: **ACS R MAN**

Zone: **222**

2. Make sure that the related automatic control is operative.

3. Make sure that the related duct temperature indication is operative.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

Continued

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MEL	Cabin / Cockpit Temperature Control Systems - Manual Mode (Continued)	Repair Category	Quantity Installed	Minimum Required
21-61-01-2		C	2	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M/FC) Both manual controls may be inoperative provided:

- a. Both automatic controls are operative, and
- b. Both Duct Temperature Indications are operative.

PLACARD.

Place a placard/sticker on the Air-Conditioning Control panel.

(M/FC) MAINTENANCE.

For inoperative cockpit and cabin temperature control systems (manual mode), deactivate as follows:

1. Open and collar the circuit breakers that follows:

Cockpit and Cabin Temperature Control SystemsCB Panel: **CBP-2 LOWER**CB No: **T8**Name: **ACS L MAN**Zone: **222**CB Panel: **CBP-2**CB No: **K6**Name: **ACS R MAN**Zone: **222**

2. Make sure that the automatic controls are operative.

3. Make sure that the duct temperature indications are operative.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Air Conditioning Panel CKPT/CABIN Temperature Control MAN Switchlights (light function only)	Repair Category	Quantity Installed	Minimum Required
21-61-04		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the Air-Conditioning Control panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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MEL	Autopilot System	Repair Category	Quantity Installed	Minimum Required
22-10-01		B	1	0
REMARKS AND EXCEPTIONS.				
Except where enroute operations or approach procedures require its use, may be inoperative provided Altitude Alerting System is operative.				
<p>a. Operation in RVSM airspace prohibited.</p> <p style="text-align: center;">• Note •</p> <p style="text-align: center;">In addition to the MEL, apply ACI 90-10-01 RVSM Status.</p> <p style="text-align: center;">• Note •</p> <p style="text-align: center;">Relief for inoperative individual flight guidance operational modes is provided by MEL item 22-10-02 Flight Directors.</p> <p style="text-align: center;">• Note •</p> <p style="text-align: center;">In addition to the MEL, apply ACI 90-10-04 CAT II Status.</p>				
<p>PLACARD. Place a placard/sticker on the Flight Control Panel.</p> <p>(M) MAINTENANCE. Not required.</p> <p>(O) OPERATIONS. Not required.</p> <p>(D) DISPATCH. Not required.</p>				
MMEL 20	END	25 OCT 19		

MEL	Flight Directors	Repair Category	Quantity Installed	Minimum Required
22-10-02		B	2	1

REMARKS AND EXCEPTIONS.

(O) Except where enroute operations or approach procedures require its use, one may be inoperative provided Autopilot is considered inoperative.

• Note •

Windshear escape guidance function will be available from the remaining Flight Director.

• Note •

The TOGA switches will not be affected by the inoperative Flight Director.

• Note •

In addition to the MEL, apply ACI 90-10-01 RVSM Status.

• Note •

Autopilot must be deferred under MEL 22-10-01.

• Note •

In addition to the MEL, apply ACI 90-10-04 CAT II Status.

PLACARD.

Place a placard/sticker on the Flight Control Panel (FCP).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For one Flight Director inoperative, do as follows:

- Pilot controlling the aircraft has an operative Flight Director.

• Note •

The windshear “eyebrows” (pitch limited indication from the GPWS) will appear on both PFDs to indicate the amount of pitch attitude change that can be made before the airplane reaches stall angle of attack (AOA). Excessive pitch rates may activate the stall protection system.

(D) DISPATCH.

Not required.

Continued

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MEL	Flight Directors (Both Inoperative)	Repair Category	Quantity Installed	Minimum Required
22-10-02		B	2	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) Except where enroute operations or approach procedures require its use, both may be inoperative provided:

- a. Autopilot is considered inoperative, and
- b. TOGA switches are considered inoperative

• Note •

Windshear escape guidance will be inoperative.
However, all remaining windshear functions will be available.

• Note •

In addition to the MEL, apply ACI 90-10-01 RVSM Status.

• Note •

Autopilot must be deferred under MEL 22-10-01.

• Note •

TOGA Switches must deferred under MEL 22-11-03.

• Note •

In addition to the MEL, apply ACI 90-10-04 CAT II Status.

PLACARD.

Place a placard/sticker on the Flight Control Panel (FPC).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

The windshear “eyebrows” (pitch limited indication from the GPWS) will appear on both PFDs to indicate the amount of pitch attitude change that can be made before the airplane reaches stall angle of attack (AOA). Excessive pitch rates may activate the stall protection system.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Flight Director Modes: Take Off (TO) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3		C	1	0

REMARKS AND EXCEPTIONS.

(O) Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative:

• Note •

Flight Director Altitude Hold mode is required for RVSM Operations.

• Note •

Any Flight Director mode which operates normally may be used.

PLACARD.

Place a placard/sticker on the Flight Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

With Flight Director TakeOff mode inoperative, takeoff will be performed in raw data (approximately 15 degrees pitch up for 2 engines; in the event of engine failure approximately 10 degrees pitch up) until the "Speed Mode" callout.

(D) DISPATCH.

Not required.

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MEL	Flight Director Modes: Go - Around (GA) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3a		C	1	0

REMARKS AND EXCEPTIONS.

(O) Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative.

• Note •

Flight Director Altitude Hold mode is required for RVSM Operations.

• Note •

Any Flight Director mode which operates normally may be used.

• Note •

In addition to the MEL, apply ACI 90-10-04 CAT II Status.

PLACARD.

Place a placard/sticker on the Flight Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

With Flight Director Go-Around mode inoperative, pilot monitoring should select both Flight Directors OFF while the Pilot flying advances the Thrust Levers toward Go-Around Thrust. Rotate to approximately 10 degrees pitch up until the "Speed Mode" callout.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Flight Director Modes: Heading (HDG) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3b		C	1	0
REMARKS AND EXCEPTIONS.				
Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative.				
<p style="text-align: center;">• Note •</p> <p>Flight Director Altitude Hold mode is required for RVSM Operations.</p> <p style="text-align: center;">• Note •</p> <p>Any Flight Director mode which operates normally may be used.</p> <p style="text-align: center;">• Note •</p> <p>Inoperative Heading Bug is considered part of the Flight Director Heading mode and therefore may be deferred per this item.</p> <p style="text-align: center;">• Note •</p> <p>In addition to the MEL, apply ACI 90-10-04 CAT II Status.</p>				
PLACARD. Place a placard/sticker on the Flight Control Panel. (M) MAINTENANCE. Not required. (O) OPERATIONS. Not required. (D) DISPATCH. Not required.				
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MEL	Flight Director Modes: Navigation (NAV) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3c		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative.

• Note •

Flight Director Altitude Hold mode is required for RVSM Operations.

• Note •

Any Flight Director mode which operates normally may be used.

• Note •

In addition to the MEL, apply ACI 90-10-04 CAT II Status.

PLACARD.

Place a placard/sticker on the Flight Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

RNAV 1 SIDS and STARS are NOT authorized.

(D) DISPATCH.

1. Ensure the routing does not utilize RNAV 1 SIDs or STARS.
2. Edit the ATS strip to reflect "PBN/B4 NAV/RNVD0E0A0" remembering to leave the parenthesis which becomes a period on the Release Flight Plan.

MMEL 20	END	25 OCT 19
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MEL	Flight Director Modes: Approach (APPR) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3d		C	1	0

REMARKS AND EXCEPTIONS.

Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative.

• Note •

Flight Director Altitude Hold mode is required for RVSM Operations.

• Note •

Any Flight Director mode which operates normally may be used.

• Note •

In addition to the MEL, apply ACI 90-10-04 CAT II Status.

PLACARD.

Place a placard/sticker on the Flight Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Flight Director Modes: Back Course (B/C) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3e		C	1	0

REMARKS AND EXCEPTIONS.

Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative:

• Note •

Flight Director Altitude Hold mode is required for RVSM Operations.

• Note •

Any Flight Director mode which operates normally may be used.

PLACARD.

Place a placard/sticker on the Flight Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Flight Director Modes: Half Bank (1/2 BNK) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3f		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) Except where enroute operations, approach or departure procedures require its use, may be inoperative provided:

- a. Altitude Alerting System is operative, and
- b. Operations are conducted at/or below FL 310.

• Note •

Flight Director Altitude hold mode is required for RVSM Operations.

• Note •

Any Flight Director mode which operates normally may be used.

PLACARD.

Place a placard/sticker on the Flight Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

Maximum altitude is FL 310.

(D) DISPATCH.

Ensure flight is planned at FL310 or below.

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MEL	Flight Director Modes: Speed (Speed) Mode	Repair Category	Quantity Installed	Minimum Required
22-10-02-3g		C	1	0

REMARKS AND EXCEPTIONS.

Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative.

• Note •

Flight Director Altitude Hold mode is required for RVSM Operations.

• Note •

Any Flight Director mode which operates normally may be used.

• Note •

Inoperative Speed Bug is considered part of the Flight Director Speed mode and therefore may be deferred per this item.

• Note •

In addition to the MEL, apply ACI 90-10-04 CAT II Status.

PLACARD.

Place a placard/sticker on the Flight Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Flight Director Modes: Vertical Speed (VS) Mode	Repair Category	Quantity Installed	Minimum Required	
		C	1	0	
REMARKS AND EXCEPTIONS.					
Except where enroute operations, approach or departure procedures require its use, may be inoperative provided Altitude Alerting System is operative.					
<ul style="list-style-type: none"> • Note • <p>Flight Director Altitude Hold mode is required for RVSM Operations.</p> <ul style="list-style-type: none"> • Note • <p>Any Flight Director mode which operates normally may be used.</p>					
PLACARD. Place a placard/sticker on the Flight Control Panel.					
(M) MAINTENANCE. Not required.					
(O) OPERATIONS. Not required.					
(D) DISPATCH. Not required.					
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MEL	Autopilot Disconnect Switches (Control Wheel) - One Inoperative	Repair Category	Quantity Installed	Minimum Required
22-11-01		C	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative provided the autopilot is not utilized at less than initial approach altitude.

PLACARD.

Place a placard/sticker on the Flight Control Panel (FCP).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For operations with one control wheel AP/SP DISC switch that has the autopilot disconnect function only inoperative, do as follow:

Before first flight after failure occurrence and on every ORIGINATING checklist:

1. Initiate the STALL test per the POH, originating check, Stall Protection System test.
2. Make sure that the stick pusher can be disconnected from the associated control wheel AP/SP DISC switch.

During Flight:

1. With the autopilot engaged, pilot controlling the aircraft has an operative AP/SP DISC switch.

(D) DISPATCH.

Not required.

Autopilot Disconnect Switches (Control Wheel) - Both Inoperative

Repair Category	Quantity Installed	Minimum Required
C	2	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) (D) May be inoperative provided the Autopilot System is considered inoperative.

- a. Operation in RVSM airspace prohibited.

• Note •**In addition to the MEL, apply ACI 90-10-01 RVSM Status.****• Note •****Autopilot must be deferred under MEL 22-10-01.****Continued**

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MEL	Autopilot Disconnect Switches (Control Wheel) - Both Inoperative (Continued)	Repair Category	Quantity Installed	Minimum Required
22-11-01		C	2	0

PLACARD.

Place a placard/sticker on the Flight Control Panel (FCP).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For operations with both control wheel AP/SP DISC switches that have the autopilot disconnect function only inoperative, do as follows:

Before first flight after failure occurrence and on every ORIGINATING checklist:

1. Initiate the STALL test per the POH, originating check, Stall Protection System test.
2. Make sure that the stick pusher can be disconnected from both control wheel AP/SP DISC switches.
3. Perform the same procedure for the second Autopilot / Stall Pusher Disconnect Switch.

(D) DISPATCH.

Operations are not permitted in RVSM airspace; ensure the flight is filed at FL280 or below and the ATC flight strip reflects the lack of RVSM capability.

- a. In the ICAO format, remove W from the ATC flight strip.

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MEL	Flight Director Sync Switches	Repair Category	Quantity Installed	Minimum Required
22-11-02		C	2	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the Flight Control Panel (FCP).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Takeoff/Go-Around (TOGA) Switches (On Thrust Levers)	Repair Category	Quantity Installed	Minimum Required
22-11-03-1		C	2	0

REMARKS AND EXCEPTIONS.

(O) Both may be inoperative provided Operations procedures listed below are used.

• Note •

All normal flight director modes are available.

• Note •

Windshear escape guidance is not affected by the loss of the TOGA function and remains operative during the approach and takeoff phases of flight.**PLACARD.**

Place a placard/sticker forward of the THROTTLE QUADRANT.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For both TOGA switches inoperative:

Takeoff

Takeoff will be performed in raw data (approximately 15 degree pitch up for 2 engines; in the event of engine failure approximately 10 degrees pitch up) until the "speed mode" callout.

Go Around

Pilot monitoring should select both flight directors off while the pilot flying advances the thrust levers towards go around thrust. Rotate to approximately 10 degrees pitch up until the "speed mode" callout.

• Note •

TO/TO and GA/GA mode on the flight mode annunciator are unavailable.

• Note •

In the event of a go around, the AP/SP switch must be used to disconnect the autopilot and the FMS must be manually sequenced to the missed approach.**(D) DISPATCH.**

Not required.

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MEL	V-Speed Auto Synchronization System	Repair Category	Quantity Installed	Minimum Required
22-12-01		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided V-Speed settings are made manually by each pilot.				
PLACARD. Place a placard/sticker on the Flight Control Panel (FCP).				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Manually set V-speed settings.				
(D) DISPATCH. Not required.				
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MEL	Repair Category	Quantity Installed	Minimum Required
22-12-02-2	C	4	3

REMARKS AND EXCEPTIONS.

(M) (O) One IAPS IOC may be inoperative provided:

- a. Remaining IOCs are verified operative before first flight of the day.

• Note •**"IAPS DEGRADED" Status message will be displayed on EICAS.****PLACARD.**

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.

For an inoperative IAPS IOC, do as follows:

1. On the pilot's and copilot's display reversionary panels, make sure that the rotary selectors are set to the NORM position.
2. On the bulkhead panel behind the pilot seat, set the MAINT switch to the MFD 1(MFD 2).
3. On the MFD 1 (MFD 2), make sure that the MAINTENANCE MAIN MENU is shown.

• Note •**The BRG pointer 1 (single line arrow) moves the cursor up. The BRG pointer 2 (double line arrow) moves the cursor down.**

4. On the EICAS control panel, push the UP and DN pushbuttons to move the cursor (>) to the CURRENT FAULTS line.
5. Push the SEL pushbutton to get access to the CURRENT FAULTS page.

• Note •**The function of the pushbuttons on the EICAS control panel is shown at the bottom of the MFD display.**

6. Make sure that the CURRENT FAULTS page is shown on the MFD.
7. Wait for a minimum of one minute until all of the faults are shown.
8. On the CURRENT FAULTS page, make sure that only one of the messages that follows is shown:

• Note •**On the EICAS control panel, push the UP and DN pushbuttons to scroll the pages up or down.**

- IAPS IOC 1A
- IAPS IOC 1B
- IAPS IOC 2A
- IAPS IOC 2B

Continued

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MEL	Integrated Avionics Processor System (IAPS) (Input/Output Concentrator (IOC)) (Continued)	Repair Category	Quantity Installed	Minimum Required
22-12-02-2		C	4	3

9. Exit from the MDC as follows:

- a. On the ECP, push the MENU pushbutton to go back to the MAINTENANCE MAIN MENU page.
- b. On the FS280.00 bulkhead behind the pilot seat, set the MAINT switch to OFF.
- c. Make sure that the navigation data is shown on the MFD 1 (MFD 2).

(O) OPERATIONS.

If IOC 1A is inoperative, be alert that NWS can revert to a free-castoring mode during taxiing when NLG strut is fully extended. Therefore, do as follows:

- a. Aft CG loading shall be minimized.
- b. Asymmetric brakes should be used to maintain directional control as required.
- c. Additional turning distance may be required.
- d. Avoid T/R use during taxi.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Mach Trim System	Repair Category	Quantity Installed	Minimum Required
22-21-01		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) Except where enroute operations requires its use, may be inoperative provided operations are conducted at or below 250 KIAS/.70 M when autopilot is disengaged.

PLACARD.

Place a placard/sticker on the STABILIZER / MACH TRIM panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Maximum altitude FL250 with autopilot disengaged or inoperative.

If autopilot is inoperative climb, cruise, and decent speeds must be set to 250KIAS/.70 M.

(D) DISPATCH.

1. If autopilot is inoperative climb, cruise, and decent speeds must be set to 250KIAS/.70 M and the flight must be planned at FL250 or below.
2. When calculating release, in FPCFP, under DP-Perf, type MACHTRIM. Verify on release under speed schedule that climb, cruise and decent read as follows: CLIMB 250/M70, CRUISE 250, DECENT M70/250.

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MEL	Repair Category	Quantity Installed	Minimum Required
22-22-01-1b Yaw Dampers	C	2	1

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided the affected yaw damper is verified not engaged.

• Note •

PER AD 2018-06-02, all PSA aircraft are compliant have and had SB 670BA-22-007 incorporated.

• Note •

In addition to the MEL, apply ACI 90-10-04 CAT II Status.**PLACARD.**

Place a placard/sticker on the Yaw Damper control panel.

(M) MAINTENANCE.

1. Make sure that the inoperative yaw damper pushbutton is not set on the Yaw Damper control panel.
2. On the HYDRAULIC panel, set the ACMP 1, 2, and 3A switches to ON.
3. Set the rudder trim to zero.
4. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to MFD 1 or MFD 2.
5. Make sure that the MAINTENANCE MAIN MENU page shows on the MFD.
6. On the EICAS control panel (ECP), push the UP and DN pushbuttons to move the cursor (>) to FCC DIAGNOSTICS.
7. On the ECP, push the SEL pushbutton to get access to the FCC DIAGNOSTICS page.
8. Make sure that the FCC DIAGNOSTICS page shows on the MFD.
9. Make a selection of the REPORT MODE page as follows:
 - a. Make sure that the autopilot is disengaged.
 - b. On the flight control panel (FCP), push and hold the left (right) FD pushbutton and two mode pushbuttons at the same time for one second.

• Note •

The instructions for the FCP controls show on the MFD.

- c. Make sure that the REPORT MODE page shows on the MFD.
10. Make a selection of the INPUT MODE page as follows:
 - a. On the FCP, push two mode pushbuttons at the same time for one second.
 - b. Make sure that the INPUT MODE page shows on the MFD.
11. On the FCP, push a mode pushbutton to move the cursor to the next line.
12. Turn the VS/pitch wheel until the parameter RUDANA comes into view.

Continued

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MEL	Repair Category	Quantity Installed	Minimum Required
22-22-01-1b	C	2	1
13. With the feet off the rudder pedals, make sure that the RUDANA value is <0.5 degrees on the left and right columns.			
• Note • If the RUDANA value is >0.5 degrees, it is not permitted to dispatch the aircraft.			
14. Exit from the diagnostics as follows:			
<ol style="list-style-type: none"> On the FCP, push and hold three mode pushbuttons at the same time for one second. On the display control panel (DCP), turn the FORMAT knob on detent. Make sure that the MAINTENANCE MAIN MENU page shows on the MFD 1 (MFD 2). On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to OFF. Make sure that the navigation data shows on the MFD 1 (MFD 2). 			
15. On the HYDRAULIC panel, set the ACMP 1, 2, and 3A as required.			
(O) OPERATIONS. Not required.			
(D) DISPATCH. Not required.			
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MEL	ARINC Communications Addressing and Reporting System (ACARS)	Repair Category	Quantity Installed	Minimum Required
23-22-01		C	1	0
REMARKS AND EXCEPTIONS.				
(O) (D) May be inoperative provided Operations procedures listed below are used.				
• Note • Any portion of system which operates normally may be used.				
PLACARD. Place a placard/sticker on the ACARS unit.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS.				
1. Dispatch paperwork will include TLR data.				
2. Crew will make all required reports to the station and will monitor the appropriate ARINC enroute frequency per the Flight Operations Manual.				
(D) DISPATCH.				
1. Ensure the following remark is added to the release "Please submit all OOOI times to airport operations via radio as soon as able."				
2. Edit the ATC Strip to remove "E3" from the list of equipment codes in Item 10a.				
MMEL 20	END	25 OCT 19		

MEL	Passenger Address System	Repair Category	Quantity Installed	Minimum Required
23-31-01		B	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Alternate, normal and emergency procedures and/or operating restrictions listed below are used, and
- b. Flight Attendant Call Switch Lights and Flight Attendant Audio Alerting System of Crewmember Interphone System are operative.

• Note •**Any station function(s) that operates normally may be used.****PLACARD.**

Place a placard/sticker on the Interphone Control Unit and on the Flight Attendant handset(s).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Use interphone system as alternate procedures for all necessary internal communications.

Normal Procedures

Before takeoff, cabin crew will make a direct voice communication with all passengers. All preflight announcements must be completed prior to takeoff. All in-flight announcements are by direct voice communication with passengers.

Emergency Procedures

Flightdeck crew uses interphone to communicate with cabin crew. If required, all emergency announcements will be via direct communications with passengers.

1. Ensure that cabin attendant interphone and aural alerting (chime) system is fully operational.
2. Check that the flight compartment/cabin interphone system is fully operational.
3. Check that the megaphones are available and operative.

(D) DISPATCH.

Not required.

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MEL	Passenger Address System - Passenger Address "PA" Switch Lights (Interphone Control Unit and Flight Attendant Stations) (light function only)	Repair Category	Quantity Installed	Minimum Required
23-31-01-1		C	3	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Alternate, normal and emergency procedures, and/or operating restrictions listed below are used, and
- b. Flight Attendant Call Lights and Flight Attendant Audio Alerting System of Crewmember Interphone System are operative.

• Note •

Any station function(s) that operates normally may be used.

PLACARD.

Place a placard/sticker on the Interphone Control Unit and on the Flight Attendant Handset(s).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Pilots will coordinate with the Flight Attendant via the interphone system prior to making any Passenger Address (PA) announcement.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Passenger Address System - Lavatory Speakers	Repair Category	Quantity Installed	Minimum Required
23-31-01-2		C	2	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided alternate, normal and emergency procedures, and/or operating restrictions listed below are used.

PLACARD.

Place a placard/sticker on the Interphone Control Unit and on the Flight Attendant Handset(s).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Lavatory must be unoccupied prior to all normal or emergency announcements.

• Note •

Ensure that cabin attendant interphone and aural alerting (chime)
system is fully operational.**(D) DISPATCH.**

Not required.

MMEL 20	END	25 OCT 19
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MEL	Repair Category	Quantity Installed	Minimum Required
23-31-02	B	2	1

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Operative handset is located at an operative Flight Attendant seat assembly, and
- b. Operations procedures listed below for affected Flight Attendant station are used.

• Note •**Any handset function(s) that operates normally may be used.****PLACARD.**

Place a placard/sticker on the appropriate handset.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Use passenger address system as alternate procedures for all necessary internal communications.

Normal Procedures

All normal in-flight announcements are to be made using the operative handset.

Emergency Procedures

Cockpit crew may use passenger address system to communicate with Flight Attendant with inoperative handset. All emergency in-flight announcements will be made using the passenger address system.

Verify that the passenger address system is fully operational before each flight.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Prerecorded Announcement and Boarding Music System	Repair Category	Quantity Installed	Minimum Required
23-32-01		D	1	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided Operations procedures listed below are used.				
PLACARD. Place a placard/sticker on the Control Panel for the cabin briefer.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. <ol style="list-style-type: none"> 1. Use passenger address system for announcements. 2. Appropriate oral briefings will be given directly to the passengers by the Flight Attendant. The briefings will include pre-takeoff, pre-landing, after-landing, and any additional briefings required as deemed necessary by the flight crew. 				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Crewmember Interphone System - Flight Deck to Cabin Station(s) (Audio Control Panel Interphone Function(s))	Repair Category	Quantity Installed	Minimum Required
23-40-01-1a		B	3	1
REMARKS AND EXCEPTIONS.				
(O) Two may be inoperative provided: <ol style="list-style-type: none"> a. Either pilot or co-pilot has an operative flight deck to cabin interphone (two way), and b. Operations procedure listed below for communication with cabin are used. 				
• Note • Any station function(s) that operates normally may be used.				
PLACARD. Place a placard/sticker at the affected station.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Communicate with Flight Attendant using operative Audio Control Panel interphone function.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Crewmember Interphone System - Cabin to Flight Deck (Flight Attendant Station(s) to Flight Deck)	Repair Category	Quantity Installed	Minimum Required
23-40-01-1b		B	2	1

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Cabin to flight deck interphone voice communication function (two way) operates normally at least at one Flight Attendant station,
- b. Unaffected Flight Attendant station(s) has an operative Flight Attendant Seat Assembly,
- c. Unaffected Flight Attendant station(s) has an operative Flight Attendant Handset, and
- d. Operations procedures listed below for the affected Flight Attendant station(s) are used.

• Note •**Any station function(s) that operates normally may be used.****PLACARD.**

Place a placard/sticker at the affected station.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Advise Flight Attendant to communicate with flight deck from operative Flight Attendant interphone station.

(D) DISPATCH.

Not required.

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MEL	Crewmember Interphone System - Cabin to Cabin (Flight Attendant Station(s) to Flight Attendant Station(s))	Repair Category	Quantity Installed	Minimum Required
23-40-01-1c		B	2	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided Operations procedures listed below for the affected Flight Attendant station(s) are used.				
• Note • Any station function(s) that operates normally may be used.				
PLACARD. Place a placard/sticker at the affected station.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Flight Attendants will use direct voice communication or hand signals if necessary to communicate.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Crewmember Interphone System - Flight Deck to Ground (Audio Control Panel(s) to Ground)	Repair Category	Quantity Installed	Minimum Required
23-40-01-1d		C	3	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided Operations procedures listed below are used.				
PLACARD. Place a placard/sticker at the affected station.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. The Captain will advise the ground personnel, if required, that company established hand signals will be used for normal, alternate and emergency procedures.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Crewmember Interphone System - Ground to Flight Deck (Maintenance Interphone Station(s) to Flight Deck)	Repair Category	Quantity Installed	Minimum Required
23-40-01-1e		C	4	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided Operations procedures listed below are used.

- a. Operations procedures listed below are used.
- b. External AC service panel service interphone jacks operate normally.

PLACARD.

Place a placard/sticker at the affected station.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Coordinate with ground personnel to establish alternate means of communication.

(D) DISPATCH.

Not required.

MMEL 20

END

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MEL	Crewmember Interphone System - Flight Deck Call Switch Lights ("CALL" and "EMER") (light function only)	Repair Category	Quantity Installed	Minimum Required
23-40-01-2b		B	2	0

REMARKS AND EXCEPTIONS.

May be inoperative provided the flight compartment audio alerting system (chime) is operative.

• Note •

Flight deck audio alerting system (chime) must always be operative.

• Note •

Any Flight Deck Call Switch Light function(s) that operates normally may be used.

PLACARD.

Place a placard/sticker on the Interphone Control Unit and on the Flight Attendant Handset.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Crewmember Interphone System - Flight Attendant Call Switch Lights ("ATT", "FLT" and "EMG") (light function only)	Repair Category	Quantity Installed	Minimum Required
23-40-01-2c		B	3	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Passenger Address System is operative, and
- b. Operations procedures listed below for contacting Flight Attendants are used.

• Note •

**Passenger to Attendant Call System is considered
Non-Essential Equipment and Furnishings (NEF).**

• Note •

**Any Flight Attendant Call Switch Light function(s)
that operates normally may be used.**

PLACARD.

Place a placard/sticker on the Interphone Control Unit and on the Flight Attendant Handset.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

PA is used to alert/call Flight Attendant.

(D) DISPATCH.

Not required.

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MEL	Crewmember Interphone System - Mid Cabin Flight Attendant Call Lights (Cockpit, Lavatory, Cabin)	Repair Category	Quantity Installed	Minimum Required
23-40-01-2d		B	6	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided Passenger Address System is operative.				
<p style="text-align: center;">• Note •</p> Passenger to Attendant Call System is considered Non-Essential Equipment and Furnishings (NEF).				
<p style="text-align: center;">• Note •</p> Any Flight Attendant Call Switch Light function(s) that operates normally may be used.				
PLACARD. Place a placard/sticker on the Interphone Control Unit and on the Flight Attendant Handset.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. The flight crew will use PA to alert the Flight Attendants of a sterile cockpit and in the event of an inoperative Flight Attendant Chime.				
(D) DISPATCH. Not required.				
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MEL	Crewmember Interphone System - Flight Attendant Audio Alerting System (Chime)	Repair Category	Quantity Installed	Minimum Required
23-40-01-2e		B	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Passenger Address System is operative, and
- b. Operations procedures listed below for contacting Flight Attendants are used.

• Note •

**Passenger to Attendant Call System is considered
Non-Essential Equipment and Furnishings (NEF).**

PLACARD.

Place a placard/sticker on the Interphone Control Unit and on the Flight Attendant Handset.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

The flight crew will use PA to alert the Flight Attendants of a sterile cockpit and in the event of an inoperative Flight Attendant Chime.

(D) DISPATCH.

Not required.

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MEL	Crewmember Interphone System - Mechanic Call Switch Lights (CKPT "CALL" and MECH "CALL")	Repair Category	Quantity Installed	Minimum Required
23-40-01-2f		C	2	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided Operations procedures listed below are used.

PLACARD.

Place a placard/sticker at the affected station.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Coordinate with ground personnel to establish alternate means of communication.

(D) DISPATCH.

Not required.

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MEL	Hand Held Microphones	Repair Category	Quantity Installed	Minimum Required
23-51-01-1		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided associated boom microphone is used and operates normally.				
PLACARD. Place a placard/sticker at the affected station.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	RT/IC Switches (Pilot/Copilot)	Repair Category	Quantity Installed	Minimum Required
23-51-02-1		C	4	2
REMARKS AND EXCEPTIONS.				
Two may be inoperative provided:				
<ul style="list-style-type: none"> a. Switch is not failed in transmit mode, b. One RT/IC switch operates normally for each crewmember, and c. Hand held microphone on affected side is operative. 				
PLACARD. Place a placard/sticker on the affected Audio Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	RT/IC Switch (Observer's)	Repair Category	Quantity Installed	Minimum Required
23-51-02-2		A	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided:

- a. Switch is not failed in transmit mode,
- b. Seat is acceptable to the FAA inspector for the performance of official duties,
- c. Required minimum safety equipment (safety belt and oxygen) is available, and
- d. Repairs are made within two flight days.

• Note •

These provisos are intended to provide for occupancy of the above seats by FAA inspector when the minimum safety equipment (oxygen and safety belt) is functional and the inspector determines the conditions to be acceptable.

• Note •

The pilot in command will determine if the minimum safety equipment is functional for other persons authorized to occupy the observer's seat.

PLACARD.

Place a placard/sticker on the Observer's Audio Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Flight Compartment Speakers	Repair Category	Quantity Installed	Minimum Required
23-51-03		C	2	0
REMARKS AND EXCEPTIONS.				
Both may be inoperative provided all flight crew members on flight deck duty utilize headsets.				
PLACARD. Place a placard/sticker on the affected Audio Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Crewmembers must utilize headsets during operations.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Boom Microphones	Repair Category	Quantity Installed	Minimum Required
23-51-04		A	3	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided:				
a. Associated handheld microphone is installed and operates normally, and b. Repairs are made within three flight days.				
PLACARD. Place a placard/sticker on the affected Audio Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Headsets	Repair Category	Quantity Installed	Minimum Required
23-51-05-1		D	3	2
REMARKS AND EXCEPTIONS.				
Any in excess of those required for each person on flight compartment duty may be inoperative.				
PLACARD.				
Place a placard/sticker on the affected headsets.				
• Note •				
Only the observer's headset is permissible to be inoperative. If either the captain's or first officer's headset is missing, damaged or inoperative, it must be swapped with the observer's headset in order to provide relief.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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MEL	Observer's Audio Control Panel	Repair Category	Quantity Installed	Minimum Required
23-51-06		A	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided:

- a. Seat is acceptable to the FAA inspector for the performance of official duties,
- b. Required minimum safety equipment (safety belt and oxygen) is available, and
- c. Repairs are made within two flight days.

• Note •

These provisos are intended to provide for occupancy of the above seats by FAA inspector when the minimum safety equipment (oxygen and safety belt) is functional and the inspector determines the conditions to be acceptable.

• Note •

The pilot in command will determine if the minimum safety equipment is functional for other persons authorized to occupy the observer's seat.

PLACARD.

Place a placard/sticker on the Observer's Audio Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Cockpit Voice Recorder (CVR)	Repair Category	Quantity Installed	Minimum Required
23-71-01		A	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided:				
<ul style="list-style-type: none"> a. Flight Data Recorder is operative, and b. Repairs are made within three flight days. 				
PLACARD.				
Place a placard/sticker on the Cockpit Voice Recorder panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	#2 Radio Tuning Unit (RTU)	Repair Category	Quantity Installed	Minimum Required
23-81-01-2		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Cross-side tuning from RTU #1 is operative,
- b. Backup tuning control on at least one FMS is operative,
- c. RTU #2 is de-selected using its RTU INHIBIT switch to ensure cross-side tuning by RTU #1.

• Note •

If RTU #1 fails, all RTU mode selections (COM 1 Squelch ON/OFF, NAV 1 Marker sens. LO/HI NAV 1 DME-HOLD, ATC Altitude ON-OFF, ATC ID, ADF ANT, ADF BFO (ON/OFF), TCAS and HF) will be lost; however, COM/NAV frequency tuning will be available through FMS.

• Note •

PSA Aircraft do not have HF installed.

PLACARD.

Place a placard/sticker on the #2 Radio Tuning Unit.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For aircraft with dual FMS when RTUs are INHIBIT the burst tune enables both NAV/COM radio#1 and #2.

1. Make sure that the FMS TUNE INHIBIT switch is off.
2. Set both RTU#1 and RTU#2 INHIBIT switches on.
3. Enter a known and in range VHF communication frequency on one FMS CDU scratchpad.
4. Select COM1 (COM2) index line.
5. Listen for communication activity reception on the selected frequency or transmit a radio check on the selected frequency.
6. Enter a known and in range NAVAID frequency on one FMS CDU scratchpad.
7. Select NAV1 (NAV2) index line.
8. Select NAV SOURCE on the DCP1 (DCP2).

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MEL	#2 Radio Tuning Unit (RTU) (Continued)	Repair Category	Quantity Installed	Minimum Required
23-81-01-2		C	1	0

9. Check NAV operation on the PFD.

10. Set RTU#1 INHIBIT switch to off.

• Note •

The RTU INHIBIT switch must be pushed in on the inoperative RTU in order to allow cross-side tuning on the remaining RTU.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	FMS TUNE INHIBIT Switch	Repair Category	Quantity Installed	Minimum Required
23-82-02		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative in ON (INHIBIT) position provided both RTU's are operative.

• Note •

Navigation Auto-tuning function of the FMS will be inhibited. FMS navigation performance may be degraded if GPS is not available.

PLACARD.

Place a placard/sticker on the STANDBY Tuning Unit Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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ATA Chapter 24: Electrical Power

MEL	Integrated Drive Generators (IDG) Systems - Constant Speed Drives (CSD)	Repair Category	Quantity Installed	Minimum Required
24-11-01-2		A	2	1

REMARKS AND EXCEPTIONS.

(O) (D) One may be inoperative provided:

- a. Respective GEN 1/2 switch is selected to OFF/RESET,
- b. Respective IDG is disconnected,
- c. APU generator is operated continuously throughout flight,
- d. Performance corrections for APU ON are applied,
- e. Operations are conducted at or below FL320, and
- f. Repairs are made within 100 flight hours (cumulative).

PLACARD.

Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative Constant Speed Drive, do as follows:

WARNING

The M&E system tracks the time that the engine is operated with the IDG disconnected based on the initiation of the deferral. When the total logged time is more than 100 hours, the IDG must be removed and examined by an authorized repair facility. If you do not do this, damage to the IDG can occur.

1. Before associated engine start, momentarily press in the respective IDG 1/2 DISC switch.
2. During the associated engine start, make sure that once above the 20% N2 the "IDG 1/2 DISC" EICAS status message and the respective DISC light come on.

• Note •

If the EICAS status message and the respective DISC do not come on during the engine start, the affected IDG disconnect mechanism has failed, the engine start has to be aborted, and the aircraft must not be dispatched.

• Note •

All performance data used by PSA for takeoff, obstacle clearance and landing assumes the APU is operating.

Continued

MEL	Integrated Drive Generators (IDG) Systems - Constant Speed Drives (CSD) (Continued)	Repair Category	Quantity Installed	Minimum Required	
		A	2	1	
The APU is operated continuously, do as follows:					
1. Calculate the fuel burn of the APU for the T/O FUEL time (on the release) and place that amount of fuel in the contingency (CONTINGY) section of the release. a. The APU fuel burn rate is 280 pounds per hour.					
(D) DISPATCH.					
1. Dispatcher must select "APU Operative ON" in Dispatch Monitor for take-off and landing. 2. Calculate the fuel burn of the APU for the T/O FUEL time (on the release) and place that amount of fuel in the contingency (CONTINGY) section of the release. a. APU fuel burn rate is 280 lbs/hr. 3. Ensure flight is planned at FL320 or below. 4. Enter "extra CONTINGY fuel for APU burn" in the release remarks section.					
MMEL 20	END			25 OCT 19	

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MEL	Integrated Drive Generators (IDG) Systems - Generators, Generator Control Units (GCU)	Repair Category	Quantity Installed	Minimum Required
24-11-01-4		B	2	1

REMARKS AND EXCEPTIONS.

(O) (D) One may be inoperative provided:

- a. Respective GEN 1/2 switch is selected to OFF/RESET,
- b. APU generator is operated continuously throughout flight,
- c. Performance corrections for APU ON are applied,
- d. Operations are conducted at or below FL320.

PLACARD.

Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

All performance data used by PSA for takeoff, obstacle clearance and landing assumes the APU is operating.

The APU is operated continuously, do as follows:

1. Maximum flight altitude 32,000 ft.
2. Calculate the fuel burn of the APU for the T/O FUEL time (on the release) and place that amount of fuel in the contingency (CONTINGY) section of the release.
 - a. The APU fuel burn rate is 280 pounds per hour.

(D) DISPATCH.

1. Dispatcher must select "APU Operative ON" in Dispatch Monitor for take-off and landing.
2. Calculate the fuel burn of the APU for the T/O FUEL time (on the release) and place that amount of fuel in the contingency (CONTINGY) section of the release.
 - a. APU fuel burn rate is 280 lbs/hr.
3. Ensure flight is planned at FL320 or below.
4. Enter "extra CONTINGY fuel for APU burn" in the release remarks section.

MMEL 20	END	25 OCT 19
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MEL	IDG 1/2 "FAULT DISC" Switchlights (light function only)	Repair Category	Quantity Installed	Minimum Required
24-11-02		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	APU Generator System	Repair Category	Quantity Installed	Minimum Required
24-22-01		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided:				
1. IDG 1 and IDG 2 are operative, and				
2. APU GEN switch is selected to OFF/RESET.				
• Note •				
IDG is considered inoperative when either the Generator/GCU System or the CSD System is inoperative.				
PLACARD.				
Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Ensure downline stations have a functioning AC Power Cart.				
MMEL 20	END	25 OCT 19		

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MEL	Air Driven Generator (ADG) Auto-Deploy System	Repair Category	Quantity Installed	Minimum Required
24-23-01		C	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) May be inoperative provided system is deactivated.

PLACARD.

Place a placard/sticker on the ADG AUTO DEPLOY Control Panel.

(M/FC) MAINTENANCE.

For an inoperative ADG Automatic Deploy System, do as follows:

1. Open and collar the circuit breaker that follows:

CB PANEL: **CBP-2**CB NO: **N6**NAME: **ADG DEPLOY-AUTO**ZONE: **222**

• Note •

When the deactivation procedure is completed, the ADG AUTO FAIL status message will show continuously on the EICAS secondary page.

(O) OPERATIONS.

• Note •

Manual deployment of the ADG is still available if needed.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	AUTO XFER “FAIL/OFF” Switchlights (light function only)	Repair Category	Quantity Installed	Minimum Required
24-24-01		C	2	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Transformer Rectifier Units (TRUs)	Repair Category	Quantity Installed	Minimum Required
24-31-01-2		B	4	3
REMARKS AND EXCEPTIONS.				
One may be inoperative.				
PLACARD.				
Place a placard/sticker on the ELECTRICAL POWER Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

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MEL	Repair Category	Quantity Installed	Minimum Required
24-31-02-2	C	4	0

REMARKS AND EXCEPTIONS.

(M/FC) May be inoperative.

PLACARD.

Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel.

(M/FC) MAINTENANCE.

For an inoperative TRU cooling fan(s), do as follows:

1. Select CURRENT FAULT page on the MDC (refer to AMM TASK 45-45-00-970-804).
2. Determine the failed TRU cooling fan which will be indicated by FAN/OVERHEAT SW message.

(M) MAINTENANCE.

For a failed TRU cooling fan, do as follows:

1. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to MFD1 or MFD2.
2. On the multifunction display (MFD), make sure that the MAINTENANCE MAIN MENU page shows.
3. On the EICAS control panel (ECP), push the UP and DN pushbuttons to move the cursor (>) to the CURRENT FAULTS line.

• Note •

The function of the pushbuttons on the EICAS control panel shows at the bottom of the MFD display.

4. Determine the failed TRU cooling fan which will be indicated by FAN/OVERHEAT SW message.

• Note •

A TRU FAN FAIL status message will be displayed when any TRU cooling fan fails.

5. Exit the MDC as follows:
 - a. On the ECP, push the DOORS pushbutton as required to go back to the MAINTENANCE MAIN MENU page.
 - b. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to OFF.
 - c. Make sure that the navigation data shows on the MFD 1 or MFD 2.

During ground operations and if the aircraft was already dispatched with TRU failure (24-31-01), do as follows:

• Note •

The load of the inoperative TRU will be transferred to the opposite TRU which will increase its power dissipation.

Continued

MEL	TRU Cooling Fans (Continued)	Repair Category	Quantity Installed	Minimum Required
24-31-02-2		C	4	0
1. If the ambient temperature is above 86° F (30° C), open the two forward equipment doors (211AL and 212AR) for any of the combinations that follow:				
If TRU 1 cooling fan failed and TRU 2 FAIL status message is shown on the EICAS,				
OR				
If TRU 2 cooling fan failed and TRU 1 FAIL status message is shown,				
OR				
If ESS TRU 1 cooling fan failed and ESS TRU 2 FAIL message is shown,				
OR				
If ESS TRU 2 cooling fan failed and ESS TRU 1 FAIL message is shown.				
• Note • There are no limitations for all other combinations.				
2. Before flight, close the two forward equipment doors (211AL and 212AR).				
(O) OPERATIONS.				
• Note • A TRU FAN FAIL status message will be displayed when any TRU cooling fan fails.				
(D) DISPATCH. Not required				
MMEL 20	END	25 OCT 19		

ATA Chapter 24: Electrical Power

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REVISION 10

30 OCT 20

MEL	Main Battery and Main Battery Charger System	Repair Category	Quantity Installed	Minimum Required
24-32-01-2		A	1	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. Main Battery and Main Batter Charger System are deactivated, and
- b. Repairs are made within one flight day.

• Note •

The cockpit dome light (DS70) will be inoperative.

PLACARD.

Put a MAIN BATTERY and MAIN BATTERY CHARGER INOPERATIVE placard on the ELECTRICAL POWER SERVICES Control Panel.

(M) MAINTENANCE.

For an inoperative Main Battery and Main Battery Charger System, do as follows:

1. Do the procedure to disconnect the main battery (refer to AMM TASK 24-32-00-040-801).
2. Deactivate the Main Battery Charger as follows:
 - a. Open and collar the circuit breaker that follows:
CB PANEL: **CBP-1**
CB NO: **C5**
NAME: **MAIN BATTERY CHARGER**
ZONE: **221**

• Note •

When the deactivation procedure is completed, the MAIN BATT OFF caution message may show continuously on the EICAS primary page and the MAIN BATT CHGR status message may show continuously on the EICAS secondary page. The cockpit dome light (DS70) will be inoperative.

• Note •

The SSPC (Solid State Power Controller) P/N 310CZ01Y00 may have been installed temporarily in lieu of P/N P700-A154-E002 in K101 (JB5) position. MEL item 24-32-01 (Main Battery) must not be applied when SSPC P/N 310CZ01Y00 is installed in K101 (JB-5).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	External AC Power "AVAIL/IN USE" Switchlight (Overhead Panel) (light function only)	Repair Category	Quantity Installed	Minimum Required
24-41-01		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	External AC Power "AVAIL/IN USE" Switchlight (Service Panel) (light function only)	Repair Category	Quantity Installed	Minimum Required
24-41-02		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel and on the AC EXTERNAL SERVICE panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

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MEL	External AC Power System	Repair Category	Quantity Installed	Minimum Required
24-41-03		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the ELECTRICAL POWER SERVICES Control Panel and on the AC EXTERNAL SERVICES panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Load Shedding System	Repair Category	Quantity Installed	Minimum Required
24-50-03		D	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker next to the Galley Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

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MEL	AC ESS XFER "ALTN" Switchlight (light function only)	Repair Category	Quantity Installed	Minimum Required
24-51-01		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the ELECTRICAL POWER Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	DC Utility Bus	Repair Category	Quantity Installed	Minimum Required
24-61-02		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided cabin right side reading lights are considered inoperative.				
• Note •				
RH side passenger reading lights must be entered on NEF List.				
PLACARD.				
Place a placard/sticker on the Flight Attendant Control panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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ATA Chapter 25: Equipment & Furnishings

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MEL	Fasten Seat Belt While Seated Placards	Repair Category	Quantity Installed	Minimum Required
25-00-01		C	70	35
REMARKS AND EXCEPTIONS.				
One or more placards may be illegible or missing provided a legible sign or placard is readable from each occupied passenger seat.				
• Note • One “Fasten Seat Belt While Seated” placard must be readable at each bank of seats.				
PLACARD. Place a placard/sticker on the affected component(s).				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Pilot Seat – Lumbar Supports	Repair Category	Quantity Installed	Minimum Required
25-11-01-1		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative in the lowest position provided seat is acceptable to the affected crewmember.				
PLACARD. Place a placard/sticker on the affected component(s).				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Pilot Seat – Armrests	Repair Category	Quantity Installed	Minimum Required	
		C	4	0	
REMARKS AND EXCEPTIONS.					
(M) May be inoperative or missing provided:					
1. Egress is not impaired, and					
2. Seat is acceptable to the affected crewmember.					
PLACARD.					
Place a placard/sticker on the affected component(s).					
(M) MAINTENANCE.					
For an inoperative pilot and/or co-pilot seat armrest, if requested, do as follows:					
1. Secure the inoperative armrest in the upright position.					
(O) OPERATIONS.					
Not required.					
(D) DISPATCH.					
Not required.					
MMEL 20	END	25 OCT 19			

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MEL	Pilot Seat – Height Adjustment	Repair Category	Quantity Installed	Minimum Required
25-11-01-3		B	2	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative provided:

- a. Seat is secured in vertical position acceptable to affected crewmember,
- b. Fore/Aft Adjustment are verified operative,
- c. Egress is not impaired.

PLACARD.

Place a placard/sticker on the affected Pilot's seat.

(M) MAINTENANCE.

For an inoperative pilot and/or co-pilot seat height adjustment, if requested, do as follows:

1. Secure the inoperative seat in a vertical position that is satisfactory to the crewmember.
2. Make sure that the fore/aft mechanism is operative.

• Note •

Maintenance function to be performed on crew request.**(O) OPERATIONS.**

1. Affected pilot must verify full range of movement of all flight controls before each flight.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Pilot Seat – Fore/Aft Adjustments	Repair Category	Quantity Installed	Minimum Required
25-11-01-4		B	2	0
REMARKS AND EXCEPTIONS.				
(M) (O) May be inoperative provided:				
<ul style="list-style-type: none"> a. Seat is secured in the fore/aft position acceptable to affected crewmember, b. Height Adjustment is verified operative, and c. Egress is not impaired. 				
PLACARD.				
Place a placard/sticker on the affected pilot's seat.				
(M) MAINTENANCE.				
For an inoperative pilot and/or co-pilot seat fore/aft adjustment, if requested, do as follows:				
<ol style="list-style-type: none"> 1. Secure the inoperative seat in a forward/aft position that is satisfactory to the crewmember. 2. Make sure that the height mechanism is operative. 				
(O) OPERATIONS.				
1. Affected pilot must verify full range of movement of all flight controls before each flight.				
(D) DISPATCH.				
Not required.				
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MEL	Pilot Seat – Recline Adjustments	Repair Category	Quantity Installed	Minimum Required
25-11-01-5		B	2	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative provided:

- a. Backrest is secured in a position that is acceptable to affected crewmember.

PLACARD.

Place a placard/sticker on the affected pilot's seat.

(M) MAINTENANCE.

For inoperative pilot and/or co-pilot recline adjustments, if requested, do as follows:

1. Secure the seat backrest in a position that is acceptable to affected crewmember.

(O) OPERATIONS.

1. Affected pilot must verify full range of movement of all flight controls before each flight.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Pilot Seat – Thigh Supports	Repair Category	Quantity Installed	Minimum Required
25-11-01-6		C	2	0

REMARKS AND EXCEPTIONS.

May be inoperative provided seat is acceptable to affected crewmember,

PLACARD.

Place a placard/sticker on the affected pilot's seat.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Observer's Seat (including associated equipment)	Repair Category	Quantity Installed	Minimum Required
25-12-01		A	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. A passenger seat in the passenger cabin is made available to the FAA inspector for performance of official duties, and
- b. Repairs are made within two flight days.

PLACARD.

1. Place an "OBSERVER SEAT INOPERATIVE" placard/sticker on the observer's seat.
2. If applicable, put a "FOR FLIGHT CREW USE ONLY" placard/sticker on the passenger seat designated for flight crew use.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

If required, the seat designated for flight crew use is the seat that gives the easiest access to the flight crew's specified duties.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

May be inoperative provided:

- a. Required minimum safety equipment (safety belt and oxygen) is available,
- b. Seat is acceptable to the FAA inspector for the performance of official duties, and
- c. Repairs are made within two flight days.

• Note •

These provisos are intended to provide for occupancy of the above seats by a FAA inspector when the minimum safety equipment (oxygen and safety belt) is functional and the inspector determines the conditions to be acceptable.

• Note •

The pilot-in-command will determine if the minimum safety equipment is functional for other persons authorized to occupy the observer seat.

Continued

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MEL	Observer's Seat (including associated equipment) (Continued)	Repair Category	Quantity Installed	Minimum Required
25-12-01		A	1	0
PLACARD. Place a placard/sticker on the observer's seat.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Cockpit Sunvisor	Repair Category	Quantity Installed	Minimum Required
25-18-01		C	2	0
REMARKS AND EXCEPTIONS. May be inoperative provided affected sunvisor does not obstruct either pilot's field of view for takeoff and landing.				
PLACARD. Place a placard/sticker on the inoperative sunvisor.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
- OR OPTION 2 -				
REMARKS AND EXCEPTIONS. (M) (O) May be inoperative provided affected sunvisor is properly secured or removed from the aircraft.				
PLACARD. Place a placard/sticker on the inoperative sunvisor.				
(M) MAINTENANCE. For an inoperative cockpit sunvisor, do as follows:				
1. Remove the affected cockpit sunvisor (refer to AMM Task 25-18-01-000-801 or AMM Task 25-18-01-000-802).				
Continued				

MEL	Cockpit Sunvisor (Continued)	Repair Category	Quantity Installed	Minimum Required
25-18-01		C	2	0
(O) OPERATIONS.				
• Note • Affected sunvisor should be stowed in the Cockpit Storage Closet in order to avoid potential interference with flight control movement.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Cockpit Chart Holders (Control Column)	Repair Category	Quantity Installed	Minimum Required
25-18-02		B	2	1
REMARKS AND EXCEPTIONS.				
One holder may be inoperative or missing provided the EFB on the same side is operative.				
PLACARD. Place a placard/sticker on the control column, and/or on the side console.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
- OR OPTION 2 -				
REMARKS AND EXCEPTIONS.				
(M) May be inoperative provided affected holder is removed.				
PLACARD. Place a placard/sticker on the control column.				
(M) MAINTENANCE. For an inoperative chart holder, do as follows:				
1. Remove the affected chart holder (refer to AMM TASK 25-18-13-000-801).				
(O) OPERATIONS. Not required.				
MMEL 20	END	25 OCT 19		

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MEL	Passenger Seats	Repair Category	Quantity Installed	Minimum Required
25-21-01		D	67	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. Seat does not block an Emergency Exit,
- b. Seat does not restrict any passenger from access to the main aircraft aisle, and
- c. The affected seat(s) are blocked and placarded "DO NOT OCCUPY".

• Note •

A seat with an inoperative seat belt is considered inoperative.

• Note •

Inoperative seats do not affect the required number of Flight Attendants.

• Note •

Affected seat(s) may include the seat(s) behind and/or adjacent outboard seat(s).

• Note •

If seat back is removed due to being broken, all contents in the seat back pocket should be placed in the seat back pocket adjacent to the broken seat.**PLACARD.**

Place a "DO NOT OCCUPY" or "NOT FOR PASSENGER USE" placard/sticker on the inoperative passenger seat headrest.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Inoperative Seat is blocked from use.

(D) DISPATCH.

Ensure stations are notified of the number of seats that are available for the flight with deferred seats.

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MEL	Passenger Seats – Recline Mechanism	Repair Category	Quantity Installed	Minimum Required
25-21-01-1		D	76	0

REMARKS AND EXCEPTIONS.

May be inoperative and seat occupied provided seatback is immovable in full upright position.

PLACARD.

Place a placard/sticker near the Flight Attendant forward handset.

(M) MAINTENANCE.

Not required

(O) OPERATIONS.

Not required

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) May be inoperative and seat occupied provided seat is secured in the upright position.

PLACARD.

Place a placard/sticker near the flight attendant forward handset.

(M) MAINTENANCE.

For an inoperative seat back recline mechanism, do as follows:

1. Lock the inoperative seat back recline mechanism in the upright position
(refer to AMM TASK 25-21-00-040-805).

(O) OPERATIONS.

Not required

(D) DISPATCH.

Not required.

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MEL	Passenger Seats – Underseat Baggage Restraining Bar	Repair Category	Quantity Installed	Minimum Required
25-21-01-2		C	76	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Baggage is not stowed under seat with inoperative restraining bar,
- b. Associated seat is placarded "DO NOT STOW BAGGAGE UNDER THIS SEAT," and
- c. Restraining bar does not restrict any passenger from access to main aircraft aisle or emergency exit, and
- d. Operations procedures below are used to alert cabin crew of inoperative restraining bar.

PLACARD.

On the affected seat(s) place a "DO NOT STOW BAGGAGE UNDER THE SEAT" placard/sticker on the affected seat back.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative underseat baggage restraining bar, do as follows:

1. Make sure that the damaged restraining bar does not create a safety concern, call maintenance if required.
2. Alert the cabin crew of an inoperative or removed restraining bar.

(D) DISPATCH.

Not required.

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MEL	Passenger Seats – Armrest with Recline Mechanism	Repair Category	Quantity Installed	Minimum Required	
		D	76	0	
REMARKS AND EXCEPTIONS.					
(M) May be inoperative or missing and seat occupied provided:					
<ol style="list-style-type: none"> 1. Armrest does not block an emergency exit, 2. Armrest does not restrict any passenger from access to the main aircraft aisle, and 3. If armrest is missing, seat is secured in the full upright position. <p style="text-align: center;">• Note •</p> <p style="text-align: center;">Passenger seat recline mechanism must be deferred per MEL 25-21-01-1.</p>					
PLACARD.					
Place a placard/sticker near the Flight Attendant forward handset.					
(M) MAINTENANCE.					
Do the deactivation of the passenger seat back recline mechanism (refer to AMM TASK 25-21-00-040-805).					
(O) OPERATIONS.					
Not required.					
(D) DISPATCH.					
Not required.					
MTEL 20	END	25 OCT 19			

MEL	Passenger Seats – Armrest without Recline Mechanism	Repair Category	Quantity Installed	Minimum Required	
		D	35	0	
REMARKS AND EXCEPTIONS.					
May be inoperative or missing and seat occupied provided:					
<ol style="list-style-type: none"> a. Armrest does not block an emergency exit, and b. Armrest does not restrict any passenger from access to the main aircraft aisle. 					
PLACARD.					
Place a placard/sticker near the Flight Attendant forward handset.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
Not required.					
(D) DISPATCH.					
Not required.					
MTEL 20	END	25 OCT 19			

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REVISION 10

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MEL	Passenger Seat – Armrest Downlock Mechanism	Repair Category	Quantity Installed	Minimum Required
25-21-01-3c		D	31	0

REMARKS AND EXCEPTIONS.
May be inoperative and seat occupied provided:

- a. Armrest does not block an emergency exit, and
- b. Armrest does not restrict any passenger from access to the main aircraft aisle.

PLACARD.
Place a placard/sticker near the Flight Attendant forward handset.

(M) MAINTENANCE.
Not required

(O) OPERATIONS.
Not required

(D) DISPATCH.
Not required

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MEL	Flight Attendant Seat Assembly	Repair Category	Quantity Installed	Minimum Required
25-22-01-2		B	2	1

REMARKS AND EXCEPTIONS.
(M/FC) (O) One seat may be inoperative provided:

- a. Affected seat position is not occupied,
- b. Flight Attendant displaced by inoperative seat occupies the passenger seat most accessible to the inoperative seat, so as to most effectively perform assigned duties,
- c. Alternate procedures listed below are used as published in crew members manuals,
- d. Folding type seat stows automatically or is secured in the retracted position, and
- e. Passenger seat assigned to Flight Attendant is placarded "FOR FLIGHT ATTENDANT ONLY".

• Note •

An automatic folding seat that will not stow automatically is considered inoperative.

• Note •

A seat position with an inoperative or missing restraint system is considered inoperative.

Continued

MEL	Flight Attendant Seat Assembly (Continued)	Repair Category	Quantity Installed	Minimum Required
25-22-01-2		B	2	1

PLACARD.

1. Place a "DO NOT OCCUPY" placard/sticker on the inoperative Flight Attendant seat.
2. Put a "FOR FLIGHT ATTENDANT USE ONLY" placard on the passenger seat designated for Flight Attendant use.

(M/FC) MAINTENANCE.

For an inoperative Flight Attendant seat, do as follows:

1. Put the affected Flight Attendant seat in the retracted (stowed) position and secure it if necessary.

(O) OPERATIONS.**For an inoperative forward Flight Attendant seat, do as follows:**

1. Flight Attendant will occupy seat 1D **or**
2. If seat 1D is inoperative, the Flight Attendant will occupy seat 1A.
3. After receiving AUTO DATA PAX and CARGO, Switch to manual mode and Enter 4 in the ACARS Weight and Balance line for 0 fwd FA and 1 aft FA. Ensure the FA is entered as a passenger in the appropriate section.
4. Select SEND to request T/O DATA.

For an inoperative aft Flight Attendant jumpseat, do as follows:

1. Flight Attendant will occupy seat 23C **or**
2. If seat 23C is inoperative, the Flight Attendant will occupy seat 23D.
3. After receiving AUTO DATA PAX and CARGO, Switch to manual mode and Enter 3 in the ACARS Weight and Balance line for 1 fwd FA and 0 aft FA. Ensure the FA is entered as a passenger in the appropriate section.
4. Select SEND to request T/O DATA

• Note •

Switching from MANUAL Mode to AUTO Mode will result in the MANUAL entries being erased and replaced with the most recent AUTO DATA..

(D) DISPATCH.

Not required.

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30 OCT 20

MEL	Overhead Storage Bin(s)/Cabin and Galley Storage Compartments/Closets	Repair Category	Quantity Installed	Minimum Required
25-23-01		C	38	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative provided:

- a. Operations procedures below are used to secure compartment CLOSED,
- b. Affected bin, compartment or closet is prominently placarded DO NOT USE,
- c. Any emergency equipment located in affected compartment is considered inoperative, and
- d. Affected compartment is not used for storage of any item(s) except for those permanently affixed.
- e. Procedures below are used to alert crew members and passengers of inoperative bins, compartment or closets, and
- f. Passengers are briefed that affected bin compartment or closet is not used

• Note •

If no partitions are installed, the entire overhead storage compartment is considered one bin or compartment.

PLACARD.

Place a placard/sticker "NOT FOR PASSENGER USE" on the affected compartment.

(M) MAINTENANCE.**FOR A COMPARTMENT DOOR THAT CANNOT BE SECURED CLOSED**

For an inoperative overhead storage bin that will not close or has broken hinges, do as follows:

1. Verify if any partitions are installed; if no partitions are installed within a bin that is accessible by more than one door, the entire overhead storage compartment is considered one bin or compartment, and the adjacent overhead bin(s) must be considered inoperative and MEL'd separately.
2. If the bin does not stay closed, do the Deactivation of the Overhead Stowage Compartment Latches (refer to TASK 25-23-00-040-801)
3. If door will not close or has broken hinges, remove the door and place a piece of tape across the opening and placard DO NOT USE.

For an inoperative storage compartment/closet with a 1/4 turn retainer that will not close or has broken hinges, do as follows:

1. If door will not close or has broken hinges, remove the door and place a piece of tape across the opening and placard DO NOT USE.

For an inoperative storage compartment/closet without a 1/4 turn retainer that will not close or has broken hinges, do as follows:

1. If door will not close or has broken hinges, remove the door and place a piece of tape across the opening and placard DO NOT USE.

For an inoperative Overhead Storage Bin(s)/Cabin and Galley Storage Compartment/Closets with emergency equipment installed, consider that emergency equipment inoperative and apply associated MEL for that emergency equipment.

• Note •

If there is no relief for a particular emergency equipment, dispatch is not permitted.

Continued

MEL	Overhead Storage Bin(s)/Cabin and Galley Storage Compartments/Closets (Continued)	Repair Category	Quantity Installed	Minimum Required
25-23-01		C	38	0

FOR A COMPARTMENT DOOR THAT CAN BE SECURED CLOSED**(M/FC) MAINTENANCE.**

For an inoperative overhead storage bin that will close, do as follows:

1. Verify if any partitions are installed; if no partitions are installed within a bin that is accessible by more than one door, the entire overhead storage compartment is considered one bin or compartment, and the adjacent overhead bin(s) must be considered inoperative and MEL'd separately.
2. If door will close, tape the door shut using the DO NOT USE placard.

For an inoperative storage compartment/closet with a 1/4 turn retainer that will close, do as follows:

1. If door will close, tape the door shut using the DO NOT USE placard.

For an inoperative storage compartment/closet without a 1/4 turn retainer that will close, do as follows:

1. If door will close, tape the door shut using the DO NOT USE placard.

For an inoperative Overhead Storage Bin(s)/Cabin and Galley Storage Compartment/Closets with emergency equipment installed, consider that emergency equipment inoperative and apply associated MEL for that emergency equipment.

• Note •

If there is no relief for a particular emergency equipment, dispatch is not permitted.

• Note •

1. For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative.
2. Any emergency equipment located in the affected bin, compartment or closet (permanently affixed) is available for use.

(O) OPERATIONS.

Overhead Bin Deferral:

When an overhead bin is deferred, alternate crew bag storage is available in the opposite side bin or bin forward or bin aft of the crew bag storage location.

(D) DISPATCH.

Not required.

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30 OCT 20

MEL	Repair Category	Quantity Installed	Minimum Required
25-32-01	C	2	0

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided:

- a. Container is empty and the access is secured to prevent waste introduction into the compartment, and
- b. Procedures below are used to ensure that sufficient galley waste receptacles are available to accommodate all waste that may be generated on a flight.

PLACARD.

Place a placard/sticker on the affected receptacle door.

(M) MAINTENANCE.

Make sure that the affected container(s) is empty and access door secured (taped) closed to prevent waste introduction into the compartment.

(O) OPERATIONS.

Trash will be placed directly into the trash bag by removing the trash bin from the cart or compartment.

(D) DISPATCH.

Not required.

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MEL	Repair Category	Quantity Installed	Minimum Required
25-40-01	A	2	0

REMARKS AND EXCEPTIONS.

May be missing provided it is replaced within three calendar days.

PLACARD.

Place a placard/sticker on the ashtray holder.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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REVISION 10

MEL	Lavatory Waste Compartment Access Door/Flap Assembly	Repair Category	Quantity Installed	Minimum Required
25-40-02		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative or missing provided associated Lavatory Fire Extinguishing System is considered inoperative.				
• Note • Lavatory Fire Extinguishing System must be deferred under MEL 26-26-01.				
PLACARD. Place an INOPERATIVE-DO NOT USE placard on waste-flap assembly.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Lavatory Door Springs	Repair Category	Quantity Installed	Minimum Required
25-42-01		D	12	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative or missing provided:				
<ul style="list-style-type: none"> a. Door is verified operative (open and close) without interference, b. Associated lavatory door is locked before each takeoff and landing, and c. Operations procedure is used to close door(s) when required. 				
PLACARD. Place a LAVATORY DOOR SPRINGS INOPERATIVE placard on the lavatory door (as applicable).				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Crew will use pull handles and external lock to secure door if required.				
(D) DISPATCH. Not required.				
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MEL	Baggage Retrieval Modules	Repair Category	Quantity Installed	Minimum Required
25-51-01		D	2	0
REMARKS AND EXCEPTIONS.				
(M) One or both may be inoperative provided affected module(s) is/are secured at the bulkhead position.				
PLACARD. Place a placard/sticker on the FWD and CTR Cargo Compartment door.				
(M) MAINTENANCE. For an inoperative forward baggage retrieval module, do as follows: 1. Secure the forward main module at the bulkhead position (refer to AMM TASK 25-51-02-040-801).				
For an inoperative aft baggage retrieval module, do as follows: 1. Secure the aft main module at the bulkhead position (refer to AMM TASK 25-51-02-040-801).				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Cargo Compartment Door Restraint Nets (Including Associated Equipment)	Repair Category	Quantity Installed	Minimum Required
25-51-02		C	3	0

REMARKS AND EXCEPTIONS.

(O) (D) May be damaged or missing provided affected cargo compartment is empty.

PLACARD.

Place a placard/sticker on the CARGO FIREX panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.Observe weight and balance limitations. Carriage of ballast is **prohibited**.**(D) DISPATCH.**

Ensure stations are notified that the flight will not be planned with cargo in the effected cargo compartment.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) May be damaged or missing provided cargo in affected cargo compartment is secured before each flight.

• Note •

**Associated equipment includes Snap Latches,
Restraint Net Brackets and Floor Pan Fitting Rings/Posts.**

PLACARD.

Place a placard/sticker on the CARGO FIREX panel.

(M) MAINTENANCE.**Before each flight:**

Maintenance will fashion a temporary restraint using locally available materials to secure cargo before each flight. If a temporary restraint has already been fashioned, the temporary restraint must be inspected for security.

(O) OPERATIONS.Observe weight and balance limitations. Carriage of ballast is **prohibited**.**(D) DISPATCH.**

Not required.

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MEL	Fwd Cargo Compartment Dividing Net (Including associated equipment) – Middle Nets	Repair Category	Quantity Installed	Minimum Required
25-51-04-2a	(attached to door restraint nets)	D	2	0
REMARKS AND EXCEPTIONS.				
PLACARD. Place a placard/sticker inside the Fwd Cargo Door.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Fwd Cargo Compartment Dividing Nets (Including associated equipment) - Divider Net	Repair Category	Quantity Installed	Minimum Required
25-51-04-2b	(located between fwd cargo compartment doors)	C	1	0
REMARKS AND EXCEPTIONS. May be damaged or missing provided fwd cargo compartment is empty.				
PLACARD. Place a placard/sticker inside the Fwd Cargo Door.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Cargo Compartment Liners and Floor Panels	Repair Category	Quantity Installed	Minimum Required
25-52-01		C	31	0

REMARKS AND EXCEPTIONS.

(M) May be damaged (punctured, torn or deformed) provided:

- a. Affected area is visually inspected for damage, and
- b. Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used.)

PLACARD.

Place a CARGO COMPARTMENT INOPERATIVE, DO NOT USE placard on the cargo compartment door.

(M) MAINTENANCE.

For the damaged cargo compartment liners and/or floor panels, do as follows:

1. Get access to the damaged liners/panels.
2. If necessary, remove or open access panels.
3. Examine the area for cleanliness.
4. If a protective coating (painting, alodine, etc) is at the surface of the component, examine the protective coating condition for signs of damage.
5. Examine the condition of all related fasteners for signs of corrosion or failure.
6. Examine the condition of all the electrical wires, connectors, and harness runs in the affected zone for safety of installation.
7. Examine the condition of the hydraulic, oil, and fuel lines, pneumatic lines and ducts in the affected zone for signs of leakage, and safety of installation.
8. Make sure there is no water or contaminants into the zone.
9. Make sure that there are no unwanted objects in the work area.
10. If necessary, install or close the access panels.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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REVISION 11

08 JAN 21

MEL	Emergency Medical Equipment – Automatic External Defibrillator (AED) and/or Associated Equipment	Repair Category	Quantity Installed	Minimum Required
25-61-02-1		A	1	0

REMARKS AND EXCEPTIONS.

(O) May be incomplete, missing or inoperative provided:

- a. AED is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and
- b. Repairs or replacements are made within one flight.

PLACARD.

Place an "INOPERATIVE DO NOT USE" placard/sticker on the affected unit.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Place an "INOPERATIVE DO NOT USE" placard/sticker on the affected unit, then place the unit in the LH FWD closet.

(D) DISPATCH.

Not required.

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MEL	Emergency Medical Equipment – Enhanced Emergency Medical Kit (EEMK) and/or Associated Equipment	Repair Category	Quantity Installed	Minimum Required
25-61-02-2		A	1	0

REMARKS AND EXCEPTIONS.

(O) May be incomplete, missing or inoperative provided:

- a. EEMK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and
- b. Repairs or replacements are made within one flight.

PLACARD.

Place an "INOPERATIVE DO NOT USE" placard/sticker on the affected unit.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Place an "INOPERATIVE DO NOT USE" placard/sticker on the affected unit, then place the unit in the LH FWD closet.

(D) DISPATCH.

Not required.

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MEL	Emergency Medical Equipment – First Aid Kit (FAK) and/or Associated Equipment	Repair Category	Quantity Installed	Minimum Required	
		A	2	1	
REMARKS AND EXCEPTIONS.					
(O) Only one of the required First Aid Kits may be incomplete, missing or inoperative provided:					
<ul style="list-style-type: none"> a. FAK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b. Repairs or replacements are made within one flight. 					
PLACARD.					
Place an "INOPERATIVE DO NOT USE" placard/sticker on the affected unit.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
Place an "INOPERATIVE DO NOT USE" placard/sticker on the affected unit, then place the unit in the LH FWD closet.					
(D) DISPATCH.					
Not required.					
MMELO 20	END	25 OCT 19			

MEL	Flashlights	Repair Category	Quantity Installed	Minimum Required	
		C	5	0	
REMARKS AND EXCEPTIONS.					
(O) May be inoperative or missing provided a flashlight of equivalent characteristics is readily available.					
PLACARD.					
Place a placard/sticker on the unit.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
For an inoperative or missing flashlight, do as follows:					
<ol style="list-style-type: none"> 1. The flight crew shall verify that any flashlight to be used in lieu of an inoperative or missing flashlight is of equivalent characteristics; that it is in good condition, has fresh batteries, and is functioning properly. The flashlight is not to be stowed in a passenger seat-back pocket. 					
(D) DISPATCH.					
Not required.					
MMELO 20	END	25 OCT 19			

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REVISION 10

30 OCT 20

MEL	Flashlight Holders	Repair Category	Quantity Installed	Minimum Required
25-61-04-2		C	4	0

REMARKS AND EXCEPTIONS.

(M/FC)(O) May be inoperative or missing provided alternate stowage means are provided.

PLACARD.

Place a placard/sticker on the unit.

(M/FC) MAINTENANCE.

For an inoperative or missing flashlight holder, do as follows:

1. Verify that any flashlight to be used is of equivalent characteristics, that is in good condition, has fresh batteries, and is functioning properly. If the flashlight is not equipped with an ON/OFF switch, do as follows:
 - a. Keep the flashlight in the flashlight holder.
 - b. If the flashlight holder is missing, do as follows:
 1. Replace the flashlight with a flashlight that has equivalent characteristics, that is in good condition, has fresh batteries, and is functioning properly.
 2. If the Forward Flight Attendant station flashlight holder is inoperative, the replacement flashlight will be stowed in the top storage compartment adjacent to the PSB-600 (Automated Passenger Briefe).
2. For rechargeable flashlights, the crew must verify the flashlight operates normally.
3. If the Forward Flight Attendant station flashlight holder is inoperative, the replacement flashlight will be stowed in the top storage compartment adjacent to the PSB-600 (Automated Passenger Briefe).

• Note •

Do not stow the flashlight in a passenger back-seat pocket.**(O) OPERATIONS.**

For an inoperative or missing flashlight, do as follows:

1. The flight crew shall verify that any flashlight to be used in lieu of an inoperative or missing flashlight is of equivalent characteristics, that is in good condition, has fresh batteries, and is functioning properly. This flashlight is not to be stowed in a passenger seat back pocket.
2. For rechargeable flashlights, the crew must verify the flashlight operates normally and that the batteries have been freshly charged before the first flight of the day.
 - a. For an inoperative or missing flashlight holder, do as follows:
 1. The flight crew shall verify the flashlight has been stowed in an appropriate location.
 2. For a passenger cabin flashlight, the flight attendant is informed as to the stowed location of that flashlight. The flashlight is not to be stowed in a passenger back seat pocket.

• Note •

The flight crew shall verify the flashlight has been stowed in the correct compartment and that the Flight Attendants are informed as to the stowed location of that flashlight. The flashlight is not to be stowed in a passenger seat-back pocket.

(D) DISPATCH.

Not required.

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30 OCT 20

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MEL	Emergency Locator Transmitter (ELT)	Repair Category	Quantity Installed	Minimum Required
25-62-01		A	1	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. System is deactivated, and
- b. Repairs are made within 90 days.

• Note •

If aircraft is used for international or charter flights, ELT must be operative.**PLACARD.**

Place a placard/sticker on the ELT Control panel.

(M) MAINTENANCE.

For an inoperative Emergency Locator Transmitter (ELT), do as follows:

1. Remove the ELT (refer to AMM TASK 25-62-02-000-801).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

May be missing provided repairs are made within 90 days.

• Note •

If aircraft is used for international or charter flights, ELT must be operative.**PLACARD.**

Place a placard/sticker on the ELT Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

Continued

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REVISION 10

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MEL	Emergency Locator Transmitter (ELT) (Continued)	Repair Category	Quantity Installed	Minimum Required
25-62-01		A	1	0

- OR OPTION 3 -**REMARKS AND EXCEPTIONS.**

Portable ELT may be inoperative or missing.

• Note •

If aircraft is used for international or charter flights,
at least one ELT must be operative.

PLACARD.

Place a placard/sticker on the ELT Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20

END

25 OCT 19

MEL	Flotation Equipment (Crew and Passenger) – Crew Life Preservers	Repair Category	Quantity Installed	Minimum Required
25-64-01		C	5	4

REMARKS AND EXCEPTIONS.

One may be inoperative provided observer seat is not occupied.

PLACARD.

Place a placard/sticker on the inoperative flotation equipment and/or remove it from the aircraft.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Nonessential Equipment and Furnishings (NEF)	Repair Category	Quantity Installed	Minimum Required
25-70-01		-	-	0
REMARKS AND EXCEPTIONS.				
May be inoperative, damaged, or missing provided that the item(s) is deferred in accordance with operator's NEF deferral program. The NEF program, procedures, and processes are outlined in the operator's NEF manual. (M) and (O) procedures, if required, must be available to the Flight Crew and included in the operator's appropriate document.				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">Exterior lavatory door ash trays are not considered NEF items.</p>				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">This proviso is to reference items that are covered under the operator's NEF program. This is for NEF awareness ONLY and not to be processed as an MEL. Please refer to the NEF manual for items covered and deferral procedures that need to be complied with.</p>				
PLACARD. Refer to applicable NEF.				
(M) MAINTENANCE. Refer to applicable NEF.				
(O) OPERATIONS. Refer to applicable NEF.				
(D) DISPATCH. Refer to applicable NEF.				
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MEL	FIDEEX System	Repair Category	Quantity Installed	Minimum Required
26-00-01		C	1	1

REMARKS AND EXCEPTIONS.

System redundancy may be degraded as indicated by "FIRE SYS FAULT" status message.

PLACARD.

Place a placard/sticker below the EICAS secondary display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	FIDEEX - Control Unit ARINC Communication	Repair Category	Quantity Installed	Minimum Required
26-00-02		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided Fire Detection/Firex Monitor pilot-initiated test is performed before each flight.

PLACARD.

Place a placard/sticker on the Fire Detection/Firex Monitor panel (overhead).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Perform Fire Detection/Firex Monitor test prior to each flight.

(D) DISPATCH.

Not required.

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MEL	APU Fire Detection Loops	Repair Category	Quantity Installed	Minimum Required
26-12-01-2		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both loops A and B may be inoperative provided APU is considered inoperative.

• Note •

APU must be deferred under MEL 49-10-01-2.

PLACARD.

Place a placard/sticker on the Fire Detection/Firex Monitor panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required

(D) DISPATCH.

• Note •

Dispatch will notify down line stations that an Air Cart and an AC Power Cart will be needed.

- OR OPTION 2 -

REMARKS AND EXCEPTIONS.

(M) (D) Both loops A and B may be inoperative provided:

- APU is used on ground (for engine start only),
- APU access doors are opened,
- APU is visually monitored,
- APU is pneumatically loaded only, and
- Total APU operating time shall not exceed 5 minutes.
- If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the Fire Detection/Firex Monitor panel.

(M) MAINTENANCE.

For APU fire detection loop(s) inoperative, and to use the APU on the ground for engine start, do as follows:

- Make sure the circuit breakers that follow are closed:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	N10	APU FUEL PUMP	221
CBP-1	N11	APU ECU PRIM	221
CBP-1 LOWER	R9	FUEL SOV APU	221
CBP-5	A6	APU ECU SEC	311
CBP-5	B1	APU DOOR ACT	311

Continued

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MEL	APU Fire Detection Loops (Continued)	Repair Category	Quantity Installed	Minimum Required
26-12-01-2		C	2	0

WARNING

The APU Fire Extinguishing System is not effective with APU access doors opened.

2. Open the APU access door 361AB and 362AB.
3. Start the APU (refer to AMM TASK 49-10-00-866-801) and let it operate for a maximum of 5 minutes.
4. While the APU is operating on the ground, qualified personnel must visually monitor the APU for condition (no smoke or fire condition).
5. Qualified personnel must be readily available to communicate with the flight crew using a suitable headset in the event of a required shutdown.
6. Qualified personnel must be readily available with portable fire extinguishers.
7. Start the engine with the APU (refer to AMM TASK 71-00-00-866-806).
8. Shut down the APU (refer to AMM TASK 49-10-00-866-802).
9. Close the APU access door 361AB and 362AB.

(O) OPERATIONS.

Not required.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.**• Note •**

Dispatch will notify down line stations that an Air Cart and an AC Power Cart will be needed.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

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MEL	Main Landing Gear Bay Overheat Detection System	Repair Category	Quantity Installed	Minimum Required
26-14-01		B	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. MLG BAY OVHT warning message is not displayed.
- b. EICAS Brake Temperature Monitoring Readouts are operative.
- c. Landing gear is left extended for a minimum of ten minutes after takeoff,
- d. Takeoff performance is in accordance with the Takeoff / Landing Report (Flight with Landing Gear Down), and
- e. Takeoff is not conducted in icing conditions.

PLACARD.

Place a placard/sticker on the Landing Gear Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For a Main Landing Gear Bay Overheat Detection System inoperative, do as follows:

After Takeoff

1. Check the EICAS Brake Temp readouts to ensure that the temperature indications are the same or less than at brake release.

10 Minutes After takeoff

1. Before retracting the gear, check the EICAS Brake Temp readouts to ensure that the temperature indications are less than at brake release.

• Note •

Because the landing gear must remain extended for the first 10 minutes of the flight, tap the brakes briefly after takeoff to stop tire rotation. Failure to do this could result in a GLD UNSAFE caution message being displayed.

• Note •

Observe Landing Gear Airspeed Limitations in POH Chapter 3: Limitations.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

Ensure the Takeoff and Landing Report reflects performance data for Flight with Landing Gear Down.

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MEL	Main Landing Gear Bay Overheat Detection System (Continued)	Repair Category	Quantity Installed	Minimum Required
26-14-01		B	1	0

(D) DISPATCH.

- Take-off may not be conducted in icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

- GEAR EXTENDED must be selected in Dispatch Monitor for take-off under the pull down box for misc components operative.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M/FC) (O) (D) May be inoperative provided:

- System is deactivated,
- EICAS Brake Temperature Monitoring Readouts are operative,
- Landing gear is left extended for a minimum of ten minutes after take-off,
- Takeoff performance is in accordance with aerodata calculations (Flight with Landing Gear Down), and
- Takeoff is not conducted in icing conditions.

PLACARD.

Place a placard/sticker on the LDG GEAR Control Panel.

(M/FC) MAINTENANCE.

For an inoperative Main Landing Gear Bay Overheat Detection System, with the MLG BAY OVHT warning message that shows on the EICAS primary page, do as follows:

- Open and collar the circuit breaker that follows:

CB PANEL: **CBP-2**

CB NO: **N9**

NAME: **MLG BAY OVHT DET**

ZONE: **222**

(O) OPERATIONS.

For a Main Landing Gear Bay Overheat Detection System inoperative, do as follows:

After Takeoff

- Check the EICAS Brake Temp readouts to ensure that the temperature indications are the same or less than at brake release.

Continued

MEL	Main Landing Gear Bay Overheat Detection System (Continued)	Repair Category	Quantity Installed	Minimum Required
26-14-01		B	1	0

10 minutes after Takeoff

1. Before retracting the gear, check the EICAS Brake Temp readouts to ensure that the temperature indications are less than at brake release.

• Note •

Because the landing gear must remain extended for the first 10 minutes of the flight, tap the brakes briefly after takeoff to stop tire rotation. Failure to do this could result in a GLD UNSAFE caution message being displayed.

• Note •

Observe Landing Gear Airspeed Limitations in POH Chapter 3: Limitations

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

Ensure the Takeoff and Landing Report reflects performance data for Flight with Landing Gear Down.

(D) DISPATCH.

1. Take-off may not be conducted in icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. GEAR EXTENDED under the pull down box for misc components operative must be selected in Dispatch Monitor for take-off and landing.

- OR OPTION 3 -

Repair Category	Quantity Installed	Minimum Required
A	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative provided:

- Operations are conducted in accordance with Landing Gear Down performance data,
- Ground lock pins are installed to ensure that all three landing gears are locked down throughout flight,
- Operations are not conducted in known or forecast icing conditions,
- Inflight performance information given in Flight Planning and Cruise Control Manual is used,

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MEL	Main Landing Gear Bay Overheat Detection System (Continued)	Repair Category	Quantity Installed	Minimum Required
26-14-01		A	1	0

- e. Both headsets are worn for the entire flight, and
- f. Repairs are made within one flight day.
- g. Aircraft is not used for revenue operations.

PLACARD.

Place a placard/sticker on the LDG GEAR Control Panel.

(M) MAINTENANCE.

- A. For an inoperative Main Landing Gear Bay Overheat Detection System, with the MLG BAY OVHT warning message that shows on the EICAS primary page, do as follows:

1. Open and collar the circuit breaker that follows:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-2	N9	MLG BAYOVHT DET	222

- B. For an inoperative Main Landing Gear Bay Overheat Detection System and an inoperative EICAS Brake Temperature Monitoring Readouts, do as follows:

1. Make sure that the ground lock pins are installed in the landing gears (refer to TASK 10-11-00-400-801 and 10-11-00-400-802).
2. Make sure that the lock pins are secured for the flight and that the REMOVE BEFORE FLIGHT warning flags are removed or secured.

• Note •

If a MLG BAY OVHT warning message is also showing on the EICAS, deactivate Main Landing Gear Bay Overheat Detection System per step 2.A.

(O) OPERATIONS.

1. When Takeoff performance data from ACARS is unavailable use a 2 knot additive for (V1, VR and V2) for Flaps 8 (Corrections for Flaps 20 are not required).

• Note •

Observe Landing Gear Airspeed Limitations in POH Chapter 3: Limitations

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

Ensure the Takeoff and Landing Report reflects performance data for Flight with Landing Gear Down.

MEL	Main Landing Gear Bay Overheat Detection System (Continued)	Repair Category	Quantity Installed	Minimum Required
26-14-01		A	1	0

(D) DISPATCH.

1. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.
2. GEAR EXTENDED under the pull down box for misc components operative must be selected in Dispatch Monitor for take-off and landing.

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MEL	Cargo Compartment Smoke Detectors - FWD Cargo	Repair Category	Quantity Installed	Minimum Required
26-15-01-2		C	3	0

REMARKS AND EXCEPTIONS.

(M) (O) All may be inoperative provided the FWD cargo compartment remains empty, or is verified to contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs) and/or Fly Away Kits. For ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable.

• Note •

Relief for single or dual FWD Cargo Compartment Smoke Detector failure is covered by MEL item 26-00-01 with the FIRE SYS FAULT status message shown.

PLACARD.

Place a placard/sticker on the Cargo Firex panel.

(M) MAINTENANCE.

For forward cargo smoke detector(s) inoperative, do as follows:

1. Do the procedure to deactivate the forward cargo smoke detector system (refer to AMM TASK 26-17-00-040-801).

• Note •

When the deactivation procedure is completed, the FWD CARGO DET caution message will come into view continuously on the EICAS primary page.

(O) OPERATIONS.

• Note •

Relief for single FWD Cargo Compartment Smoke Detector failure is covered by MEL 26-00-01.

(D) DISPATCH.

Not required.

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MEL	Cargo Compartment Smoke Detectors - AFT Cargo	Repair Category	Quantity Installed	Minimum Required
26-15-01-3		C	2	0

REMARKS AND EXCEPTIONS.

(M) (O) All may be inoperative provided the AFT cargo compartment remains empty, or is verified to contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs) and/or Fly Away Kits). For ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable.

• Note •

Relief for single AFT Cargo Compartment Smoke Detector failure is covered by MEL 26-00-01.

PLACARD.

Place a placard/sticker on the Cargo Firex panel.

(M) MAINTENANCE.

For AFT cargo smoke detector(s) inoperative, do as follows:

1. Do the procedure to deactivate the AFT cargo smoke detector system (refer to AMM TASK 26-15-00-040-801).

• Note •

When the deactivation procedure is completed, the AFT CARGO DET caution message will come into view continuously on the EICAS primary page.

(O) OPERATIONS.

• Note •

Relief for single AFT Cargo Compartment Smoke Detector failure is covered by MEL 26-00-01.

(D) DISPATCH.

Not required.

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MEL	Lavatory Smoke Detection System	Repair Category	Quantity Installed	Minimum Required
26-16-01		C	2	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) For each lavatory, the lavatory smoke detection system may be inoperative provided:

- a. Lavatory waste receptacle is empty,
- b. Associated lavatory door is locked CLOSED and placarded, "INOPERATIVE - DO NOT OCCUPY", and
- c. Lavatory is used only by crewmembers.

• Note •

These provisos are not intended to prohibit lavatory inspections by crewmembers.**PLACARD.**

Put an INOPERATIVE - DO NOT OCCUPY placard on the lavatory door.

(M/FC) MAINTENANCE.

For an inoperative lavatory smoke detection system, do as follows:

1. Make sure that the lavatory waste bin is empty.
2. Close and lock the lavatory door.
3. Install an INOPERATIVE - DO NOT OCCUPY placard on the lavatory door.

(O) OPERATIONS.

For an inoperative lavatory smoke detection system, do as follows:

During the Pre-Flight Cabin Check

1. Make sure the lavatory waste bin is empty and that the lavatory is not used for any stowage, then close and lock the lavatory door.

During Flight

During flight at regular interval

1. Inspect the lavatory,
2. Make sure that the lavatory is not used for any disposable waste storage, and
3. Close and lock the lavatory door.

• Note •

Make sure that the lavatory is not used for any purpose by passengers.**(D) DISPATCH.**

For BOTH lavatory smoke detectors INOP, flight is restricted to a maximum of 90 minutes.

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MEL	APU Fire Extinguishing System	Repair Category	Quantity Installed	Minimum Required
26-22-01-2		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided APU is considered inoperative.

• Note •

APU must be deferred under MEL 49-10-01-2.

• Note •

If the APU Fire Extinguishing system is being placed on MEL due to a Low bottle message, the APU area MUST be inspected for evidence of Fire/Heat Damage prior to issuing the MEL.

PLACARD.

Place a placard/sticker next to the APU FIRE PUSH switchlight on the glareshield.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

• Note •

Dispatch will notify down line stations that an Air Cart and an AC Power Cart will be needed.

- OR OPTION 2 -

REMARKS AND EXCEPTIONS.

(M) (D) May be inoperative provided:

- a. APU is used on ground (for engine start only),
- b. APU access doors are opened,
- c. APU is visually monitored,
- d. APU Fire Detection System is operative,
- e. APU is pneumatically loaded only, and
- f. Total APU operating time shall not exceed 5 minutes.
- g. If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

• Note •

If the APU Fire Extinguishing system is being placed on MEL due to a Low bottle message, the APU area MUST be inspected for evidence of Fire/Heat Damage prior to issuing the MEL.

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MEL	APU Fire Extinguishing System (Continued)	Repair Category	Quantity Installed	Minimum Required
26-22-01-2		C	1	0

PLACARD.

Place a placard/sticker next to the APU fire switchlight on the glareshield.

(M) MAINTENANCE.

For an APU Fire Extinguishing System inoperative, and to use the APU for engine start, do as follows:

1. Do an Operational Check of the APU Fire Detection System (refer to AMM TASK 26-12-00-710-801).
2. Make sure the circuit breakers that follow are closed:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	N10	APU FUEL PUMP	221
CBP-1	N11	APU ECU PRIM	221
CBP-1 LOWER	R9	FUEL SOV APU	221
CBP-5	A6	APU ECU SEC	311
CBP-5	B1	APU DOOR ACT	311

3. Open the APU access door 361AB and 362AB (refer to AMM TASK 52-45-49-010-801).
4. Start the APU (refer to AMM TASK 49-10-00-866-801) and let it run for a maximum of 5 minutes.
5. While the APU is operating on the ground, qualified personnel must visually monitor the APU for condition (no smoke or fire condition).
6. Make sure that the APU does not operate for more than 5 minutes.
7. Qualified personnel must be readily available to communicate with the flight crew using a suitable headset in the event of a required shutdown (refer to AMM TASK 49-10-00-866-802).
8. Qualified personnel must be readily available with portable fire extinguishers.
9. Start the engine with the APU (refer to AMM TASK 71-00-00-866-806).
10. Shut down the APU (refer to AMM TASK 49-10-00-866-802).
11. Close the APU access door 361AB and 362AB (refer to AMM TASK 52-45-49-410-801).

Continued

MEL	APU Fire Extinguishing System (Continued)	Repair Category	Quantity Installed	Minimum Required
26-22-01-2		C	1	0

(O) OPERATIONS.

Not required.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.

Not required.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

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MEL	Cargo Compartment Fire Extinguishing System	Repair Category	Quantity Installed	Minimum Required
26-25-01-2		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided the FWD and AFT Cargo compartments are empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used).

PLACARD.

Place a placard/sticker on the Cargo Firex panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Cargo Compartment Fire Extinguisher Squibs - FWD	Repair Category	Quantity Installed	Minimum Required
26-25-02-2a		C	2	0

REMARKS AND EXCEPTIONS.

All may be inoperative provided the FWD Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used).

PLACARD.

Place a placard/sticker on the Cargo Firex panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Cargo Compartment Fire Extinguisher Squibs - AFT	Repair Category	Quantity Installed	Minimum Required
26-25-02-2b		C	2	0

REMARKS AND EXCEPTIONS.

All may be inoperative provided the AFT Cargo compartment is empty (for ballast purposes, use of bags made of fiberglass or kevlar, of sand or ingots of non-magnetic metals such as lead or rubber bars, is acceptable. Fly Away Kits are not used).

PLACARD.

Place a placard/sticker on the Cargo Firex panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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END

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MEL	Lavatory Fire Extinguishing System	Repair Category	Quantity Installed	Minimum Required
26-26-01		C	2	0

REMARKS AND EXCEPTIONS.

For each lavatory, the Lavatory Fire Extinguishing System may be inoperative provided the Lavatory smoke detection system operates normally.

PLACARD.

For an inoperative Lavatory Fire Extinguishing System and an operative Lavatory Smoke Detection System, do as follows:

1. Put a LAVATORY FIRE EXTINGUISHING SYSTEM INOPERATIVE placard adjacent to the EICAS primary page.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M/FC) (O) (D) for each lavatory, the Lavatory Fire Extinguishing System may be inoperative provided:

- a. Lavatory waste receptacle is empty,
- b. Associated lavatory door is locked closed and placarded, "INOPERATIVE - DO NOT OCCUPY," and
- c. Lavatory is used by crewmembers only.

• Note •

These provisos are not intended to prohibit lavatory inspections by crewmembers.

PLACARD.

For an inoperative Lavatory Fire Extinguishing System do as follows:

1. Put an INOPERATIVE-DO NOT OCCUPY placard on the lavatory door.

(M/FC) MAINTENANCE.

For an inoperative Lavatory Fire Extinguishing System do as follows:

1. In the lavatory, open the waste bin access door and make sure that the lavatory waste bin is empty.
2. Close the waste bin access door.
3. Close and lock the lavatory door.
4. Install the INOPERATIVE - DO NOT OCCUPY placard on the lavatory door.

Continued

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MEL	Lavatory Fire Extinguishing System (Continued)	Repair Category	Quantity Installed	Minimum Required
26-26-01		C	2	0

(O) OPERATIONS.

For an inoperative lavatory Fire Extinguishing System do as follows:

During the Pre-Flight Cabin Check

1. Make sure that the lavatory waste bin is empty and that the lavatory is not used for any stowage, then close and lock the lavatory door.

During Flight

During flight at regular interval

1. Inspect the lavatory,
2. Make sure that the lavatory is not used for any disposable waste storage, and
3. Close and lock the lavatory door.

• Note •

Make sure that the lavatory is not used for any purpose by passengers.

(D) DISPATCH.

For BOTH lavatory smoke detectors INOP, flight is restricted to a maximum of 90 minutes.

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MEL	Aileron Trim System	Repair Category	Quantity Installed	Minimum Required
27-12-01-2		B	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided:				
<ul style="list-style-type: none"> a. Autopilot is operative, b. X-Flow Pump is operative, and c. Aileron Trim System is centered. 				
PLACARD.				
Place a placard/sticker on the AILERON / RUDDER TRIM control panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Aileron Flutter Dampers	Repair Category	Quantity Installed	Minimum Required
27-15-02		A	2	0
REMARKS AND EXCEPTIONS.				
(O) One per surface may indicate low reservoir fluid provided:				
<ul style="list-style-type: none"> a. Each individual PCU is verified operative prior to further flight, and b. Repairs are made within one flight day. 				
PLACARD.				
Place a placard/sticker below the EICAS secondary display.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
For an inoperative aileron flutter damper, do as follows:				
<ol style="list-style-type: none"> 1. Make sure that the aircraft is energized with AC electrical power. 2. Pressurize hydraulic system 1 and 2 (or 3). 				
Continued				

MEL	Aileron Flutter Dampers (Continued)	Repair Category	Quantity Installed	Minimum Required
27-15-02		A	2	0
• Note •				
<p>Do this check two times, once with the hydraulic systems 1 and 2 pressurized and again with only hydraulic system 3 pressurized. This will make sure that the PCU's for each aileron are checked individually.</p>				
3.	On the EICAS control panel (ECP), push the F/CTL pushbutton to get access to the FLIGHT CONTROLS synoptic page on the EICAS secondary page.			
4.	Monitor the movement of the control wheel and aileron surface as follows:			
a.	Move the pilot and copilot control wheels full left and full right and make sure that the aileron movement is smooth and continuous.			
b.	On the EICAS secondary page, make sure that the aileron indication moves to LWD and RWD.			
c.	Release the control wheel and make sure that the control wheel and aileron indication return back to neutral.			
d.	If the EICAS aileron control surface position indication is inoperative, do as follows:			
1.	Use personnel as required to do the visual check of the aileron surfaces.			
2.	Use an external headset or a suitable communication procedure to communicate to the flight deck.			
3.	Establish an alternate visual procedure to make sure that the aileron surface has full free movement up and down.			
4.	When the control wheel is released, make sure that the control wheel and the aileron surfaces return to neutral.			
5.	Depressurize hydraulic system 1 and 2.			
6.	Pressurize hydraulic system 3.			
7.	Do this check again with only system 3 pressurized.			
8.	Configure the aircraft for flight as required.			
(D) DISPATCH.				
Not required.				
MMEL 20	END		25 OCT 19	

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MEL	Rudder Pedal Adjustment Systems	Repair Category	Quantity Installed	Minimum Required
27-24-02		B	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative provided:

- a. Pedals are in position acceptable to affected crewmember,
- b. EICAS Rudder Control Surface Position Indication is operative, and
- c. Rudder and brake pedals are checked for full and unrestricted movement at both pilot stations.

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative rudder pedal adjustment system, do as follows at both pilot stations:

1. On the EICAS Control Panel (ECP), push the F/CTL pushbutton to get access to the FLIGHT CONTROLS synoptic page on the EICAS secondary page.
2. Make sure that the pilot and co-pilot rudder pedals move fully and are not restricted in their movement as follows:
 - a. Look at the FLIGHT CONTROL synoptic page.
 - b. Push on the left rudder pedal to its maximum deflection.
 - c. On FLIGHT CONTROL synoptic page, make sure that the Rudder Position Indicator shows that the rudder deflects to the left with freedom and at full range.
 - d. Push on the right rudder pedal to its maximum deflection.
 - e. On FLIGHT CONTROL synoptic page, make sure that the Rudder Position Indicator shows that the rudder deflects to the right with freedom and at full range.
3. On the ECP, push the STAT pushbutton to go back to the EICAS secondary page.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M)(O) One may be inoperative provided:

- a. Pedals are adjusted to position acceptable to affected crewmember,
- b. EICAS Rudder Control Surface Position Indication is operative, and
- c. Rudder and brake pedals are checked for full and unrestricted movement at both pilot stations.

Continued

MEL	Rudder Pedal Adjustment Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
27-24-02		B	2	1

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

If required, adjust the rudder pedals of the affected crewmember as follows:

1. Do the alternate method for the adjustment of the position of the rudder pedals (refer to AMM TASK 27-21-01-820-804).

(O) OPERATIONS.

For an inoperative rudder pedal adjustment system, do as follows at both pilot stations:

1. On the EICAS Control Panel (ECP), push the F/CTL pushbutton to get access to the FLIGHT CONTROLS synoptic page on the EICAS secondary page.
2. Make sure that the pilot and co-pilot rudder pedals move fully and are not restricted in their movement as follows:
 - a. Look at the FLIGHT CONTROL synoptic page.
 - b. Push on the left rudder pedal to its maximum deflection.
 - c. On FLIGHT CONTROL synoptic page, make sure that the Rudder Position Indicator shows that the rudder deflects to the left with freedom and at full range.
 - d. Push on the right rudder pedal to its maximum deflection.
 - e. On FLIGHT CONTROL synoptic page, make sure that the Rudder Position Indicator shows that the rudder deflects to the right with freedom and at full range.
3. On the ECP, push the STAT pushbutton to go back to the EICAS secondary page.

(D) DISPATCH.

Not required.

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MEL	Stall Warning Switchlights (light function only)	Repair Category	Quantity Installed	Minimum Required
27-35-01		C	2	1

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided shaker and pusher are checked operative before each flight.

PLACARD.

Place a placard/sticker above the pilot (or copilot) STALL switchlight.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Before each flight:**

For an inoperative stall warning switch/light (light function only), do as follows:

1. Do the operational test of the stall protection system (refer to the POH Chapter 4: Normal Procedures).
2. Make sure that the stick shaker and the stick pusher are operative.

• Note •

Only one STALL light will flash when the test is activated.**(D) DISPATCH.**

Not required.

MMEL 20	END	25 OCT 19
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MEL	Slat/Flap System - Flap Subsystem	Repair Category	Quantity Installed	Minimum Required
27-51-02-2a		C	1	1

REMARKS AND EXCEPTIONS.

(O) (D) System redundancy may be degraded as indicated by "FLAPS HALFSPEED" status message provided:

- a. "SLATS HALFSPEED" and/or "FLAP FAULT" status messages are not displayed, and
- b. Operations are conducted in accordance with Flaps at Half Speed performance data.

• Note •

Flaps will operate at half speed.

• Note •

SPLR/STAB FAULT status message may be displayed on the EICAS.

• Note •

When the aircraft is dispatched with one failed FLAP or SLAT channel, where the system is already in HALFSPEED mode, the FLAP and/or SLAT position value and indicator bar on the EICAS display can go from green to white when a "surface miscompare/mismatch" condition is found. This indicates a minor electrical out-of-rig condition of a FLAP or SLAT BPSU. There is no associated EICAS status or caution message with a white position indication and it does not prevent aircraft dispatch.

PLACARD.

Place a placard/sticker on the FLAP/SLATS Control Lever.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

Ensure TLR reflects performance data for Flaps at half speed.

• Note •

The landing gear indication (GEAR), the slats and flaps indication (SLATS/FLAPS), and the brake temperature icon (BRAKE TEMP) will show on the EICAS primary and secondary pages for the entire flight.

• Note •

When the aircraft is dispatched with one failed FLAP or SLAT channel, where the system is already in HALFSPEED mode, the FLAP and/or SLAT position value and indicator bar on the EICAS display can go from green to white when a "surface miscompare/mismatch" condition is found. This indicates a minor electrical out-of-rig condition of a FLAP or SLAT BPSU. There is no associated EICAS status or caution message with a white position indication and it does not prevent aircraft dispatch.

Continued

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MEL	Slat/Flap System - Flap Subsystem (Continued)	Repair Category	Quantity Installed	Minimum Required
27-51-02-2a		C	1	1

• Note •

In some cases the AP PITCH TRIM (C) and/or an associated AP TRIM IS ND (C) or AP TRIM IS NU (C) message may appear when flaps are operating at half speed (as indicated by FLAPS HALFSPEED (S) message). Disconnecting the autopilot, manually trimming as required and re-engaging the autopilot will resolve the conditions resulting in the FCC monitor tripping. If no Pitch Trim related status messages are present (i.e. STAB FAULT, STAB CH 1(2) INOP), there is no reason to suspect abnormal Stab Trim operation and the autopilot should be considered as functioning properly.

(D) DISPATCH.

Dispatcher will select "Flaps Halfspeed" for take-off and landing performance data in Dispatch Monitor.

MMEL 20	END	25 OCT 19
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MEL	Slat/Flap System - Slat Subsystem	Repair Category	Quantity Installed	Minimum Required
27-51-02-2b		C	1	1

REMARKS AND EXCEPTIONS.

(O) (D) System redundancy may be degraded as indicated by "SLATS HALFSPEED" status message provided:

- a. "FLAPS HALFSPEED" and/or "FLAP FAULT" status messages are not displayed, and
- b. Operations are conducted in accordance with Slats at Half Speed performance data.

• Note •

Slats will operate at half speed.

• Note •

SPLR/STAB FAULT status message may be displayed on the EICAS.

• Note •

The landing gear indication (GEAR), the slats and flaps indication (SLATS/FLAPS), and the brake temperature icon (BRAKE TEMP) will show on the EICAS primary and secondary pages for the entire flight.

• Note •

When the aircraft is dispatched with one failed FLAP or SLAT channel, where the system is already in HALFSPEED mode, the FLAP and/or SLAT position value and indicator bar on the EICAS display can go from green to white when a "surface miscompare/mismatch" condition is found. This indicates a minor electrical out-of-rig condition of a FLAP or SLAT BPSU. There is no associated EICAS status or caution message with a white position indication and it does not prevent aircraft dispatch.

PLACARD.

Place a placard/sticker on the FLAP/SLATS control lever.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

Ensure TLR reflects performance data for Slats at half speed.

• Note •

The landing gear indication (GEAR), the slats and flaps indication (SLATS/FLAPS), and the brake temperature icon (BRAKE TEMP) will show on the EICAS primary and secondary pages for the entire flight.

Continued

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MEL	Slat/Flap System - Slat Subsystem (Continued)	Repair Category	Quantity Installed	Minimum Required
27-51-02-2b		C	1	1

• Note •

When the aircraft is dispatched with one failed FLAP or SLAT channel, where the system is already in HALFSPEED mode, the FLAP and/or SLAT position value and indicator bar on the EICAS display can go from green to white when a “surface miscompare/mismatch” condition is found. This indicates a minor electrical out-of-rig condition of a FLAP or SLAT BPSU. There is no associated EICAS status or caution message with a white position indication and it does not prevent aircraft dispatch.

• Note •

In some cases the AP PITCH TRIM (C) and/or an associated AP TRIM IS ND (C) or AP TRIM IS NU (C) message may appear when flaps are operating at half speed (as indicated by FLAPS HALFSPEED (S) message). Disconnecting the autopilot, manually trimming as required and re-engaging the autopilot will resolve the conditions resulting in the FCC monitor tripping. If no Pitch Trim related status messages are present (i.e. STAB FAULT, STAB CH 1(2) INOP), there is no reason to suspect abnormal Stab Trim operation and the autopilot should be considered as functioning properly.

(D) DISPATCH.

Dispatcher will select “Slats Halfspeed” for take-off and landing performance data in Dispatch Monitor.

MMEL 20	END	25 OCT 19
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MEL	Slat Disconnect Detection System	Repair Category	Quantity Installed	Minimum Required
27-51-04		A	1	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative as indicated by "SLAT FAULT" status message provided:

- a. Slats are inspected once each flight day to ensure no mechanical disconnect is present,
- b. Slats are inspected before next flight to ensure no mechanical disconnect is present if 0g or less is encountered as a result of pilot maneuvering in last flight, and
- c. Repairs are made within three flight days.

PLACARD.

Place a placard/sticker on the FLAP / SLATS Control Lever.

(M) MAINTENANCE.

Before the first flight after failure occurred (indicated by a SLAT FAULT status message) and then once each flight day, do the following:

Make sure that there is no mechanical disconnect as follows:

1. Do a Visual Inspection of the Slat Actuator (refer to AMM TASK 27-81-09-210-802).
2. If an acceleration of 0g, or less, is recorded in the log book due to pilot maneuvering, do as follows:
 - a. Before the next flight, do a Visual Inspection of the Slat Actuator (refer to AMM TASK 27-81-09-210-802).

(O) OPERATIONS.

Make an entry into the aircraft logbook for acceleration of 0g or less encountered in flight as a result of extreme maneuvering: e.g. collision avoidance or deep dive due to cabin depressurization. Maintenance visual check is required in these cases.

• Note •

Once each flight day, ensure that (M) Maintenance procedure has been documented in the AML.

(D) DISPATCH.

Not required.

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MEL	Flap System	Repair Category	Quantity Installed	Minimum Required
27-51-05-2		C	1	1
REMARKS AND EXCEPTIONS.				
System redundancy may be degraded as indicated by "FLAP FAULT" status message.				
PLACARD. Place a placard/sticker below the EICAS secondary page.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Ground Spoilers Control Surface Position Indicators	Repair Category	Quantity Installed	Minimum Required
27-60-01		C	4	0
REMARKS AND EXCEPTIONS.				
(M/FC) (O) Any may be inoperative provided:				
<ul style="list-style-type: none"> a. Ground Lift Dumpers (GLD) auto and manual modes are visually verified operative before each flight, and b. GLD spoilers are verified stowed before each flight. 				
PLACARD. Place a placard/sticker below the secondary EICAS display.				
(M/FC) MAINTENANCE.				
<u>Before each flight:</u>				
Do a visual check of the Ground Spoiler operation in the GLD Auto and Manual modes as follows:				
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> WARNING </div> <p>Make sure that there are no persons or equipment on or near the flight control surfaces. Accidental movement of the flight controls can cause injuries to personnel and/or damage to the equipment.</p> <p style="text-align: center;">• Note •</p> <p style="text-align: center;">During this check, have a qualified person visually make sure that the Ground Spoilers are in the correct position.</p>				
Continued				

MEL	EICAS Ground Spoilers Control Surface Position Indicators (Continued)	Repair Category	Quantity Installed	Minimum Required
27-60-01		C	4	0

• Note •

In the procedure that follows, the Ground Spoiler control surfaces are referred to as the spoilers.

• Note •

Two qualified individuals are required for this check, one to move the controls in the cockpit, the other view the control surface movement.

1. Make sure that both of the engine thrust levers are at IDLE.
2. Make sure that the Flight Spoiler Control lever is at the 0 position.
3. On the Spoilers control panel, make sure that the GND LIFT DUMPING switch is at AUTO.
4. Pressurize hydraulic systems 1, 2, and 3.
5. Make sure that the spoilers are retracted.
6. On the Spoilers control panel, put the GND LIFT DUMPING switch to MAN ARM; make sure that the Ground Spoilers extend.
7. On the Spoilers control panel, put the GND LIFT DUMPING switch to AUTO; make sure that the Ground Spoilers retract.

(O) OPERATIONS.**• Note •**

Make sure that there are no persons or equipment on or near the flight control surfaces. Accidental movement of the flight controls can cause injuries to personnel and/or damage to the equipment.

Before each flight:

Do a visual check of the Ground Spoiler operation in the GLD auto and manual mode as follows:

• Note •

Two qualified individuals are required for this check, one to move the controls in the cockpit, the other to view the control surface movement.

• Note •

In the procedure that follows, the Ground Spoiler control surfaces are referred to as the spoilers.

Make a logbook entry for Maintenance Procedure (M/FC) if performed by crew.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Ground Spoilers (Inboard or Outboard Pair)	Repair Category	Quantity Installed	Minimum Required
27-65-01-2		B	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) One pair of Ground Spoilers Inboard (IB) or Outboard (OB) may be inoperative in the RETRACTED position provided:

- a. All MFS and the remaining ground spoiler pair is operative in GLD AUTO and manual ARM modes,
- b. Affected Inboard or Outboard Ground Spoiler pair is secured stowed,
- c. **Before each flight**, verify both surfaces of the inoperative pair are fully retracted,
- d. Both Thrust Reversers are operative,
- e. No other GND SPLR (GS) or FLT SPLR/SPLRONS (MFS) Status messages are displayed, and
- f. Operations are conducted in accordance with Ground Spoilers inoperative performance data.

PLACARD.

Place a placard/sticker on the GLD arming panel.

(M) MAINTENANCE.

There are two (M) Maintenance functions associated with this deferral. The first (M) Function is to be performed after the failure occurred. The second (M) Function is to be performed once per flight day after the failure has occurred.

Before the first flight after the failure occurred, do as follows:

1. Have a qualified person do a visual check of the defective ground spoiler (GS) to make sure that it is in the fully retracted position.
2. Do the deactivation of the defective GS pair as follows:
 - a. If the inboard GS pair is defective, do the deactivation of the inboard GS pair (refer to AMM TASK 27-65-01-040-801).

• Note •

**When the deactivation procedure is completed,
the IB GND SPLRS caution message may show.**

- b. If the outboard GS pair is defective, do the deactivation of the outboard GS pair (refer to AMM TASK 27-65-05-040-801).

• Note •

**When the deactivation procedure is completed,
the OB GND SPLRS caution message may show.**

Continued

MEL	Ground Spoilers (Inboard or Outboard Pair) (Continued)	Repair Category	Quantity Installed	Minimum Required
27-65-01-2		B	2	1

3. Do an operational test of the spoilers in the GLD Auto and Manual Mode as follows:																				
a. Make sure that the aircraft is in the standard configuration for maintenance (refer to AMM TASK 12-00-00-867-801).																				
b. Obey all electrical/electronic safety precautions (refer to AMM TASK 24-00-00-910-801).																				
c. Obey all the hydraulic safety precautions (refer to AMM TASK 29-00-00-910-801).																				
d. Obey all the hydraulic technical precautions (refer to AMM TASK 29-00-00-910-802).																				
e. Connect the electrical power to the aircraft (refer to AMM TASK 24-00-00-861-801).																				
f. On the HYDRAULIC panel, set the ACMP 1, 2 and 3A switches to ON.																				
g. Make sure that the circuit breakers that follow are closed:																				
<table border="1"> <thead> <tr> <th>CB PANEL</th> <th>CB NO.</th> <th>NAME</th> <th>ZONE</th> </tr> </thead> <tbody> <tr> <td>CBP-1</td> <td>F1</td> <td>SSCU 1 CH A</td> <td>221</td> </tr> <tr> <td>CBP-2</td> <td>F1</td> <td>SSCU 1 CH B</td> <td>222</td> </tr> <tr> <td>CBP-2 LOWER</td> <td>R3</td> <td>SSCU 2 CH A</td> <td>222</td> </tr> <tr> <td>CBP-2 LOWER</td> <td>R4</td> <td>SSCU 2 CH B</td> <td>222</td> </tr> </tbody> </table>	CB PANEL	CB NO.	NAME	ZONE	CBP-1	F1	SSCU 1 CH A	221	CBP-2	F1	SSCU 1 CH B	222	CBP-2 LOWER	R3	SSCU 2 CH A	222	CBP-2 LOWER	R4	SSCU 2 CH B	222
CB PANEL	CB NO.	NAME	ZONE																	
CBP-1	F1	SSCU 1 CH A	221																	
CBP-2	F1	SSCU 1 CH B	222																	
CBP-2 LOWER	R3	SSCU 2 CH A	222																	
CBP-2 LOWER	R4	SSCU 2 CH B	222																	
h. Install warning placards on the spoilers to give warnings about the spoiler movement.																				
WARNING <p>Make sure that persons and equipment are not near the flight control surfaces. Flight control movement can cause injury to persons and damage to the equipment.</p>																				
i. Do an operational test of the GND LIFT DUMPING switch as follows:																				
1. On the center pedestal, set the GND LIFT DUMPING switch to MAN ARM and make sure that you get the result that follows:																				
a. The spoilers move to the fully extended position, but not the defective GS.																				
b. On the EICAS FLIGHT CONTROLS synoptic page, the spoiler position displays move to the fully extended position, but not the defective GS.																				
c. On the EICAS status page, the green GLD MAN ARM advisory message comes into view.																				
d. On the EICAS status page, the green GND SPLR DEPLOY advisory message comes into view.																				
e. On the EICAS status Page, the amber IB or OB GND SPLRS caution message comes into view.																				

Continued

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MEL	Ground Spoilers (Inboard or Outboard Pair) (Continued)	Repair Category	Quantity Installed	Minimum Required
27-65-01-2		B	2	1
<p>2. Have a qualified person do a visual check as follows:</p> <ul style="list-style-type: none"> a. Make sure that the defective GS pair are fully retracted, and b. Make sure that the functional GS pair and Multi Function Spoilers (MFS) are in the fully extended position. <p>3. On the center pedestal, set the GND LIFT DUMPING switch to MAN DISARM and make sure that you get the results that follow:</p> <ul style="list-style-type: none"> a. The spoilers move to the fully retracted position. b. On the EICAS FLIGHT CONTROLS synoptic page, the spoiler position displays move to the fully retracted position. c. On the EICAS Status page, the green GLD MAN ARM Advisory message goes out of view. d. On the EICAS Status page, the green GND SPLR DEPLOY Advisory message goes out of view. e. On the EICAS Status page, the amber IB or OB GND SPLRS Caution message comes into view. <p>4. Have a qualified person do a visual check to make sure that the spoilers are in the fully retracted position.</p> <p>5. On the center pedestal, set the GND LIFT DUMPING switch to AUTO.</p> <p>j. Do the operational test of the defective GS as follows:</p> <ol style="list-style-type: none"> 1. Attach a force gauge to the trailing edge of the defective GS pair. 2. Pull on the trailing edge of the defective GS pair with a force of 40 to 50 lbs. (18 to 23 kg) for 15 to 30 seconds in the direction to extend the surface. 3. Make sure that the defective GS pair does not move under the applied force. <p>k. Remove all tools, equipment and unwanted materials from the work area.</p> <p>l. Remove the hydraulic pressure as follows:</p> <ol style="list-style-type: none"> 1. If the outboard GS is defective, remove hydraulic pressure No. 1 and No. 2 (refer to AMM TASK 12-00-06-862-801). 2. If the inboard GS is defective, remove hydraulic pressure No. 3 (refer to AMM TASK 12-00-06-862-803). <p>m. Remove electrical power from the aircraft (refer to AMM TASK 24-00-00-861-801) if aircraft is left unattended.</p> <p>n. Remove the warning placard from the spoilers.</p>				

Continued

MEL	Ground Spoilers (Inboard or Outboard Pair) (Continued)	Repair Category	Quantity Installed	Minimum Required
27-65-01-2		B	2	1

(M) MAINTENANCE.

After the failure occurred, and each flight day after the failure occurred: Make sure that spoiler/stabilizer subsystem faults are not present as follows:

- a. Reset the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	F1	SSCU 1 CH A	221
CBP-2	F1	SSCU 1 CH B	222
CBP-2 LOWER	R3	SSCU 2 CH A	222
CBP-2 LOWER	R4	SSCU 2 CH B	222

- b. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to MFD 1 (MFD 2).
- c. On the multifunction display (MFD 1 or MFD 2), get access to the MAINTENANCE MAIN MENU page.
- d. On the ECP, push the UP or DN pushbuttons to move the cursor (>) to the ATA INDEX line.
- e. Push the SEL pushbutton to make a selection of the ATA INDEX page.
- f. Make sure that the ATA INDEX page shows on the MFD.
- g. On the ECP, push the FUEL pushbutton to get access to the ATA INDEX second page.
- h. Make sure that the ATA INDEX second page shows on the MFD.
- i. On the ECP, push the UP or DN pushbuttons to move the cursor (>) to the ATA 27-60 SPOILERS line.
- j. On the ECP, push the SEL pushbutton to make sure that the spoilers line replaceable units (LRUs) show on the MFD.
- k. On the ECP, push the UP or DN pushbuttons to move the cursor (>) to LRU SSCU 1 EXT.
- l. On the ECP, push the SEL pushbutton to make a selection of SSCU 1 EXT.
- m. Make sure that bits 16 and/or 17 are not set to 1 on labels 355 A or/and 355 B (if bits 16 and/or 17 are set to 1 on labels 355 A or/and 355 B, dispatch is not permitted).
- n. On the ECP, push the DOORS pushbutton to get access to LRU SSCU 2 EXT.

Continued

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MEL	Ground Spoilers (Inboard or Outboard Pair) (Continued)	Repair Category	Quantity Installed	Minimum Required
27-65-01-2		B	2	1

- o. On the ECP, push the SEL pushbutton to make a selection of SSCU 2 EXT.
- p. Make sure that bits 16 and/or 17 are not set to 1 on labels 355 A or/and 355 B (if bits 16 and/or 17 are set to 1 on labels 355 A or/and 355 B, dispatch is not permitted).
- q. Exit from the MDC as follows:
 - 1. On the ECP, push the MENU pushbutton to go back to the MAIN MENU page.
 - 2. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to OFF.
 - 3. Make sure that the navigation data is shown on the MFD 1 (MFD 2).

(O) OPERATIONS.

Before each flight: do a visual check of the affected ground spoiler pair to make sure they are fully retracted.

• Note •

Once each flight day, ensure that (M) Maintenance procedure has been documented in the AML.

• Note •

When the deactivation procedure is completed, the IB GND SPLRS caution message may show.

• Note •

When the deactivation procedure is completed, the OB GND SPLRS caution message may show.

Ensure Take Off and Landing report reflects performance data for Ground Spoilers inoperative.

(D) DISPATCH.

The affected ground spoiler must be selected INOP in Dispatch Monitor.

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MEL	Spoiler and Stabilizer Control System (SSCS) - SSCU 1 Channels	Repair Category	Quantity Installed	Minimum Required	
		C	2	1	
REMARKS AND EXCEPTIONS.					
May be inoperative as indicated by "SSCU 1 FAULT" status message provided both SSCU 2 Channels are operative.					
PLACARD.					
Place a placard/sticker on the spoilers system control subpanel.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
Not required.					
(D) DISPATCH.					
Not required.					
• Note •					
SSCU channels are operative if SSCU 1 FAULT and SSCU 2 FAULT are not shown on the EICAS.					
MMEL 20	END	25 OCT 19			

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MEL	Spoiler and Stabilizer Control System (SSCS) - SSCU 2 Channels	Repair Category	Quantity Installed	Minimum Required
27-65-02-2		C	2	1
REMARKS AND EXCEPTIONS.				
May be inoperative as indicated by "SSCU 2 FAULT" status message provided both SSCU 1 Channels are operative.				
PLACARD. Place a placard/sticker on the spoilers system control subpanel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Spoiler and Stabilizer Control System (SSCS) - Spoiler/Stabilizer Subsystem	Repair Category	Quantity Installed	Minimum Required
27-65-02-3b		C	1	1
REMARKS AND EXCEPTIONS.				
System redundancy may be degraded as indicated by "SPLR/STAB FAULT" status message provided both SSCU 1 Channels and both SSCU 2 Channels are operative.				
PLACARD. Place a placard/sticker on the spoilers system control subpanel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
• Note • SSCU channels are operative if SSCU 1 FAULT and SSCU 2 FAULT are not shown on the EICAS.				
MMEL 20	END	25 OCT 19		

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MEL	APU Fuel Feed SOV	Repair Category	Quantity Installed	Minimum Required
28-13-01-2		C	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) May be inoperative CLOSED provided APU is considered inoperative.

• Note •**APU must be deferred under MEL 49-10-01-2.****PLACARD.**

Place a placard/sticker on the APU Control Panel.

(M/FC) MAINTENANCE.

For an APU Fuel Feed SOV inoperative CLOSED, do as follows:

1. Do the procedure to deactivate the APU as follows:
 - a. On the APU control panel, set the APU PWR FUEL switch/light to OFF.
 - b. Open and collar the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	N10	APU FUEL PUMP	221
CBP-1	N11	APU ECU PRIM	221
CBP-1 LOWER	R9	FUEL SOV APU	221

• Note •

When the deactivation procedure is completed, the APU EGT and RPM indications can come out of view, the APU DOOR indication can become dashed (---) on the EICAS status page, and the Load Control Valve (LCV) symbol can come out of view on the ECS synoptic page.

(O) OPERATIONS.**• Note •**

Dispatch will notify down line stations that an Air Cart and an AC Power Cart will be needed.

(D) DISPATCH.

Notify down line stations that an Air Cart and an AC Power Cart will be needed.

Continued

MEL	APU Fuel Feed SOV (Continued)	Repair Category	Quantity Installed	Minimum Required
28-13-01-2		C	1	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) (D) May be inoperative OPEN provided:

- a. APU is used for engine starting on ground only,
- b. APU is shutdown after one engine start,
- c. APU is not used in flight,
- d. APU Fire Detection System is operative, and
- e. APU Fire Extinguishing System is operative.
- f. If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the APU Control Panel.

(M) MAINTENANCE.For an APU Fuel Feed SOV inoperative open, and each instance to use the APU to start an engine on the ground do as follows:

1. Do an Operational Check of the APU Fire Detection System
 - a. Connect electrical power to the aircraft.
 - b. On the Fire Detection/FIREX Monitor control panel, push and release the TEST switch
 - c. In less than five seconds, make sure that lights and messages come on as follows:
The switches that follow on the left and right glareshield panels:
 - MASTER WARNING (and flashes)
 - LH ENG FIRE PUSH
 - BOTTLE 1 ARMED PUSH TO DISCH
 - APU FIRE PUSH
 - BOTTLE ARMED PUSH TO DISCH
 - RH ENG FIRE PUSH
 - BOTTLE 2 ARMED PUSH TO DISCH
The switches that follow on the CARGO FIREX control panel:
 - AFT CARGO SMOKE PUSH
 - FWD CARGO SMOKE PUSH
 - BOTTLED ARMED PUSH TO DISCH
The green advisory message FIRE SYS OK on the EICAS secondary page.
 - d. After approximately 15 seconds, make sure these lights go off.

Continued

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MEL	APU Fuel Feed SOV (Continued)	Repair Category	Quantity Installed	Minimum Required																								
28-13-01-2		C	1	0																								
e. Make sure that the caution messages that follow do not show on the EICAS primary page: <ul style="list-style-type: none"> — AFT CARGO DET — AFT CARGO SQB1 — AFT CARGO SQB2 — APU FIRE FAIL — APU SQB — APU BTL LO — CARGO BTL LO — FIRE SYSTEM FAULT — FWD CARGO DET — FWD CARGO SQB1 — FWD CARGO SQB2 — L ENG FIRE FAIL — L ENG SQB — R ENG FIRE FAIL — R ENG SQB 																												
f. Make sure that the status messages that follow do not show on the EICAS secondary page: <ul style="list-style-type: none"> — FIRE SYS FAULT — L ENG SQB — R ENG SQB 																												
2. Make sure that the APU Fire Extinguishing System is operational. 3. Make sure that the circuit breakers that follow are closed:																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>CB PANEL</u></th> <th style="text-align: left;"><u>CB NO.</u></th> <th style="text-align: left;"><u>NAME</u></th> <th style="text-align: left;"><u>ZONE</u></th> </tr> </thead> <tbody> <tr> <td>CBP-1</td> <td>N10</td> <td>APU FUEL PUMP</td> <td>221</td> </tr> <tr> <td>CBP-1</td> <td>N11</td> <td>APU ECU PRIM</td> <td>221</td> </tr> <tr> <td>CBP-1 LOWER</td> <td>R9</td> <td>FUEL SOV APU</td> <td>221</td> </tr> <tr> <td>CBP-5</td> <td>A6</td> <td>APU ECU SEC</td> <td>311</td> </tr> <tr> <td>CBP-5</td> <td>B1</td> <td>APU DOOR ACT</td> <td>311</td> </tr> </tbody> </table>					<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>	CBP-1	N10	APU FUEL PUMP	221	CBP-1	N11	APU ECU PRIM	221	CBP-1 LOWER	R9	FUEL SOV APU	221	CBP-5	A6	APU ECU SEC	311	CBP-5	B1	APU DOOR ACT	311
<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>																									
CBP-1	N10	APU FUEL PUMP	221																									
CBP-1	N11	APU ECU PRIM	221																									
CBP-1 LOWER	R9	FUEL SOV APU	221																									
CBP-5	A6	APU ECU SEC	311																									
CBP-5	B1	APU DOOR ACT	311																									
4. On the EICAS control panel (ECP), push the FUEL pushbutton. 5. On the EICAS fuel synoptic page, make sure that the APU SOV legend is OPEN.																												

Continued

MEL	APU Fuel Feed SOV (Continued)	Repair Category	Quantity Installed	Minimum Required
28-13-01-2		C	1	0

6. On the ECP, push the STAT pushbutton to go back to the EICAS secondary page.
7. Start the APU.
8. Start the engine.
9. Shut down the APU.
10. Start the other engine using cross bleed start procedure (Refer to POH Chapter 5, Engine Start - Cross Bleed).

(O) OPERATIONS.

For an inoperative APU fuel feed SOV OPEN and APU is used to start an engine, do as follows:

1. Before APU start, make sure that the APU SOV OPEN status message shows on the EICAS secondary page.
2. Once the APU is switched off, make sure the APU PUMP caution message does not show on the EICAS primary page.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.

Notify down line stations that an Air Cart and an AC Power Cart will be needed.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

MMEL 20	END	25 OCT 19
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MEL	XFLOW AUTO OVERRIDE "MAN" Switchlight (light function only)	Repair Category	Quantity Installed	Minimum Required
28-13-02		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the XFLOW OVERRIDE Switchlight, located on the FUEL Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	XFLOW L/R "ON/FAIL" Switchlights (light function only)	Repair Category	Quantity Installed	Minimum Required
28-13-03		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the XFLOW L (and/or XFLOW R) Switchlight(s) (as applicable), located on the FUEL Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	GRAVITY XFLOW "OPEN/FAIL" Switchlight (light function only)	Repair Category	Quantity Installed	Minimum Required
28-13-04		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the GRAVITY XFLOW switchlight, located on the FUEL Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Transfer Ejectors (Center Tank)	Repair Category	Quantity Installed	Minimum Required
28-13-07-2		B	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (D) One may be inoperative provided:

1. Center tank is empty, and
2. EICAS Center Tank Fuel Quantity Readout is operative.

PLACARD.

Place a placard/sticker on the REFUEL/DEFUEL Control Panel and below the EICAS display.

(M) MAINTENANCE.

For an inoperative center fuel tank transfer ejector, do as follows:

1. Connect the electrical power to the aircraft.
2. Make sure that the center tank is empty.
3. If the center fuel tank quantity is not empty, defuel the center tank as follows:
 - a. Do the suction defueling procedure (refer to AMM TASK 12-11-28-650-804).
OR
 - b. Do the gravity defueling procedure (refer to AMM TASK 12-11-28-650-805).
4. Remove electrical power from the aircraft.

(O) OPERATIONS.

Not required.

(D) DISPATCH.Ensure Ramp fuel is **less than** Max Wing tank fuel as follows: 14,984 lbs. if Pressure Refueling 14,580 lbs. if Gravity Refueling (values from the P.O.H)**- OR OPTION 2 -****REMARKS AND EXCEPTIONS.**

(M/FC) (O) One may be inoperative provided:

- a. Center tank contains less than 500 lbs of fuel before each flight,
- b. Remaining fuel in center tank is considered unusable,
- c. Aircraft range is limited accordingly,
- d. EICAS Center Tank Fuel Quantity Readout is operative, and
- e. Flight crew monitors center tank fuel quantity for proper transfer.

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MEL	Transfer Ejectors (Center Tank) (Continued)	Repair Category	Quantity Installed	Minimum Required
28-13-07-2		B	2	1

PLACARD.

Place a placard/sticker on the REFUEL/DEFUEL Control Panel and below the EICAS display.

(M/FC) MAINTENANCE.

For an inoperative center fuel tank transfer ejector, do as follows:

1. Connect the electrical power to the aircraft.
2. Make sure that the center tank contains less than 500 lbs (227 kg).
3. If the center fuel tank quantity is greater than 500 lbs (227 kg), defuel the center tank as follows:
 - a. Do the suction defueling procedure (refer to AMM TASK 12-11-28-650-804).
OR
 - b. Do the gravity defueling procedure (refer to AMM TASK 12-11-28-650-805).
4. Remove electrical power from the aircraft.

(O) OPERATIONS.

Monitor center tank fuel quantity for proper transfer.

(D) DISPATCH.

RAMP Fuel must be less than 15,080 lbs.

MMEL 20	END	25 OCT 19
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MEL	Fuel Transfer SOVs (Center Tank)	Repair Category	Quantity Installed	Minimum Required
28-13-08-2		B	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (D) One may be inoperative CLOSED provided:

- a. Center Tank is empty,
- b. Opposite Transfer Ejector (Center Tank) is operative, and
- c. EICAS Center Tank Fuel Quantity Readout is operative.

PLACARD.

Place a placard/sticker on the REFUEL/DEFUEL Control Panel and below the EICAS display.

(M/FC) MAINTENANCE.

For an inoperative center fuel tank transfer SOV in the CLOSED position, do as follows:

1. Make sure that the center tank is empty.
2. If the center tank is not empty, do as follows:
 - a. Do the suction defueling procedure (refer to AMM TASK 12-11-28-650-804).
OR
 - b. Do the gravity defueling procedure (refer to AMM TASK 12-11-28-650-805).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Ensure Ramp fuel is less than Max Wing tank fuel as follows: 14,984 lbs. if Pressure Refueling 14,580 lbs. if Gravity Refueling (values from the P.O.H.).

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M/FC) (O) One may be inoperative CLOSED provided:

- a. Center Tank contains less than 500 lbs of fuel before each flight,
- b. Opposite Transfer Ejector (Center Tank) is operative,
- c. Remaining fuel in center tank is considered unusable,
- d. Aircraft range is limited accordingly,
- e. EICAS Center Tank Fuel Quantity Readout is operative, and
- f. Flight crew monitors center tank fuel quantity for proper transfer.

Continued

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MEL	Fuel Transfer SOVs (Center Tank) (Continued)	Repair Category	Quantity Installed	Minimum Required
28-13-08-2		B	2	1

PLACARD.

Place a placard/sticker on the REFUEL/DEFUEL Control Panel and below the EICAS display.

(M/FC) MAINTENANCE.

For an inoperative center fuel tank transfer SOV in the CLOSED position, do as follows:

1. Make sure that the center tank contains less than 500 lbs (227 kg).
2. If the center tank is greater than 500 lbs (227 kg), do as follows:
 - a. Do the suction defueling procedure (refer to AMM TASK 12-11-28-650-804).
OR
 - b. Do the gravity defueling procedure (refer to AMM TASK 12-11-28-650-805).

(O) OPERATIONS.

Monitor center tank fuel quantity for proper transfer.

(D) DISPATCH.

RAMP Fuel must be less than 15,080 lbs.

- OR OPTION 3 -

Repair Category	Quantity Installed	Minimum Required
C	2	0

REMARKS AND EXCEPTIONS.

(M/FC) Both may be inoperative OPEN provided Center tank is empty.

PLACARD.

Place a placard/sticker on the REFUEL/DEFUEL Control Panel and below the EICAS display.

(M/FC) MAINTENANCE.

For two inoperative center fuel tanks transfer SOVs in the OPEN position, do as follows:

1. Make sure that the center tank is empty.
2. If the center tank is not empty, do as follows:
 - a. Do the suction defueling procedure (refer to AMM TASK 12-11-28-650-804).
OR
 - b. Do the gravity defueling procedure (refer to AMM TASK 12-11-28-650-805).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Ensure Ramp fuel is **less than** Max Wing tank fuel as follows: 14,984 lbs. if Pressure Refueling 14,580 lbs. if Gravity Refueling (values from the P.O.H)

MMEL 20	END	25 OCT 19
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MEL	XFLOW Pump	Repair Category	Quantity Installed	Minimum Required
28-13-10		C	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) May be inoperative provided:

- a. All EICAS Fuel Tank Quantity Readouts are operative, and
- b. Before each flight, Gravity Crossflow SOV is verified operative.

• Note •

Auto and manual power crossflow will be inoperative.**PLACARD.**

Place a placard/sticker on the FUEL Control Panel.

(M) MAINTENANCE.

For an inoperative XFLOW pump, do as follows:

1. Open and collar the circuit breakers that follow:

CB Panel: **CBP-1 LOWER**CB No. **S5**Name: **CROSSFLOW PUMP**Zone: **221****AND**CB Panel: **CBP-2 LOWER**CB No. **R7**Name: **CROSSFLOW PUMP CONT**Zone: **222**

• Note •

When the deactivation procedure is completed, the XFLOW PUMP caution message will come into view continuously on the EICAS primary page and the XFLOW Pump symbol will be shown in amber on the Fuel synoptic page.

The L and R XFLOW AUTO OVERRIDE FAIL lamps will be illuminated on the FUEL panel.

Continued

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MEL	XFLOW Pump (Continued)	Repair Category	Quantity Installed	Minimum Required
28-13-10		C	1	0

(O) OPERATIONS.

- A. For a XFLOW Pump inoperative, do as follows:

Before each flight:

1. On the EICAS Control Panel (ECP), push the FUEL pushbutton to access the FUEL SYNOPTIC page.
2. Press in the GRAVITY XFLOW switch/light on the FUEL control panel.
3. On the FUEL synoptic page, make sure that the gravity crossflow valve legend is OPEN. Otherwise, dispatch is not permitted.
4. Press out the GRAVITY XFLOW switch/light on the FUEL control panel.
5. On the FUEL synoptic page, make sure that the gravity crossflow valve legend is CLOSE.
6. Configure the gravity crossflow valve as per normal procedure.

• Note •

The gravity crossflow is sensitive to sideslip.

- B. On ground, during single engine operation, do as follows:

1. Select the gravity crossflow to correct excessive fuel imbalance.

• Note •

**Refer to POH Chapter 5 (Supplemental) FUEL GRAVITY XFLOW
for procedures on maintaining fuel balance in flight.**

(D) DISPATCH.

Not required.

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MEL	Fuel Boost Pumps	Repair Category	Quantity Installed	Minimum Required
28-23-01-2		B	2	1

REMARKS AND EXCEPTIONS.

(M/FC) One may be inoperative provided:

- a. Inoperative boost pump is deactivated, and
- b. XFLOW Pump is operative.

PLACARD.

Place a placard/sticker on the FUEL Control Panel.

(M/FC) MAINTENANCE.

For an inoperative fuel boost pump, do as follows:

1. Energize the aircraft electrical power systems.
2. On the FUEL panel, set the affected LH or RH BOOST PUMP switch to INOP.
3. Open and collar the circuit breakers that follow:

- a. For an inoperative LH BOOST PUMP, open and collar the circuit breaker that follows:

CB PANEL: CBP-1

CB NO: M6

NAME: L FUEL PUMP

ZONE: 221

- b. For an inoperative RH BOOST PUMP, open and collar the circuit breaker that follows:

CB PANEL: CBP-2

CB NO: G9

NAME: R FUEL PUMP

ZONE: 222

• Note •

When the deactivation procedure is completed, the “L or R FUEL PUMP” caution message will come into view continuously on the EICAS primary page.

4. Remove the electrical power from the aircraft.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Fuel Boost Pumps “ON/INOP” Switch Lights (light function only)	Repair Category	Quantity Installed	Minimum Required
28-23-02		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD. Place a placard/sticker on the FUEL Control Panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	APU Fuel Pump	Repair Category	Quantity Installed	Minimum Required
28-24-03		C	1	0
REMARKS AND EXCEPTIONS.				
(M/FC) (O) (D) May be inoperative provided APU is considered inoperative.				
• Note • APU must be deferred under MEL 49-10-01-2.				
PLACARD. Place a placard/sticker on the APU Control Panel.				
(M/FC) MAINTENANCE. For an inoperative APU fuel pump, do as follows:				
1. Open and tag the inoperative APU fuel pump circuit breaker that follows:				
CB Panel: CBP-1				
CB No. N10				
Name: APU FUEL PUMP				
Zone: 221				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Dispatch will notify down line stations that an Air Cart and an AC Power Cart will be needed.				
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MEL	APU PWR Fuel "Pump FAIL/SOV Fail" Switchlight (light function only)	Repair Category	Quantity Installed	Minimum Required
28-24-04		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the APU PWR FUEL switchlight, located on the APU Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	External Single Point Pressure Refueling System (Refuel/Defuel Control Panel)	Repair Category	Quantity Installed	Minimum Required
28-25-01-2		C	1	0
REMARKS AND EXCEPTIONS.				
(O) (D) May be inoperative provided gravity refueling procedures are used.				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">Refer to POH Chapter 3 (Limitations) for Gravity Refueling.</p>				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">Refer to POH for reduced fuel quantity available when using gravity refueling.</p>				
PLACARD.				
1. Place a "Gravity Refueling Only" placard/sticker on the inside of the Refuel panel door.				
2. Place a placard/sticker below the EICAS secondary display.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
When the gravity refueling procedure is used for refueling of any wing tanks, make sure that the gravity filler caps are secured closed.				
(D) DISPATCH.				
Inform downline stations of the need to utilize gravity refueling procedures.				
MMEL 20	END	25 OCT 19		

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MEL	External Single Point Pressure Refueling System (Refuel/Defuel Control Panel) - Automatic Mode	Repair Category	Quantity Installed	Minimum Required
28-25-01-2a		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided manual or gravity refueling procedure is used.

• Note •

Refer to POH for reduced fuel quantity available when using gravity refueling.

PLACARD.

Place a placard/sticker on the exterior REFUEL/DEFUEL Control Panel and below the EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

When the gravity refueling procedure is used for refueling of any wing tanks, make sure that the gravity filler caps are secured closed.

• Note •

Refer to POH Chapter 3 (Limitations) for Gravity Refueling.

(D) DISPATCH.

Inform downline stations of the need to utilize gravity refueling procedures.

MMEL 20	END	25 OCT 19
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MEL	External Single Point Pressure Refueling System (Refuel/Defuel Control Panel) - Manual Mode	Repair Category	Quantity Installed	Minimum Required
28-25-01-2b		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided automatic or gravity refueling procedure is used.

• Note •

Refer to POH for reduced fuel quantity available when using gravity refueling.

PLACARD.

Place a placard/sticker on the exterior REFUEL/DEFUEL Control panel and below the EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

When the gravity refueling procedure is used for refueling of any wing tanks, make sure that the gravity filler caps are secured closed.

• Note •

Refer to POH Chapter 3 (Limitations) for Gravity Refueling.

(D) DISPATCH.

Inform downline stations of the need to utilize gravity refueling procedures.

MMEL 20	END	25 OCT 19
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MEL	External Single Point Pressure Refueling System (Refuel/Defuel Control Panel) - Fuel Quantity	Repair Category	Quantity Installed	Minimum Required
28-25-01-2c	Display Indication	C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. Manual or gravity refueling procedure is used, and
- b. All EICAS Fuel Tank Quantity Readouts are operative.

• Note •

Refer to POH for reduced fuel quantity available when using gravity refueling.

PLACARD.

Place a placard/sticker on the exterior REFUEL/DEFUEL Control Panel and below the EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

When the gravity refueling procedure is used for refueling of any wing tanks, make sure that the gravity filler caps are secured closed.

• Note •

Refer to POH Chapter 3 (Limitations) for Gravity Refueling.

(D) DISPATCH.

Inform downline stations of the need to utilize gravity refueling procedures.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) (D) May be inoperative provided:

- a. Manual or gravity refueling procedure is used, and
- b. All Magnetic Level Indicators (MLIs) are operative.

• Note •

Refer to POH for reduced fuel quantity available when using gravity refueling.

PLACARD.

Place a placard/sticker on the exterior Refuel/Defuel Control panel and below the EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

When the gravity refueling procedure is used for refueling of any wing tanks, make sure that the gravity filler caps are secured closed.

• Note •

Refer to POH Chapter 3 (Limitations) for Gravity Refueling.

(D) DISPATCH.

Inform downline stations of the need to utilize gravity refueling procedures.

MMEL 20	END	25 OCT 19
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30 OCT 20

MEL	Refuel/Defuel Adapter Cap	Repair Category	Quantity Installed	Minimum Required
28-25-02		C	1	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative (missing) provided:

- a. Pressure-Refueling Adapter Door is not missing,
- b. Refuel/Defuel Adapter is visually checked for contamination prior to each refueling, and
- c. No leakage can be detected after refueling is complete.

PLACARD.

Place a placard/sticker on the Refuel/Defuel Control Panel and below the EICAS display.

(M) MAINTENANCE.

For a missing Refuel/Defuel Adapter Cap, do as follows:

1. Make sure the Refuel/Defuel Adapter is clean of any contamination before you connect the fuel nozzle.
2. After the refueling or defueling is complete, make sure that there is no fuel leakage at the Refuel/Defuel Adapter.
3. Make sure that the check valve is closed.
4. On the Refuel/Defuel Panel, make sure that the Refuel/Defuel Shutoff Valves are shown in the closed position.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Refuel SOV - Wing	Repair Category	Quantity Installed	Minimum Required
28-25-03-2		C	2	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) Both may be inoperative CLOSED provided gravity refueling procedures are used for the affected tanks.

• Note •

Refer to the POH for reduced fuel quantity available when using gravity refueling.

PLACARD.

Place a placard/sticker on the Refuel/Defuel Control panel and below the EICAS display.

(M) MAINTENANCE.

For an inoperative refuel SOV do as follows:

WARNING

Make sure there is no more than 2500 lbs (1134 kg) of imbalance between main tanks when you do the refuel/defuel procedure. The aircraft can move and cause injury to persons and/or damage to equipment.

1. Do the procedure for gravity refueling of the aircraft (refer to AMM TASK 12-11-28-650-803).
2. Do the assurance check of the refuel/defuel shut-off valve in the closed position (refer to AMM TASK 28-25-06-280-805).

(O) OPERATIONS.

• Note •

Refer to POH Chapter 3 (Limitations) for Gravity Refueling.

(D) DISPATCH.

Inform downline stations of the need to utilize gravity refueling procedures.

MMEL 20	END	25 OCT 19
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ATA Chapter 28: Fuel

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30 OCT 20

MEL	Refuel SOV - Center	Repair Category	Quantity Installed	Minimum Required
28-25-03-3		C	1	0
REMARKS AND EXCEPTIONS.				
(D) May be inoperative provided center tank remains empty when remaining fuel is consumed.				
PLACARD. Place a placard/sticker on the Refuel/Defuel Control panel and below the EICAS display.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Ensure Ramp fuel is less than Max Wing tank fuel as follows: 14,984 lbs.				
MMEL 20	END	25 OCT 19		

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MEL	High Level Sensors - Wing	Repair Category	Quantity Installed	Minimum Required
28-25-04-2		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both may be inoperative provided:

- a. Gravity refueling procedures are used for affected wing tank,
- b. All EICAS Fuel Tank Quantity Readouts are operative,
- c. X-Flow Pump is operative,
- d. Both Transfer Ejectors are operative, and
- e. Both Transfer SOVs are operative.

• Note •

Refer to POH for reduced fuel quantity available when using gravity refueling.

PLACARD.

Place a placard/sticker on the Refuel/Defuel Control panel and below the EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

If the EICAS fuel quantity indication fails in-flight on the affected side and the Center Tank contains 800 pounds of fuel or more, do as follows:

1. Open the Gravity/Crossflow valve.

• Note •

If an imbalance condition is noticed, fly wing low on the side with the lower tank quantity.

2. Close Gravity Crossflow valve when Center Tank Fuel Quantity reaches zero and no imbalance condition is present.

• Note •

Refer to POH Chapter 3 (Limitations) for Gravity Refueling.

(D) DISPATCH.

Inform downline stations of the need to utilize gravity refueling procedures.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M/FC) (O) (D) Both may be inoperative provided:

- a. Manual refueling procedures are used for affected wing tank,
- b. All EICAS Fuel Tank Quantity Readouts are operative,
- c. X Flow Pump is operative,
- d. Both Transfer Ejectors are operative, and
- e. Both Transfer SOVs are operative.

Continued

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MEL	High Level Sensors - Wing (Continued)	Repair Category	Quantity Installed	Minimum Required
28-25-04-2		C	2	0

PLACARD.

Place a placard/sticker on the Refuel/Defuel Control panel and below the EICAS display.

(M/FC) MAINTENANCE.

To do the pressure refueling in the manual mode do the steps that follow:

1. Remove the cap from the refuel/defuel single-point adapter and connect the fuel nozzle from the fuel tender.
2. Make sure the switches on the refuel/defuel control panel on the external surface of the fuselage are set as follows:
 - The three refuel SOV toggle-switches are set to OFF.
 - The auto start switch is set to OFF.
3. Do the operational test of the refuel/defuel system.
4. Pressurize the refueling hose between 40 to 55 psi.
5. Slowly open the refuel/defuel nozzle to fill the manifold.
6. Lift the guard off the POWER toggle switch.
7. Set the POWER toggle switch to on and make sure of the conditions that follow:
 - The power ON indicator light comes on.
 - The FAULT ANNUNC. indicator light does not come on.
8. Set the mode selector switch to FUEL MANUAL.
9. Make sure the auto start switch is set to OFF.
10. Set the applicable refuel SOV toggle-switch to ON.
11. Make sure the applicable SOV OP indicator lights come on and the applicable SOV CL indicator lights go off.
12. Monitor the RIGHT, center, and LEFT FUEL QTY displays until you have the necessary quantity.
13. If you fill the tanks to their full capacity, make sure of the conditions that follow:
 - The H. LEVEL DETECTOR indicator lights come on.
 - The SOV OP indicator lights go off.
 - The SOV CL indicator lights come on.

Stop the manual pressure refueling as follows:

1. Set the applicable refuel SOV toggle-switch to OFF.
2. Set the mode selector switch to OFF.
3. Set the POWER toggle switch to OFF.
4. Make sure that the power ON indicator light goes off.
5. Close the guard over the POWER toggle switch.

Continued

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MEL	High Level Sensors - Wing (Continued)	Repair Category	Quantity Installed	Minimum Required
28-25-04-2		C	2	0

6. Disconnect the fuel tender from the aircraft as follows:

- Set the fuel pressure on the fuel tender to 0 psi (0 kPa).
- Disconnect the fuel nozzle from the refuel/defuel adapter.
- Disconnect the fuel nozzle ground from the aircraft grounding point.
- Install the cap to the refuel/defuel single-point adapter.

(O) OPERATIONS.

If the EICAS fuel quantity indication fails in-flight on the affected side and the Center Tank contains 800 pounds of fuel or more, do as follows:

1. Open the Gravity/Crossflow valve.

• Note •

**If an imbalance condition is noticed, fly wing low on the side
with the lower tank quantity.**

2. Close Gravity Crossflow valve when Center Tank Fuel Quantity reaches zero and no imbalance condition is present.

(D) DISPATCH.

Inform downline stations of the need to utilize manual refueling procedures.

MMEL 20	END	25 OCT 19
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MEL	High Level Sensors - Center	Repair Category	Quantity Installed	Minimum Required
28-25-04-3		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided center tank remains empty.

PLACARD.

Place a placard/sticker on the Refuel/Defuel Control panel and below the EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

- I 1. Ensure Ramp fuel is **less than** Max Wing tank fuel as follows: 14,984 lbs. if Pressure Refueling
14,810 lbs. if Gravity Refueling (values from the P.O.H)
- I 2. Inform downline stations of specific fueling requirements if gravity refueling.

MMEL 20	END	25 OCT 19
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ATA Chapter 28: Fuel

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MEL	EICAS Bulk Fuel Temperature Indication	Repair Category	Quantity Installed	Minimum Required
28-40-01		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. TAT is used as an indication of fuel temperature,
- b. TAT is monitored during flight, and
- c. For the first flight of the day, the ambient temperatures during last 10 hours were above -29°C for A/C last fueled with Jet A or above -36°C for A/C last fueled with Jet A-1, and
- d. On subsequent flights, when refueling activities are to be conducted, local temperatures are to be above -25°C for A/C using Jet A or above -32°C for A/C using Jet A-1 for at least 10 hours prior to the refueling.

PLACARD.

Place a placard/sticker on the Fuel Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**During Flight**

Flight operations must be performed above -40°C TAT. If TAT is (-40°C) or less, do as follows:

1. Airplane altitude..... Descend to warmer altitude
2. Airspeed Increase during descent

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	EICAS Fuel Tank Quantity Readouts (Left, Right and Total)	Repair Category	Quantity Installed	Minimum Required
28-41-01-2		B	3	1

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) One main fuel tank quantity readout plus total quantity readout may be inoperative provided:

- a. Both LH and RH tanks are completely filled,
- b. XFLOW auto-override is selected to MANUAL,
- c. Aircraft is refueled using Single Point Pressure Refueling System,
- d. Associated High Level Sensor is operative,
- e. Opposite side Transfer Ejector is operative,
- f. Opposite side Fuel Transfer SOV is operative,
- g. Single engine taxi is prohibited, and
- h. FMS must be operative.

• Note •

Dispatcher must confirm that OCC Coordinator has restricted flight with inventory (passenger count) and includes restriction in station briefing.

PLACARD.

Place a placard/sticker below the primary and secondary EICAS displays.

(M) MAINTENANCE.**Before each flight:**

For an inoperative main tank (left or right) and total fuel tank EICAS quantity readout, do as follows:

1. Fill the left (right) fuel tank as follows:

WARNING

Make sure there is no more than 2500 lbs (1134 kg) of imbalance between the main tanks when you do the refuel/defuel procedure. The aircraft can move and cause injury to persons and/or damage to equipment.

- a. Do the procedure of the automatic pressure refueling of the left (right) fuel tank(s) (refer to the AMM TASK 12-11-28-650-801).
OR
 - b. Do the procedure of the manual pressure refueling of the left (right) fuel tank(s) (refer to the AMM TASK 12-11-28-650-802).
2. On the FUEL panel, select the XFLOW AUTO OVERRIDE switch/light to MANUAL.
 3. On the FUEL panel, make sure that the XFLOW AUTO OVERRIDE switch shows MAN.

Continued

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MEL	EICAS Fuel Tank Quantity Readouts (Left, Right and Total) (Continued)	Repair Category	Quantity Installed	Minimum Required
28-41-01-2		B	3	1

• Note •

The AUTO XFLOW INHIB status message will go out of view from the EICAS secondary page.

For an inoperative left (right) and total fuel tank EICAS fuel tank quantity readouts, with the left (right) fuel tank in use at a less than a full level, do as follows:

1. On the FUEL panel, select the XFLOW AUTO OVERRIDE switch to MANUAL.
2. On the FUEL panel, make sure that the XFLOW AUTO OVERRIDE switch shows MAN.

• Note •

The AUTO XFLOW INHIB status message will go out of view from the EICAS secondary page.

3. On the FUEL panel, make sure that the XFLOW L and R switch/lights do not show ON or FAIL.
4. Fill the left (right) fuel tank completely full as follows:

WARNING

Make sure there is no more than 2500 pounds (1134 kg) of imbalance between the main tanks when you do the Refuel/Defuel procedure. The aircraft can move and cause injury to persons and/or damage to equipment.

- a. Do the manual pressure refueling procedure
OR
- b. Do the gravity refueling procedure.
5. To make sure that you completely fill the left (right) fuel tank, do the magnetic level indicator (MLI) check procedure (refer to the AMM 12-11-28-750-802).

(O) OPERATIONS.

• Note •

Prior to each flight, ensure that (M) Maintenance procedure has been documented in the AML.

For an inoperative left (or right) wing tank and total fuel quantity indication, do as follows:

1. Verify the total fuel quantity is entered correctly into the FMS, after refueling is complete and prior to engine start.
2. Monitor fuel burn using the FMS to detect any fuel imbalance.

Continued

MEL	EICAS Fuel Tank Quantity Readouts (Left, Right and Total) (Continued)	Repair Category	Quantity Installed	Minimum Required
28-41-01-2		B	3	1

If a fuel imbalance occurs in flight:

1. Maintain straight and level flight.
2. Use the operative tank quantity EICAS indications and the fuel remaining from the FMS to calculate an approximate fuel quantity on each side.
3. Disengage Autopilot and verify all trim settings are neutral.
4. Confirm which wing tank is heavier while flying manually. Use the Manual Power Crossflow or Gravity Crossflow procedure to correct the imbalance.
5. Re-engage Autopilot and monitor fuel balance.

• Note •

**Auto Crossflow is inhibited when Left or Right Tank
Fuel Quantity Readout is inoperative.**

• Note •

Maintaining symmetrical fuel flows in flight will aid in preventing a fuel imbalance.

Maintain an in-flight fuel log as follows:

1. Record [“INITIAL FUEL LOAD”] (1) and operative fuel quantity indications in the 0 + 00 column.

Each 30 minutes do the steps that follow:

1. Record fuel remaining in the tanks with operative gauges, on the “L” and “C” or “R” and “C” [Fuel Remaining in tanks”] lanes.
 - a. Compute [“TOTAL (operative Quantity Readout)”] (2) and record on the line provided.
 - b. Record “Engine Fuel Used” from the fuel used indications.
 - c. Compute “APU fuel used” and record on line provided.
 - d. Compute “TOTAL FUEL USED” (3).
 - e. Add [TOTAL (operative Quantity Readout)] (2) and [“TOTAL FUEL USED”] (3) to acquire [TOTAL FUEL USED ACCOUNTED FOR (2) + (3)] (4).
 - f. Subtract [“TOTAL FUEL USED ACCOUNTED FOR (2) + (3)”] (4) from [INITIAL FUEL LOAD] (1) to acquire [“FUEL REMAINING IN AFFECTED TANK (1) – (4)”] (5).

Continued

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MEL	EICAS Fuel Tank Quantity Readouts (Left, Right and Total) (Continued)							Repair Category	Quantity Installed	Minimum Required
28-41-01-2		B	3	1						
(1) INITIAL FUEL LOAD										
Time in Flight		0+00	0+30	1+00	1+30	2+00	2+30	3+00		
Fuel Remaining in Tanks with Operative Quantity Readouts	L									
	R									
	C									
(2) TOTAL (Operative Quantity Readouts)										
Engine Fuel Used	L									
	R									
APU Fuel Used (260 lb (118 kg)/hr x hr)										
(3) TOTAL FUEL USED										
(4) TOTAL FUEL USED ACCOUNTED FOR (line 2+line 3)										
(5) FUEL REMAINING IN AFFECTED TANK (line 1-line 4)										
(D) DISPATCH.										
1. Plan fuel load to ensure both LH and RH tanks are completely filled.										
2. Confirm that OCC Coordinator has restricted flight with inventory (passenger count) and includes restriction in station briefing.										
MMEL 20	END						25 OCT 19			

MEL	EICAS Fuel Tank Quantity Readouts (Center and Total)	Repair Category	Quantity Installed	Minimum Required
28-41-02-2		B	2	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) Both may be inoperative provided:

- a. Center fuel tank remains empty,
- b. Left and Right EICAS Fuel Tank Quantity Readouts are operative, and
- c. Magnetic Level Indicators are used to verify that center tank is empty once each flight day.

PLACARD.

Place a placard/sticker below the EICAS primary and secondary pages as required.

(M) MAINTENANCE.

For an inoperative EICAS Center and Total Fuel Quantity Readouts with the center fuel tank empty, do as follows:

WARNING

Make sure there is no more than 2500 pounds (1134 kg) of imbalance between the main tanks when you do the Refuel/Defuel procedure. The aircraft can move and cause injury to persons and/or damage to equipment.

1. Remove all the fuel from the center fuel tank as follows:
 - a. Do the suction defueling procedure (refer to AMM TASK 12-11-28-650-804)
OR
 - b. Do the gravity defueling procedure (refer to AMM TASK 12-11-28-650-805).
2. Once each flight day, make sure that the center tank is empty as follows:
 - a. Do the magnetic level indicator (MLI) check procedure (refer to AMM TASK 12-11-28-750-802).

(O) OPERATIONS.

Once per flight day, ensure that (M) Maintenance procedure has been documented in the AML.

1. If required use the Manual Power Crossflow or Gravity Crossflow Procedure to correct a fuel imbalance.
2. Sum the left and right fuel tank quantity (shown on the Left and Right EICAS Fuel Tank Quantity Readouts) to determine the total fuel quantity on board instead of using the Fuel Used Indication.

• Note •

Auto Crossflow is inhibited when center tank fuel quantity readout fails.

(D) DISPATCH.

Not required.

Continued

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MEL	EICAS Fuel Tank Quantity Readouts (Center and Total) (Continued)	Repair Category	Quantity Installed	Minimum Required
28-41-02-2		B	2	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) Both may be inoperative provided:

- a. Center fuel tank remains empty,
- b. Left and Right EICAS Fuel Tank Quantity Readouts are operative, and
- c. Aircraft is refueled using Single Point Pressure Refueling System.

PLACARD.

Place a placard/sticker below the EICAS primary and secondary pages as required.

(M) MAINTENANCE.

For an inoperative EICAS Center and Total Fuel Quantity Readouts with the center fuel tank empty, do as follows:

WARNING

Make sure there is no more than 2500 lbs (1134 kg) of imbalance between the main tanks when you do the refuel/defuel procedure. The aircraft can move and cause injury to persons and/or damage to equipment.

1. Fill the center tank as follows:
 - a. Do the automatic pressure refueling procedure
OR
 - b. Do the manual pressure refueling procedure.

(O) OPERATIONS.

Sum the left and right fuel tank quantity (shown on the Left and Right EICAS Fuel Tank Quantity Readouts) to determine the total fuel quantity on board instead of using the Fuel Used Indication.

• Note •

This is true once the center tank fuel is used, which occur early into the cruise portion of the flight even with a full fuel load and can be confirmed once both main (wing) fuel loades are less than 6900 lbs.

(D) DISPATCH.

Not required.

Continued

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MEL	EICAS Fuel Tank Quantity Readouts (Center and Total) (Continued)	Repair Category	Quantity Installed	Minimum Required
28-41-02-2		B	2	0

- OR OPTION 3 -**REMARKS AND EXCEPTIONS.**

(M) (O) Both may be inoperative provided:

- a. Center fuel tank is refueled using Single Point Pressure Refueling System,
- b. MLI is used to verify center tank quantity before each flight, and
- c. Left and Right EICAS Fuel Tank Quantity Readouts are operative.

PLACARD.

Place a placard/sticker below the EICAS primary and secondary pages as required.

(M) MAINTENANCE.

For an inoperative EICAS Center and Total Fuel Quantity Readouts with the center fuel tank empty, do as follows:

1. Fill the center tank to the necessary level as follows:

WARNING

Make sure there is no more than 2500 lbs (1134 kg) of imbalance between the main tanks when you do the refuel/defuel procedure. The aircraft can move and cause injury to persons and/or damage to equipment.

- a. Do the automatic pressure refueling procedure
OR
- b. Do the manual pressure refueling procedure.

• Note •**The MLIs can be used for refueling calculations.**

2. Make sure that the fuel in the center tank is at the correct level as follows:

- a. Do the magnetic level indicator (MLI) check procedure (refer to AMM TASK 12-11-28-750-802).
- 3. Advise the flight crew of the center tank fuel quantity.

(O) OPERATIONS.

Sum the left and right fuel tank quantity (shown on the Left and Right EICAS Fuel Tank Quantity Readouts) to determine the total fuel quantity on board instead of using the Fuel Used Indication.

• Note •

This is true once the center tank fuel is used, which occur early into the cruise portion of the flight even with a full fuel load and can be confirmed once both main (wing) fuel loads are less than 6900 lbs.

MMEL 20	END	25 OCT 19
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MEL	Fuel Computer Channels (FQGC)	Repair Category	Quantity Installed	Minimum Required
28-41-03-2		B	2	1

REMARKS AND EXCEPTIONS.

(O) (D) One may be inoperative provided:

- a. Remaining fuel in center tank is considered unusable,
- b. Center tank contains less than 500 lbs of fuel at dispatch, and
- c. **Before each flight**, Gravity Crossflow SOV is verified operative.

PLACARD.

Place a placard/sticker on the REFUEL/DEFUEL control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For a Fuel Computer Channel Inoperative, do as follows:

Before each flight:

1. On the EICAS Control Panel (ECP), push the FUEL pushbutton to access the FUEL SYNOPTIC page.
2. Press in the GRAVITY XFLOW switch on the FUEL control panel.
3. On the FUEL SYNOPTIC page, make sure that the gravity crossflow valve legend is OPEN. Otherwise, dispatch is not permitted.
4. Configure the gravity crossflow valve as per normal procedure.

• Note •

Gravity crossflow is sensitive to sideslip.

• Note •

Refer to POH Chapter 5 (Supplemental) FUEL GRAVITY XFLOW for procedures on maintaining fuel balance in flight.

• Note •

The “FUEL CH 1 or 2 FAIL” status message will come into view continuously on the EICAS secondary page.**(D) DISPATCH.**

RAMP Fuel must be less than 15,080 lbs.

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MEL	Magnetic Level Indicators	Repair Category	Quantity Installed	Minimum Required
28-41-04		C	5	0
REMARKS AND EXCEPTIONS.				
All may be inoperative provided associated EICAS Fuel Tank Quantity Readouts are operative.				
PLACARD. Place a placard/sticker on the Refuel/Defuel Control panel and on the Fuel Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Fuel Pitch and Roll Inclinometers	Repair Category	Quantity Installed	Minimum Required
28-41-05		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided all EICAS Fuel Tank Quantity Readouts (Left, Right, Center and Total) are operative.				
PLACARD. Place a placard/sticker on the bulkhead behind the co-pilot's seat.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Repair Category	Quantity Installed	Minimum Required
29-11-01-2	A	2	1

REMARKS AND EXCEPTIONS.

(M) (O) One may be inoperative provided:

- a. Same side Hydraulic AC Motor Pump (ACMP) is operated continuously during flight,
- b. All Hydraulic AC Motor Pumps (ACMP) are operative,
- c. Affected pump is mechanically removed and a blanking plate is installed,
- d. Flexible hydraulic lines at the pylon quick-disconnects are disconnected, capped, stowed,
- e. Repairs are made within one flight day.

PLACARD.

Place a placard/sticker on the Hydraulic Control panel.

(M) MAINTENANCE.

For an inoperative EDP, do as follows:

1. Do the deactivation of the EDP (refer to AMM TASK 29-11-01-040-801).

• Note •

When the deactivation procedure is completed, the HYD EDP 1A (HYD EDP 2A) caution message may come into view continuously on the EICAS primary page.

2. Inform operations of the removed EDP weight and balance change, -14.96 lbs and -15,950 inch lbs (moment arm).

(O) OPERATIONS.

On the Hydraulic Control panel, set the Hydraulic AC Motor Pumps (ACMP) of the affected side to ON.

• Note •

The EDP Output Flow Line associated to the removed EDP may appear green on the EICAS Hydraulic synoptic page.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Hydraulic Heat Exchanger Cooling Fan	Repair Category	Quantity Installed	Minimum Required
29-11-03		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided hydraulic temperature of #1 and #2 systems on the synoptic page is monitored not to exceed 96°C during ground operations.				
PLACARD. Place a placard/sticker below the EICAS secondary display.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Hydraulic Switches "AUTO" Function (AC Motor Pumps)	Repair Category	Quantity Installed	Minimum Required
29-11-04		C	3	0
REMARKS AND EXCEPTIONS.				
(O) All may be inoperative provided affected pumps are manually selected ON before each takeoff and landing.				
PLACARD. Place a placard/sticker on the Hydraulic Control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Before each takeoff and landing, select the affected pump switch(es) to the ON position.				
(D) DISPATCH. Not required.				
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MEL	Hydraulic Accumulator Pressure Gauges (Systems 1, 2, and 3)	Repair Category	Quantity Installed	Minimum Required
29-11-05		C	3	0

REMARKS AND EXCEPTIONS.

(M) All may be inoperative provided accumulator pre-charge pressure is checked using a suitable ground gauge each flight day.

PLACARD.

Place a placard/sticker on the Hydraulic Control panel and on the affected Hydraulic Servicing panel.

(M) MAINTENANCE.

Each flight day use a suitable pressure gauge to check the accumulator pre-charge pressure before the next flight after failure occurrence (Hydraulic Accumulator Pressure Gauge(s) is found inoperative). If during C Category interval, a Maintenance Task on the Hydraulic Accumulator is scheduled per Operator's Maintenance Schedule; use a suitable pressure gauge to check the accumulator pre-charge pressure (refer to AMM TASK 12-12-29-614-801).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Hydraulic Accumulators (Systems 1 and 2)	Repair Category	Quantity Installed	Minimum Required
29-11-06		B	2	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the Hydraulic Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Repair Category	Quantity Installed	Minimum Required
29-11-08-2	A	2	1

REMARKS AND EXCEPTIONS.

(M) One may be inoperative provided:

- a. Affected hydraulic firewall SOV is deactivated,
- b. Same side Engine Driven Pump (EDP) is considered inoperative,
- c. Engine Driven Pump (EDP) on the opposite side is operative, and
- d. Repairs are made within one flight day.

• Note •

Same side Engine Driven Pump (EDP) must be deferred under MEL 29-11-01-2.

PLACARD.

Place a placard/sticker on the Hydraulic Control panel.

(M) MAINTENANCE.

For an inoperative system hydraulic firewall SOV, do as follows:

1. Open and collar the circuit breaker that follows for the No. 1 Hydraulic System:

CB PANEL: **CBP-1 LOWER**

CB NO: **R6**

NAME: **HYD SOV L ENG**

ZONE: **221**

OR

Open and collar the circuit breaker that follows for the No. 2 Hydraulic System:

CB PANEL: **CBP-1 LOWER**

CB NO: **R5**

NAME: **HYD SOV R ENG**

ZONE: **221**

2. Do the deactivation of the Engine Driven Pump (EDP) (refer to AMM TASK 29-11-01-040-801).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Hydraulic AC Motor Pump (ACMP) 3A	Repair Category	Quantity Installed	Minimum Required
29-12-01-2		A	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) May be inoperative provided:

- Hydraulic AC Motor Pump 3B is operated continuously during flight,
- All other hydraulic pumps are operative

• Note •

CAT II System must be deferred per ACI 90-10-04.

- CAT II and CAT III operations are prohibited.
- Operations are conducted in accordance with AFM Supplement (Operations with Airplane Systems Inoperative), accomplished with AeroData TLR and
- Repairs are made within one flight day.

PLACARD.

Place a placard/sticker on the Hydraulic Control panel.

(M/FC) MAINTENANCE.

For an inoperative system 3A ACMP, do as follows:

- On the Hydraulic Control panel select the system 3A ACMP switch to the OFF Position.
- Open and collar the circuit breaker that follows:

CB PANEL: **CBP-2**CB NO: **F14**NAME: **HYD SYST AC PUMP CONT 3A**ZONE: **222**

• Note •

Make sure that there is no hydraulic fluid leakage after the deactivation is completed.

(O) OPERATIONS.

For an inoperative ACMP 3A, do as follows:

- On the Hydraulic Control panel, do as follows:
 - Set the 3A switch to OFF.
 - Set the 3B switch to ON.

• Note •

The Landing Gear operates slower than normal with the ACMP 3A pump inoperative and the GEAR DISAGREE warning message may come into view on the EICAS primary page. If the message comes out of view in 20 seconds, no action is required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	EICAS Hydraulic Pressure Readouts (Systems 1, 2 and 3)	Repair Category	Quantity Installed	Minimum Required
29-31-01		C	3	0

REMARKS AND EXCEPTIONS.

(O) All may be inoperative provided associated pressure switches are operative.

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative EICAS hydraulic system pressure readout (system 1), do as follows:

1. Start the left engine.
2. On the HYDRAULIC control panel select the ACMP 1B to ON.
3. On the EICAS primary display, make sure that the caution messages that follow are not shown:
 - a. HYD EDP 1A
 - b. HYD PUMP 1B
4. Keep the ACMP 1B switch to ON throughout the flight.

For an inoperative EICAS hydraulic system pressure readout (system 2), do as follows:

1. Start the right engine.
2. On the HYDRAULIC control panel select the ACMP 2B to ON.
3. On the EICAS primary display, make sure that the caution messages that follow are not shown:
 - a. HYD EDP 2A
 - b. HYD PUMP 2B
4. Keep the ACMP 2B switch to ON throughout the flight.

For an inoperative EICAS hydraulic system pressure readout (system 3), do as follows:

1. Energize the aircraft electrical power systems.
2. On the HYDRAULIC control panel select the ACMP 3A to ON.
3. On the HYDRAULIC control panel select the ACMP 3B to ON.
4. On the EICAS primary display, make sure that the caution messages that follow are not shown:
 - a. HYD PUMP 3A
 - b. HYD PUMP 3B
5. Keep the ACMP 3B switch to ON throughout the flight.

(D) DISPATCH.

Not required.

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MEL	EICAS Hydraulic Reservoir Quantity Readouts (Systems 1, 2, and 3)	Repair Category	Quantity Installed	Minimum Required
29-32-01		C	3	0

REMARKS AND EXCEPTIONS.

(M) (O) All may be inoperative provided quantity in associated reservoir(s) is checked on reservoir sight glass before each flight.

PLACARD.

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.**Before Each Flight:****WARNING**

Obey all the Hydraulic Safety Precautions when you do work on the Hydraulic System and/or a Hydraulic System Component. If you DO NOT do this, you can cause injury to persons and/or damage equipment.

For an inoperative EICAS hydraulic Reservoir quantity readout, system 1 and/or 2, do as follows:

1. Check quantity in associated reservoir using sight glass
(Refer to AMM TASK 12-12-29-611-801-A01).

For an inoperative EICAS hydraulic reservoir quantity readout, system 3, do as follows:

1. Check quantity in associated reservoir using sight glass
(Refer to AMM TASK 12-12-29-611-802-A01).

(O) OPERATIONS.**• Note •**

Before each flight, ensure that the (M) Maintenance procedure has been accomplished.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Hydraulic Pump Low Pressure Switches (Systems 1, 2 and 3)	Repair Category	Quantity Installed	Minimum Required
29-34-01		C	6	3
REMARKS AND EXCEPTIONS.				
(O) Three may be inoperative provided:				
<ul style="list-style-type: none"> a. At least one Low Pressure Switch is operative for each Hydraulic System. b. Hydraulic AC motor pump(s) B of the associated system(s) is operated continuously throughout flight, and c. Associated Hydraulic Pressure and Quantity Readouts are monitored during flight. 				
PLACARD.				
Place a placard/sticker below the EICAS Secondary display.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
For an inoperative Low Pressure Switch, do as follows:				
<ol style="list-style-type: none"> 1. Place the affected side Hydraulic AC Motor Pump (ACMP) toggle switch to ON. 2. Monitor the system pressure. 				
(D) DISPATCH.				
Not required.				
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MEL	Repair Category	Quantity Installed	Minimum Required
30-12-01	C	2	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) Both may be inoperative provided:

- a. Valves are secured CLOSED,
- b. Operations are not conducted in known or forecast icing conditions, and
- c. Both Ice Detection Systems are operative.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

For an inoperative wing anti-ice modulating and SOV(s), do as follows:

1. Deactivate the wing anti-ice modulating and SOV in the CLOSED position (refer to AMM TASK 30-12-00-040-801).

• Note •

When the deactivation procedure is completed, the WING A/I FAULT status message will show continuously on the EICAS secondary page.

(O) OPERATIONS.**Caution**

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

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MEL	Repair Category	Quantity Installed	Minimum Required
30-12-01-3	C	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) One may be inoperative CLOSED provided:

- a. Wing Cross Bleed Valve is operative,
- b. Wing Cross Bleed selector switch is selected to the opposite side (FROM LEFT OR FROM RIGHT), and
- c. Limitations and performance adjustments for operations with airplane systems inoperative are applied.

• Note •

When the deactivation procedure is completed, the WING A/I FAULT status message will show continuously on the EICAS secondary page.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

For an inoperative wing anti-ice modulating and SOV(s), do as follows:

1. Deactivate the wing anti-ice modulating and SOV in the CLOSED position (refer to AMM TASK 30-12-00-040-801).

(O) OPERATIONS.

• Note •

Ensure that the TLR reflects performance data for WING ANTI-ICE COMPONENTS inoperative.

(D) DISPATCH.

Dispatcher will select "Wing A/I Components Inop" for take-off and landing performance data in Dispatch Monitor.

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MEL	Wing Anti-Ice Temperature Sensor Elements - Inboard/Outboard	Repair Category	Quantity Installed	Minimum Required
30-12-04-1		C	8	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. Wing Anti-Ice System is selected OFF,
- b. Operations are not conducted in known or forecast icing conditions, and
- c. Both Ice Detection Systems are operative

• Note •

Caution message(s) will revert to a status "WING A/I FAULT" upon selection of Wing Anti-Ice System to OFF.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Caution**

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

MMEL 20	END	25 OCT 19
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MEL	Wing Anti-Ice Temperature Sensor Elements - Inboard	Repair Category	Quantity Installed	Minimum Required
30-12-04-2b		C	4	2

REMARKS AND EXCEPTIONS.

(O) (D) Two elements in one sensor pair may be inoperative provided:

- a. Wing Cross Bleed Valve is operative,
- b. Wing Cross Bleed selector switch is selected to the opposite side (FROM LEFT or FROM RIGHT), and
- c. Limitations and performance adjustments for operations with airplane systems inoperative are applied.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

Ensure that the TLR reflects performance data for
WING ANTI-ICE SENSOR ELEMENTS inoperative.

(D) DISPATCH.

Dispatcher will select "Wing A/I Components Inop" for take-off and landing performance data in Dispatch Monitor.

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MEL	Wing Anti-Ice Temperature Sensor Elements - Outboard	Repair Category	Quantity Installed	Minimum Required
30-12-04-3		C	4	2

REMARKS AND EXCEPTIONS.

(O) One element per sensor pair may be inoperative.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**In Flight**

For a subsequent in-flight failure of the remaining outboard sensing element, a WING A/I SENSOR caution EICAS message will show, requiring the crew to switch the wing anti-ice system to OFF and exit icing conditions.

• Note •

When the wing anti-ice system is OFF, the message becomes
a WING A/I FAULT status message.

(D) DISPATCH.

Not required.

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MEL	Repair Category	Quantity Installed	Minimum Required
30-12-05	C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative CLOSED provided:

- a. Both Wing Anti-Ice Modulating SOVs are operative,
- b. Wing Cross Bleed Valve is secured CLOSED,
- c. Operations are not conducted in known or forecast icing conditions, and
- d. Both Ice Detection Systems are operative.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

For an inoperative Wing Cross Bleed (Isolation) Valve, do as follows:

1. Deactivate the Wing Isolation shutoff valve in the Closed position (refer to AMM TASK 30-12-00-040-802).

(O) OPERATIONS.**Caution**

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Ensure that the TLR reflects performance data for
WING CROSS BLEED VALVE inoperative open.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

1. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Dispatcher will select "Wing A/I Components Inop" for take-off and landing performance data in Dispatch Monitor.

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MEL	Repair Category	Quantity Installed	Minimum Required
30-12-05-2	C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative OPEN provided:

- a. Wing cross bleed valve is secured open, and
- b. Limitations and performance adjustments for operations with airplane systems inoperative are applied.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

For an inoperative Wing Cross Bleed (Isolation) Valve, do as follows:

1. Deactivate the Wing Isolation Shutoff Valve in the Open position (refer to AMM TASK 30-12-00-040-802).

• Note •

After the deactivation procedure is completed, the Wing Cross Bleed Valve (Anti-Ice) symbol will come into view in the closed position on the EICAS synoptic page.

When the wing anti-ice is reconfigured as per limitations of the “OPEN” case and the wing anti-ice is selected ON, only the selected side of the wing anti-ice will be shown as heated on the EICAS synoptic page, where in fact both sides are heated.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Dispatcher will select “Wing A/I Components Inop” for take-off and landing performance data in Dispatch Monitor.

MMEL 20	END	25 OCT 19
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MEL	Anti-Ice/Bleed Leak Detection Controller (AILC) Channels	Repair Category	Quantity Installed	Minimum Required
30-12-06		C	2	1
REMARKS AND EXCEPTIONS.				
One may be inoperative.				
PLACARD. Place a placard/sticker on the Anti-Ice panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Engine Cowl Anti-Ice SOVs	Repair Category	Quantity Installed	Minimum Required
30-22-01		C	2	1
REMARKS AND EXCEPTIONS.				
(M) (O) (D) One may be inoperative provided:				
<ul style="list-style-type: none"> a. Valve is secured CLOSED, b. Both Ice Detection Systems are operative, c. Operations are not conducted in known or forecast icing conditions, and d. Operations are conducted in accordance with POH Chapter 3: Limitations. 				
PLACARD. Place a placard/sticker on the Anti-Ice panel.				
(M) MAINTENANCE. For an inoperative Engine Cowl Anti-Ice SOV, do as follows:				
1. Do the deactivation of the Engine Cowl Anti-Ice SOV (refer to AMM TASK 30-22-00-040-801).				
(O) OPERATIONS.				
Caution				
Operations are not to be conducted in known or forecast icing conditions.				
• Note •				
Ensure operations are conducted in accordance with POH Chapter 3: Limitations.				
Continued				

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MEL	Engine Cowl Anti-Ice SOVs (Continued)	Repair Category	Quantity Installed	Minimum Required
30-22-01		C	2	1
<p style="text-align: center;">• Note •</p> <p>Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.</p>				
<p>(D) DISPATCH. Operations may not be conducted in known or forecast icing conditions.</p> <p style="text-align: center;">• Note •</p> <p>Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.</p>				
MMEL 20	END		25 OCT 19	

MEL	Cowl Anti-Ice Double Wall Duct Pressure Transducers	Repair Category	Quantity Installed	Minimum Required
30-22-03		C	2	1
<p>REMARKS AND EXCEPTIONS.</p> <p>(O) (D) One may be inoperative provided:</p> <ul style="list-style-type: none"> a. Associated Engine Cowl Anti-Ice SOV is selected OFF and considered inoperative, b. Both Ice Detection Systems are operative, and c. Operations are not conducted in known or forecast icing conditions. <p style="text-align: center;">• Note •</p> <p style="text-align: center;">Associated Engine Cowl Anti-Ice SOV must be deferred under MEL 30-22-01.</p>				
<p>PLACARD. Place a placard/sticker on the Anti-Ice panel.</p> <p>(M) MAINTENANCE. Not required.</p> <p>(O) OPERATIONS.</p> <div style="text-align: center; margin-top: 10px;"> Caution </div> <p style="text-align: center;">Operations are not to be conducted in known or forecast icing conditions.</p> <p style="text-align: center;">• Note •</p> <p>Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.</p>				
Continued				

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MEL	Cowl Anti-Ice Double Wall Duct Pressure Transducers (Continued)	Repair Category	Quantity Installed	Minimum Required
30-22-03		C	2	1
(D) DISPATCH.				
Operations may not be conducted in known or forecast icing conditions.				
• Note •				
Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.				
MMEL 20	END	25 OCT 19		

MEL	Probe Heaters - Pitot/Static Probe Heater	Repair Category	Quantity Installed	Minimum Required
30-31-01-1		B	2	1
REMARKS AND EXCEPTIONS.				
(M/FC) (O) (D) Except where en route operations require its use, one may be inoperative provided:				
<ul style="list-style-type: none"> a. Stand-by Pitot Head Heater is operative, b. Operations are not conducted in visible moisture (including standing water and slush) in any form, c. Operations are not conducted in known or forecast icing conditions, d. Both Ice Detection Systems are operative, and e. Operations are conducted in day VMC only. f. Operation in RVSM airspace prohibited. 				
• Note •				
RVSM status must be downgraded under ACI 90-10-01 RVSM Status.				
PLACARD.				
Place a placard/sticker on the Anti-Ice panel.				
(M/FC) MAINTENANCE.				
Do a deactivation of the inoperative Probe Heater as follows:				
1. For an inoperative pitot static probe heater, open and collar the circuit breaker that follows:				
CB PANEL: CBP-1 LOWER				
CB NO: T7				
NAME: HEATERS PITOT L				
ZONE: 221				
OR				
CB PANEL: CBP-1				
CB NO: A14				
NAME: HEATERS PITOT R				
ZONE: 221				

Continued

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MEL	Probe Heaters - Pitot/Static Probe Heater (Continued)	Repair Category	Quantity Installed	Minimum Required
30-31-01-1		B	2	1

• Note •

After deactivation procedure is completed, the L(R) PITOT HEAT caution message will show continuously on the EICAS primary page.

(O) OPERATIONS.

1. Operations in visible moisture are NOT permitted.
2. Operations in known or forecast icing conditions are NOT permitted.
3. Operations are conducted in DAY VMC only.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

The L (R) PITOT HEAT caution message may be displayed.

(D) DISPATCH.

1. Operations are not permitted in visible moisture (including standing water and slush) in any form.
2. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below

3. Operations are permitted in day VMC only.
4. Operations are not permitted in RVSM airspace; ensure flight is planned at FL280 or below.

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MEL	Probe Heaters - Pitot/Static Port Heaters	Repair Category	Quantity Installed	Minimum Required
30-31-01-2		B	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) Except where en route operations require its use, one may be inoperative provided:

- a. Operations are not conducted in visible moisture (including standing water and slush) in any form,
- b. Operations are not conducted in known or forecast icing conditions,
- c. Both Ice Detection Systems are operative, and
- d. Operations are conducted in day VMC only.
- e. Operation in RVSM airspace prohibited.

• Note •

RVSM status must be downgraded under ACI 90-10-01 RVSM Status.**PLACARD.**

Place a placard/sticker on the Anti-Ice panel.

(M/FC) MAINTENANCE.

Do a deactivation of the inoperative Probe Heater as follows:

1. For an inoperative static port heater, open and collar the circuit breaker that follows:

CB PANEL: **CBP-2 LOWER**CB NO: **S1**NAME: **HEATERS STATIC L**ZONE: **222****OR**CB PANEL: **CBP-1**CB NO: **G14**NAME: **HEATERS STATIC R**ZONE: **221**

• Note •

After the deactivation procedure is completed, the L(R) STATIC HEAT caution message will show continuously on the EICAS page.

(O) OPERATIONS.

1. Operations in visible moisture are NOT permitted.
2. Operations in known or forecast icing conditions are NOT permitted.
3. Operations are conducted in DAY VMC only.

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MEL	Probe Heaters - Pitot/Static Port Heaters (Continued)	Repair Category	Quantity Installed	Minimum Required
30-31-01-2		B	2	1
<p style="text-align: center;">• Note •</p> <p>Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.</p>				
<p style="text-align: center;">• Note •</p> <p>The L (R) STATIC HEAT caution message may be displayed.</p>				
<p>(D) DISPATCH.</p> <ol style="list-style-type: none"> Operations are not permitted in visible moisture (including standing water and slush) in any form. Operations may not be conducted in known or forecast icing conditions. 				
<p style="text-align: center;">• Note •</p> <p>Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below</p>				
<ol style="list-style-type: none"> Operations are permitted in day VMC only. Operations are not permitted in RVSM airspace; ensure flight is planned at FL280 or below. 				
MMEL 20	END	25 OCT 19		

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MEL	Probe Heaters - Angle of Attack Vane Heaters	Repair Category	Quantity Installed	Minimum Required
30-31-01-3		B	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) One may be inoperative provided:

- a. Operations are not conducted in visible moisture (including standing water and slush), in any form,
- b. Operations are not conducted in known or forecast icing conditions,
- c. Both Ice Detection Systems are operative, and
- d. Operations are conducted in day VMC.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M) MAINTENANCE.

Do a deactivation of the inoperative Probe Heater as follows:

1. For an inoperative Angle of Attack Vane Heater, open and collar the circuit breaker follows:

CB PANEL: **CBP-1 LOWER**CB NO: **T8**NAME: **HEATERS AOA L**ZONE: **221****OR**CB PANEL: **CBP-1**CB NO: **A13**NAME: **HEATERS AOA R**ZONE: **221****• Note •**

After the deactivation procedure is completed, the L(R) AOA HEAT caution message will show continuously on the EICAS primary page.

Continued

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MEL	Probe Heaters - Angle of Attack Vane Heaters (Continued)	Repair Category	Quantity Installed	Minimum Required
30-31-01-3		B	2	1

(O) OPERATIONS.

1. Operations in visible moisture are NOT permitted.
2. Operations in known or forecast icing conditions are NOT permitted.
3. Operations are conducted in DAY VMC only.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

The L (R) AOA HEAT caution messages may be displayed.

(D) DISPATCH.

1. Operations are not permitted in visible moisture (including standing water and slush) in any form.
2. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below

3. Operations are permitted in day VMC only.

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MEL	Probe Heaters - TAT Probe Heater	Repair Category	Quantity Installed	Minimum Required
30-31-01-4b		B	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) May be inoperative provided:

- a. Operations are not conducted in visible moisture (including standing water and slush) in any form.
- b. Operations are not conducted in known or forecast icing conditions,
- c. Both Ice Detection Systems are operative,
- d. Operations are conducted in day VMC only, and
- e. Both engines T2 sensors and T2 heaters are operative.
- f. Operation in RVSM airspace is prohibited.

• Note •

RVSM status must be downgraded under ACI 90-10-01 RVSM Status.**PLACARD.**

Place a placard/sticker on the Anti-Ice panel.

(M/FC) MAINTENANCE.

Do a deactivation of the inoperative Probe Heater as follows:

1. For an inoperative TAT heater, open and collar the circuit breaker that follows:

CB PANEL: **CBP-1**CB NO: **A12**NAME: **HEATERS TAT**ZONE: **221**

• Note •

After the deactivation procedure is completed, the TAT PROBE HEAT caution message will show continuously on the EICAS primary page.**(O) OPERATIONS.**

• Note •

Operations are not to be conducted in visible moisture (including standing water and slush) in any form, or into known or forecast icing conditions. Operations shall be conducted in day VMC only.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.**Continued**

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MEL	Probe Heaters - TAT Probe Heater (Continued)	Repair Category	Quantity Installed	Minimum Required
30-31-01-4b		B	1	0

(D) DISPATCH.

1. Operations are not permitted in RVSM airspace.
2. Operations are not permitted in visible moisture (including standing water and slush) in any form.
3. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

The TAT PROBE HEAT caution message will show continuously on the EICAS primary page.

4. Operations are permitted in day VMC only.

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MEL	Probe Heaters - Standby Pitot Head Heater	Repair Category	Quantity Installed	Minimum Required
30-31-01-6		B	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) May be inoperative provided:

- a. Operations are not conducted in visible moisture (including standing water and slush) in any form.
- b. Operations are not conducted in known or forecast icing conditions,
- c. Both Ice Detection Systems are operative,
- d. Operations are conducted in day VMC only, and
- e. Operation in RVSM airspace prohibited.

• Note •

RVSM status must be downgraded under ACI 90-10-01 RVSM Status.**PLACARD.**

Place a placard/sticker on the Anti-Ice panel.

(M/FC) MAINTENANCE.

Do a deactivation of the inoperative Probe Heater as follows:

1. For an inoperative stand-by pitot head heater, open and collar the circuit breaker that follows:

CB PANEL: **CBP-1 LOWER**CB NO: **T9**NAME: **HEATERS PITOT STBY**ZONE: **221**

• Note •

After the deactivation procedure is completed, the STBY PITOT HEAT caution message will show continuously on the EICAS primary page.**(O) OPERATIONS.**

1. Operations in visible moisture are NOT permitted.
2. Operations in known or forecast icing conditions are NOT permitted.
3. Operations are conducted in DAY VMC only.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

The STBY PITOT HEAT and/or PITOT BASE HEAT caution messages may be displayed.**Continued**

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MEL	Probe Heaters - Standby Pitot Head Heater (Continued)	Repair Category	Quantity Installed	Minimum Required
30-31-01-6		B	1	0

(D) DISPATCH.

1. Operations are not permitted in visible moisture (including standing water and slush) in any form.
2. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below

3. Operations are permitted in day VMC only.
4. Operations are not permitted in RVSM airspace; ensure flight is planned at FL280 or below

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MEL	Probe Heaters - Engine T2 Probe Heater	Repair Category	Quantity Installed	Minimum Required
30-31-01-7		B	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) One may be inoperative provided:

- a. Operations are not conducted in visible moisture (including standing water and slush) in any form,
- b. Operations are not conducted in known or forecast icing conditions,
- c. Both Ice Detection Systems are operative, and
- d. Operations are conducted in day VMC conditions only.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M/FC) MAINTENANCE.

Do a deactivation of the inoperative probe heater as follows:

1. For an inoperative Engine T2 heater, open and collar the circuit breaker that follows:

CB PANEL: **CBP-2 LOWER**

CB NO: **S8**

NAME: **T2 HEATER L**

ZONE: **222**

OR

CB PANEL: **CBP-2**

CB NO: **N8**

NAME: **T2 HEATER R**

ZONE: **222**

Continued

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MEL	Probe Heaters - Engine T2 Probe Heater (Continued)	Repair Category	Quantity Installed	Minimum Required
30-31-01-7		B	2	1

• Note •

After the deactivation procedure is completed, the L(R) ENG TAT HEAT caution message will show continuously on the EICAS primary page after the affected engine is shutdown.

(O) OPERATIONS.**Caution**

Operations are not to be conducted in visible moisture (including standing water and slush) in any form, or into known or forecast icing conditions. Operations shall be conducted in day VMC only.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

The L(R) ENG TAT HEAT caution message will show continuously on the EICAS primary page that the affected engine is shutdown.

(D) DISPATCH.

1. Operations are not permitted in visible moisture (including standing water and slush) in any form.
2. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below

3. Operations are permitted in day VMC only.

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MEL	Air Data Sensor Heater Controllers	Repair Category	Quantity Installed	Minimum Required
30-31-02		B	3	2

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) One may be inoperative provided:

- a. Operations are not conducted in visible moisture (including standing water and slush) in any form,
- b. Operations are not conducted in known or forecast icing conditions,
- c. Both Ice Detection Systems are operative,
- d. Operations are conducted in day VMC only, and
- e. Operation in RVSM airspace prohibited.

• Note •

RVSM status must be downgraded under ACI 90-10-01 RVSM Status.**PLACARD.**

Place a placard/sticker on the Anti-Ice panel.

(M/FC) MAINTENANCE.

Do a deactivation of the inoperative Air Data Sensor Heater controller as follows:

1. For an inoperative Air Data Sensor Heater Controller 1, open and collar the circuit breaker that follows:

CB PANEL: **CBP-2 LOWER**CB NO: **S2**NAME: **HEATERS ADS CONT 1**ZONE: **222**

• Note •

When the deactivation procedure is completed, the L PITOT HEAT, L STATIC HEAT and L AOA HEAT caution messages will come into view continuously on the EICAS primary page.

2. For an inoperative Air Data Sensor Heater Controller 2, open and collar the circuit breaker that follows:

CB PANEL: **CBP-1**CB NO: **G13**NAME: **HEATERS ADS CONT 2**ZONE: **221**

• Note •

When the deactivation procedure is completed, the R PITOT HEAT, R STATIC HEAT, R AOA HEAT, and TAT PROBE HEAT caution messages will come into view continuously on the EICAS primary page.

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MEL	Air Data Sensor Heater Controllers (Continued)	Repair Category	Quantity Installed	Minimum Required
30-31-02		B	3	2
3. For an inoperative Air Data Sensor Heater Controller 3, open and collar the circuit breaker that follows:				
CB PANEL: CBP-2 LOWER				
CB NO: S3				
NAME: HEATER ADS CONT STBY				
ZONE: 222				
• Note •				
When the deactivation procedure is completed, the STBY PITOT HEAT caution message will come into view continuously on the EICAS primary page.				
(O) OPERATIONS.				
1. Operations in visible moisture are NOT permitted.				
2. Operations in known or forecast icing conditions are NOT permitted.				
3. Operations are conducted in DAY VMC only.				
• Note •				
Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.				
• Note •				
The L(R) AOA HEAT, L(R) PITOT HEAT, PITOT BASE HEAT, L(R) STATIC HEAT, STBY PITOT HEAT and/or TAT PROBE HEAT caution messages for the inoperative Controller may be displayed.				
(D) DISPATCH.				
1. Operations are not permitted in visible moisture (including standing water and slush) in any form.				
2. Operations may not be conducted in known or forecast icing conditions.				
• Note •				
Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below				
3. Operations are permitted in day VMC only.				
4. Operations are not permitted in RVSM airspace; ensure flight is planned at FL280 or below.				
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30 OCT 20

MEL	Windshield and Side Window Anti-Ice Systems	Repair Category	Quantity Installed	Minimum Required
30-41-01		C	4	3

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) One may be inoperative provided:

- a. Affected anti-ice controller is deactivated
- b. Operations are not conducted in known or forecast icing conditions, and
- c. Captain's (left) side window heating is operative.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M/FC) MAINTENANCE.

Do the deactivation of the inoperative controller as follows:

1. For a left Windshield Anti-Ice Controller inoperative, open and collar the circuit breakers that follow:

CB PANEL: **CBP-1**
 CB NO: **G12**
 NAME: **HEATERS CONT L WSHLD**
 ZONE: **221**

CB PANEL: **CBP-1**
 CB NO: **A10**
 NAME: **HEATERS L WSHLD**
 ZONE: **221**

CB PANEL: **CBP-1**
 CB NO: **A11**
 NAME: **HEATERS L WSHLD**
 ZONE: **221**

• Note •

After the deactivation procedure is completed, the L WSHLD HEAT caution message will show on the EICAS primary page.

2. For a right Side Window Anti-Ice Controller, open and collar the circuit breakers that follow:

CB PANEL: **CBP-2**
 CB NO: **G14**
 NAME: **HEATERS CONT R WIND**
 ZONE: **222**

CB PANEL: **CBP-2**
 CB NO: **C7**
 NAME: **HEATER R WIND**
 ZONE: **222**

Continued

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MEL	Windshield and Side Window Anti-Ice Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-41-01		C	4	3

• Note •

After the deactivation procedure is completed, the R WINDOW HEAT caution message will show on the EICAS primary page.

3. For a right Windshield Anti-Ice Controller inoperative, open and collar the circuit breakers that follow:

CB PANEL: **CBP-2**

CB NO: **G13**

NAME: **HEATER CONT R WSHLD**

ZONE: **222**

CB PANEL: **CBP-2**

CB NO: **A10**

NAME: **HEATERS R WSHLD**

ZONE: **222**

CB PANEL: **CBP-2**

CB NO: **A11**

NAME: **HEATERS R WSHLD**

ZONE: **222**

• Note •

After the deactivation procedure is completed, the R WSHLD HEAT caution message will show on the EICAS primary page.

Make sure that heating on the pilot's side window is operative as follows:

- On the ANTI-ICE control panel, push the TEST pushbutton for less than one second.
- On the EICAS primary page, make sure that the L WINDOW HEAT caution message shows for approximately 10 seconds and then goes off.

(O) OPERATIONS.**• Note •**

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

The L(R) WSHLD HEAT and/or the R WINDOW HEAT caution messages may be displayed.

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MEL	Windshield and Side Window Anti-Ice Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-41-01		C	4	2

(D) DISPATCH.

1. Operations are not permitted in visible moisture (including standing water and slush) in any form.
2. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M/FC) (O) (D) Two may be inoperative provided:

- a. Affected anti-ice controllers are deactivated.
- b. Operations are not conducted in known or forecast icing conditions.
- c. Captains (Left) side window heating is operative, and
- d. Both Ice Detection Systems are operative.

PLACARD.

Place a placard/sticker on the Anti-Ice panel.

(M/FC) MAINTENANCE.

Do the deactivation of the inoperative controller as follows:

1. For a left Windshield Anti-Ice Controller inoperative, open and collar the circuit breakers that follow:

CB PANEL: **CBP-1**CB NO: **G12**NAME: **HEATERS CONT L WSHLD**ZONE: **221**CB PANEL: **CBP-1**CB NO: **A10**NAME: **HEATERS L WSHLD**ZONE: **221**CB PANEL: **CBP-1**CB NO: **A11**NAME: **HEATERS L WSHLD**ZONE: **221**

• Note •

After the deactivation procedure is completed, the L WSHLD HEAT caution message will show on the EICAS primary page.

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MEL	Windshield and Side Window Anti-Ice Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-41-01		C	4	2

2. For a right Side Window Anti-Ice Controller inoperative, open and collar the circuit breakers that follow:

CB PANEL: **CBP-2**CB NO: **G14**NAME: **HEATERS CONT R WIND**ZONE: **222**CB PANEL: **CBP-2**CB NO: **C7**NAME: **HEATER R WIND**ZONE: **222****• Note •**

After the deactivation procedure is completed, the R WINDOW HEAT caution message will show on the EICAS primary page.

3. For a right Windshield Anti-Ice Controller inoperative, open and collar the circuit breakers that follow:

CB PANEL: **CBP-2**CB NO: **G13**NAME: **HEATER CONT R WSHLD**ZONE: **222**CB PANEL: **CBP-2**CB NO: **A10**NAME: **HEATERS R WSHLD**ZONE: **222**CB PANEL: **CBP-2**CB NO: **A11**NAME: **HEATERS R WSHLD**ZONE: **222****• Note •**

After the deactivation procedure is completed, the R WSHLD HEAT caution message will show on the EICASE primary page.

Make sure that heating on the pilot's side window is operative as follows:

- On the ANTI-ICE control panel, push the TEST pushbutton for less than one second.
- On the EICAS primary page, make sure that the L WINDOW HEAT caution message shows for approximately 10 seconds and then goes off.

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MEL	Windshield and Side Window Anti-Ice Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-41-01		C	4	2

(O) OPERATIONS.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

• Note •

The L(R) WSHLD HEAT and/or the R WINDOW HEAT caution messages may be displayed.

(D) DISPATCH.

1. Operations are not permitted in visible moisture (including standing water and slush) in any form.
2. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below

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MEL	LH Side Window Heating System	Repair Category	Quantity Installed	Minimum Required
30-41-02		A	1	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. Affected anti-ice controller is deactivated,
- b. Operations are not conducted in known or forecast icing conditions, and
- c. Repairs are made within 1 flight-day.

PLACARD.

Put a LH SIDE WINDOW ANTI-ICE CONTROLLER INOPERATIVE placard on the ANTI-ICE panel.

(M) MAINTENANCE.

Do a deactivation of the inoperative LH side window anti-ice controller as follows:

1. Open and collar the circuit breakers that follow:

CB PANEL: **CBP-1**CB NO: **U10**NAME: **HEATER L WIND**ZONE: **221**CB PANEL: **CBP-2**CB NO: **S4**NAME: **HEATER CONT L WIND**ZONE: **222****(O) OPERATIONS.**

Not required.

(D) DISPATCH.

Not required.

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REVISION 10

30 OCT 20

MEL	Windshield Wiper System	Repair Category	Quantity Installed	Minimum Required
30-42-01		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. Position of the affected wiper blade is acceptable to the associated pilot, and
- b. Any function that operates normally may be used.
- c. At least one function must operate on both sides for CAT II operations.
- d. Operations in active de/anti icing events not authorized.

• Note •

If one function does not operate on each side the
CAT II status must be downgraded under ACI 90-10-04 CAT II Status.

• Note •

If wiper is not in the parked position airspeed is limited to 250 KIAS.

PLACARD.

Place a placard/sticker on both the Captain's and First Officer's Wiper/Stall panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

If wiper is not in the parked position airspeed is limited to 250 KIAS.

(D) DISPATCH.

1. If wiper is NOT in the parked position, airspeed is limited to 250KIAS.
2. When calculating release, in FPCFP, under DP-Perf, type 250KIAS. This will calculate release at 250kts. Verify on release under SPEED SCHEDULE that climb, cruise and decent read as follows: CLIMB 250/M70, CRUISE 250KIAS, DESCENT M70/250.

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MEL	Repair Category	Quantity Installed	Minimum Required
30-71-02	C	2	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. Associated sink is not used, and
- b. Sink and/or coffee water supply is turned OFF.

PLACARD.**Inoperative FWD Drain Mast Heater:**

1. Place a placard/sticker on the Potable Water System Control panel.
2. Place a DO NOT USE SINK placard/sticker on the galley sink.
3. If the aircraft has a forward lavatory, put a DO NOT USE SINK placard/sticker on the lavatory sink.

Inoperative AFT Drain Mast Heater:

1. Place a placard/sticker on the Potable Water System Control panel.
2. Place a DO NOT USE SINK placard/sticker on the lavatory sink.

(M) MAINTENANCE.

For an inoperative forward drain mast heater, do as follows:

1. Drain the forward water system (refer to TASK 12-18-38-613-801).
2. On the forward galley POTABLE WATER SYSTEM control panel, put the FWD ON/OFF switch to OFF.
3. On the POTABLE WATER SYSTEM panel, open and tag the circuit breaker that follow: FWD DRAIN MAST
4. Put the forward galley manual water supply SOV to CLOSED.
5. If the aircraft has a forward lavatory, put the forward lavatory manual water supply SOV to CLOSED.

For an inoperative aft drain mast heater, do as follows:

1. Drain the aft water system (refer to TASK 12-18-38-613-803).
2. On the forward galley POTABLE WATER SYSTEM control panel, put the AFT ON/OFF switch to OFF.
3. On the POTABLE WATER SYSTEM panel, open and tag the circuit breaker that follow: AFT DRAIN MAST
4. If the aircraft has an aft galley, put the aft galley manual water supply SOV to CLOSED.
5. If the aircraft has an aft lavatory, put the aft lavatory manual water supply SOV to CLOSED.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Repair Category	Quantity Installed	Minimum Required
30-81-01	C	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) One may be inoperative provided:

- a. Wing and cowl anti-ice systems are turned ON when icing conditions as defined in the POH exist or are anticipated, and
- b. The remaining ice detector is verified operative once per flight day.

• Note •

**POH Ice Detection Systems test
(First Flight of the Day - Prior to Start, Originating Check) is waived.**

PLACARD.

Place a placard/sticker on the ANTI-ICE panel.

(M) MAINTENANCE.

For one inoperative ice detection system, do as follows:

1. For ice detection system 1 inoperative, open and collar the circuit breaker that follows:

CB PANEL: **CBP-1 LOWER**
 CB NO: **T11**
 NAME: **ICE DET 1**
 ZONE: **221**

• Note •

When the deactivation procedure for Ice Detector 1 is completed (one ice detector inoperative), the ICE DET 1 FAIL status message will show continuously on the EICAS secondary page.

2. For ice detection system 2 inoperative, open and collar the circuit breaker that follows:

CB PANEL: **CBP-2**
 CB NO: **A14**
 NAME: **ICE DET 2**
 ZONE: **222**

• Note •

When the deactivation procedure for Ice Detector 2 is completed (one ice detector inoperative), ICE DET 2 FAIL status message will show continuously on the EICAS secondary page.

Continued

MEL	Ice Detection Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-81-01		C	2	1

Once per flight day:

- For one Ice Detector inoperative, do the procedure that follows:

Caution

Wear protective gloves when you hold the ice detector strut and remove your hand immediately when the ice caution message shows on the EICAS. The ice detector gets very hot and can cause burns.

Caution

**DO NOT USE TOOLS WHEN YOU DO THE HOLD TEST,
OTHERWISE YOU CAN DAMAGE THE ICE DETECTOR.**

- When the deactivation for Ice Detector 1 or 2 is completed, hold the operative ice detector probe located at FS229.00.
- Make sure that the ICE caution message shows on the EICAS primary page.

• Note •

If the ICE caution message does not show, refer to the limitation for both ice detection systems inoperative.

- If the ICE message does not show on the EICAS primary page, do the alternate procedure that follows:

Left ice detector inoperative

- When the left ice detector is inoperative, make sure that the right ice detector is operative as follows:
 - Make sure that circuit breaker T11 located on CBP-1 LOWER for system 1 is pulled and tagged.
 - Open the access door that follows:
 - Panel - 811
 - Name - Main Avionics Compartment
 - At EICAS routing unit 1 (JB8), find connector JB8J8.
 - Remove the protective cap from connector JB8J8.
 - At JB8J8, insert a GND signal at pins 60 and 63.
 - Do the ice detection system test as follows:
 - On the ANTI-ICE control panel, push the ICE switch/light.
 - Make sure that the ICE caution message shows on the EICAS primary page during the test cycle.

Continued

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30 OCT 20

MEL		Repair Category	Quantity Installed	Minimum Required
30-81-01	Ice Detection Systems (Continued)	C	2	1

• Note •

If the ICE caution message does not show, refer to the limitation for both ice detection systems inoperative.

7. At JB8J8, remove the jumper from pins 60 and 63.
8. Install the protective cap on the connector JB8J8.
9. Close the access door that follows:
 - a. Panel - 811
 - b. Name - Main Avionics Compartment
 - c. Right ice detector inoperative
- b. When the right ice detector is inoperative, make sure that the left ice detector is operative as follows:
 1. Make sure that circuit breaker A14 located on CBP-2 for system 2 is pulled and tagged.
 2. Open the access door that follows:
 - a. Panel - 811
 - b. Name - Main Avionics Compartment
 3. At EICAS routing unit 2 (JB9), find connector JB9J8.
 4. Remove the protective cap from connector JB9J8.
 5. At JB9J8, insert a GND signal at pins 60 and 63.
 6. Do the ice detection system test as follows:
 - a. On the ANTI-ICE control panel, push the ICE switch/light.
 - b. Make sure that the ICE caution message shows on the EICAS primary page during the test cycle.

• Note •

If the ICE caution message does not show, refer to the limitation for both ice detection systems inoperative.

7. At JB9J8, remove the jumper from pins 60 and 63.
8. Install the protective cap on the connector JB9J8.
9. Close the access door that follows:
 - a. Panel - 811
 - b. Name - Main Avionics Compartment

Continued

MEL	Ice Detection Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-81-01		C	2	1

(O) OPERATIONS.**• Note •**

When the deactivation procedure for Ice Detector 1 is completed, the “ICE DET 1 FAIL” status message will be displayed continuously on the EICAS secondary page.

• Note •

When the deactivation procedure for Ice Detector 2 is completed, the “ICE DET 2 FAIL” status message will be displayed continuously on the EICAS secondary page.

• Note •

When the deactivation procedure for one ice detector is completed, the “ICE” caution message will not come into view on the EICAS primary page during the ice detection system test.

(D) DISPATCH.

Ensure the TLR reflects data for “Wing and Cowl Anti-Ice System ON” in dispatch monitor, when icing conditions as defined in the POH exist or are anticipated.

- OR OPTION 2 -

Repair Category	Quantity Installed	Minimum Required
A	2	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) Both may be inoperative provided:

- Operations are not conducted in known or forecast icing conditions,
- Wing and cowl anti-ice systems are turned ON when icing conditions as defined in the POH exist or are anticipated, or when any ice buildup on the aircraft is observed, and
- Repairs are made within one flight day.

• Note •

POH Ice Detection Systems test (First Flight of the Day - Prior to Start, Originating Check) is waived.

Continued

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MEL	Ice Detection Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-81-01		A	2	0

PLACARD.

Place a placard/sticker on the ANTI-ICE panel.

(M/FC) MAINTENANCE.

For both ice detection systems inoperative, open and collar the circuit breakers that follow:

CB PANEL: **CBP-1 LOWER**

CB NO: **T11**

NAME: **ICE DET 1**

ZONE: **221**

AND

CB PANEL: **CBP-2**

CB NO: **A14**

NAME: **ICE DET 2**

ZONE: **222**

• Note •

When the deactivation procedure for both ice detectors is completed (two ice detectors inoperative), the ICE DET FAIL caution message will show continuously on the EICAS primary page.

(O) OPERATIONS.

• Note •

When the deactivation for ice detector 1 is completed, the “ICE DET FAIL” status message will show continuously on the EICAS secondary page.

• Note •

When the deactivation for ice detector 2 is completed, the “ICE DET FAIL” status message will show continuously on the EICAS secondary page.

• Note •

When the deactivation for both ice detectors is completed, the “ICE DET FAIL” caution message will show continuously on the EICAS primary page.

• Note •

When the deactivation procedure for both ice detectors is completed, the “ICE” message will not show on the EICAS during the ice detection system test.

• Note •

When the deactivation for both ice detectors is completed, the “ICE” message will not show on the EICAS if icing condition is present.

Continued

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MEL	Ice Detection Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-81-01		A	2	0

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

- Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

- Ensure the TLR reflects data for "Wing and Cowl Anti-Ice System ON" in dispatch monitor, when icing conditions as defined in the POH exist or are anticipated.

- OR OPTION 3 -**REMARKS AND EXCEPTIONS.**

(M/FC) (O) (D) Both may be inoperative provided:

- Operations are conducted during the day,
- Wing and cowl anti-ice systems are turned ON when icing conditions as defined in the POH exist or are anticipated, or when any ice buildup on the aircraft is observed, and
- Repairs are made within one flight day.

• Note •

POH Ice Detection Systems test (First Flight of the Day- Prior to Start, Originating Check) is waived.

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MEL	Ice Detection Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-81-01		A	2	0

PLACARD.

Place a placard/sticker on the ANTI-ICE panel.

(M/FC) MAINTENANCE.

For both ice detection systems inoperative, open and collar the circuit breakers that follow:

CB PANEL: **CBP-1 LOWER**

CB NO: **T11**

NAME: **ICE DET 1**

ZONE: **221**

AND

CB PANEL: **CBP-2**

CB NO: **A14**

NAME: **ICE DET 2**

ZONE: **222**

• Note •

When the deactivation procedure for both ice detectors is completed (two ice detectors inoperative), the “ICE DET FAIL” caution message will show continuously on the EICAS primary page.

(O) OPERATIONS.

• Note •

When the deactivation for ice detector 1 is completed, the “ICE DET FAIL” status message will show continuously on the EICAS secondary page.

• Note •

When the deactivation for ice detector 2 is completed, the “ICE DET FAIL” status message will show continuously on the EICAS secondary page.

• Note •

When the deactivation for both ice detectors is completed, the “ICE DET FAIL” caution message will show continuously on the EICAS primary page.

• Note •

When the deactivation procedure for both ice detectors is completed, the “ICE” message will not show on the EICAS during the ice detection system test.

Continued

MEL	Ice Detection Systems (Continued)	Repair Category	Quantity Installed	Minimum Required
30-81-01		A	2	0
• Note •				
When the deactivation for both ice detectors is completed, the "ICE" message will not show on the EICAS if icing condition is present.				
• Note •				
Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.				
(D) DISPATCH.				
<ol style="list-style-type: none"> 1. Operations are not permitted at night. 2. Ensure the TLR reflects data for "Wing and Cowl Anti-Ice System ON" in dispatch monitor, when icing conditions as defined in the POH exist or are anticipated. 				
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MEL	Master Warning Switchlights (Glareshield) (light function only)	Repair Category	Quantity Installed	Minimum Required
31-14-01		C	2	1
REMARKS AND EXCEPTIONS.				
One may be inoperative.				
PLACARD.				
Place a placard/sticker above the MASTER WARNING switchlight located on the Captain or First Officer (as applicable) glareshield.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Master Caution Switchlights (Glareshield) (light function only)	Repair Category	Quantity Installed	Minimum Required
31-14-02		C	2	1
REMARKS AND EXCEPTIONS.				
One may be inoperative.				
PLACARD.				
Place a placard/sticker above the MASTER CAUTION switchlight located on the Captain or First Officer (as applicable) glareshield.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Clocks	Repair Category	Quantity Installed	Minimum Required
31-21-01		C	2	1

REMARKS AND EXCEPTIONS.

One may be inoperative.

PLACARD.

Place a placard/sticker adjacent to the inoperative clock.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -

Repair Category	Quantity Installed	Minimum Required
A	2	0

REMARKS AND EXCEPTIONS.

(O) Both may be inoperative provided:

- a. Both the Captain and First Officer have ready access to a reliable timepiece which display seconds (a wristwatch is acceptable),
- b. Approach procedures do not require timing,
- c. FDR is considered inoperative, and
- d. Repairs are made within one flight day.

• Note •

FDR must be deferred under MEL 31-31-01.

PLACARD.

Place a placard/sticker adjacent to the inoperative clock.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For operations with both clocks inoperative, do as follows:

1. The Captain and First Officer are to synchronize their timepieces.
2. If required, update the time into the FMS as follows:
 - a. Push the INDEX key to show the INDEX page.
 - b. Push the STATUS line select key to show the STATUS display page.
 - c. Use the data keys to enter the desired time into the scratch pad.
 - d. Push the UTC line select key to transfer the scratch pad time entry to the UTC data line.

(D) DISPATCH.

Not required.

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MEL	Flight Data Recorder (FDR) System	Repair Category	Quantity Installed	Minimum Required
31-31-01		A	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided:

- a. Cockpit Voice Recorder (CVR) operates normally,
- b. Aircraft is not dispatched from a designated airport as listed in the operator's MEL unless:
 - 1. The FDR failure occurs after pushback but prior to takeoff, or
 - 2. The FDR repair was attempted but was not successful.

• Note •

PSA's designated maintenance airport is DAY.

- c. In those cases where repair is attempted but not successful, the aircraft may be dispatched on a flight or series of flights until the next designated airport where repair must be accomplished prior to dispatch, and
- d. Repairs are made within three flight days.

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Flight Data Recorder (FDR) System - FDR Recording Parameters Required by Regulations	Repair Category	Quantity Installed	Minimum Required
31-31-01-1b		A	81	78

REMARKS AND EXCEPTIONS.

Up to three recording parameters may be inoperative provided:

- a. Cockpit Voice Recorder (CVR) operates normally, and
- b. Repairs are made within 20 calendar days.
- c. Refer to Figure below for FAA Required parameters:

FAA Parameter Number	Parameter ID	FAA Parameter Number	Parameter ID
1	Time (Hour, Min, Sec)	43	Additional Engine Parameters
2	Altitude	44	TCAS
3	Airspeed	45	DME Distance
4	Heading	46	Nav 1 and 2 Selected Frequency
5	Vertical Acceleration	47	Barometric Correction
6	Pitch Attitude	48	Selected Altitude
7	Roll Attitude	49	Reference Airspeed
8	Radio Transmissions	50	Reference Mach
9	Thrust of Each Engine	51	Reference Vertical Speed
10	Auto Pilot Engage / YD Engage Status	52	Selected Heading
11	Longitudinal Acceleration	53	Selected Flight Path Angle (700 Only)
12	Control Column	54	Selected Decision Height
13	Control Wheel	55	EFIS Displays
14	Rudder Pedal	56	Multifunction/Engine Alerts Display Format
15	Elevator Position	57	Thrust Command (700 Only)
16	Aileron Position	58	Engine Thrust Target
17	Rudder Position	60	Primary Navigation System
18	Lateral Acceleration	61	Ice Detection
19	Pitch Trim Position	62	Engine Vibration Warning
20	Trailing Edge Flap Position	63	Engine Overtemp Warning
21	Leading Edge Flap Position (700 Only)	64	Engine Oil Pressure Low
22	Thrust Reverser Position	65	Engine Overspeed Warning
23	Ground Spoilers	68	Brake Pressure
24	TAT	69	Brake Pedal Applied
25	Active Lateral and Pitch Mode	71	Engine HPV and SOV Position
26	Radio Altitude	72	De-icing System Selection
27	Lateral Deviation	74	AC Electrical Bus Status
28	Vertical Deviation	75	DC Electrical Bus Status
29	Marker Beacon	76	APU Bleed Valve
30	Master Warnings	77	Hydraulic Pressure
31	Air Ground Switches	78	Loss of Cabin Pressure
32	AOA	79	Computer Failure Status
33	Hyd Pressure Low	82	Pitch Trim Surface Control (700 Only)
34	Ground Speed	83	Roll Trim Surface Control
35	GPWS	84	Yaw Trim Surface Control
36	Landing Gear Position	85	Trailing Edge Flap Control Position
37	Drift Angle	86	Leading Edge Flap Control Position (700 Only)
38	Wind Speed and Direction	87	Ground Spoiler and Speed Brake Position
39	Latitude and Longitude	88	Control Column, Control Wheel and Rudder Pedal Input Forces
40	Stick Pusher and Shaker		
41	Windshear Warning		
42	Throttle/Power Lever Position (700 Only)		

Continued

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MEL	Flight Data Recorder (FDR) System - FDR Recording Parameters Required by Regulations (Continued)	Repair Category	Quantity Installed	Minimum Required
31-31-01-1b		A	81	78
PLACARD.				
Place a placard/sticker below the secondary EICAS display.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Quick Access Recorder (QAR)	Repair Category	Quantity Installed	Minimum Required
31-31-02		D	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker below the EICAS Secondary display.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Control Panel (ECP) Discrete Buttons - ECS	Repair Category	Quantity Installed	Minimum Required
31-41-02-1		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Control Panel (ECP) Discrete Buttons - HYD	Repair Category	Quantity Installed	Minimum Required
31-41-02-2		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	EICAS Control Panel (ECP) Discrete Buttons - ELEC	Repair Category	Quantity Installed	Minimum Required
31-41-02-3		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Control Panel (ECP) Discrete Buttons - FUEL	Repair Category	Quantity Installed	Minimum Required
31-41-02-4		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Control Panel (ECP) Discrete Buttons - F/CTL	Repair Category	Quantity Installed	Minimum Required	
		B	1	0	
REMARKS AND EXCEPTIONS.					
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.					
PLACARD. Place a placard/sticker below the EICAS control panel.					
(M) MAINTENANCE. Not required.					
(O) OPERATIONS. Not required.					
(D) DISPATCH. Not required.					
MMEL 20	END	25 OCT 19			

MEL	EICAS Control Panel (ECP) Discrete Buttons - A/ICE	Repair Category	Quantity Installed	Minimum Required	
		B	1	0	
REMARKS AND EXCEPTIONS.					
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.					
PLACARD. Place a placard/sticker below the EICAS control panel.					
(M) MAINTENANCE. Not required.					
(O) OPERATIONS. Not required.					
(D) DISPATCH. Not required.					
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MEL	EICAS Control Panel (ECP) Discrete Buttons - DOORS	Repair Category	Quantity Installed	Minimum Required
31-41-02-7		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Control Panel (ECP) Discrete Buttons - SEL	Repair Category	Quantity Installed	Minimum Required
31-41-02-8		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Control Panel (ECP) Discrete Buttons - MENU	Repair Category	Quantity Installed	Minimum Required
31-41-02-9		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	EICAS Control Panel (ECP) Discrete Buttons - UP	Repair Category	Quantity Installed	Minimum Required
31-41-02-10		B	1	0
REMARKS AND EXCEPTIONS.				
Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.				
PLACARD. Place a placard/sticker below the EICAS control panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

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MEL	EICAS Control Panel (ECP) Discrete Buttons - DN	Repair Category	Quantity Installed	Minimum Required
31-41-02-11		B	1	0

REMARKS AND EXCEPTIONS.

Each may be inoperative provided PRIM, STAT, CAS and STEP buttons are verified operative.

PLACARD.

Place a placard/sticker below the EICAS control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Lamp Driver Unit Channels	Repair Category	Quantity Installed	Minimum Required
31-41-03		C	2	1

REMARKS AND EXCEPTIONS.

(M/FC) One channel may be inoperative provided:

- a. Affected channel is deactivated, and
- b. Remaining channel is tested operative.

PLACARD.

Place a placard/sticker on the instrument panel.

(M/FC) MAINTENANCE.

For an inoperative lamp drive unit channel, deactivate it as follows:

1. Open and collar the circuit breaker for the inoperative lamp driver unit as follows:

CB PANEL: **CBP-1**

CB NO: **H5**

NAME: **EICAS LDU L**

ZONE: **221**

OR

CB PANEL: **CBP-2**

CB NO: **Q8**

NAME: **EICAS LDU R**

ZONE: **222**

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Data Concentrator Unit (DCU) Fans	Repair Category	Quantity Installed	Minimum Required
31-41-04		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the instrument panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Audio Warning DCU Switch Guards	Repair Category	Quantity Installed	Minimum Required
31-41-05		C	2	1
REMARKS AND EXCEPTIONS.				
One may be inoperative provided DCU associated with operative switch guard is operative.				
PLACARD.				
Place a placard/sticker on the Co-Pilot's console.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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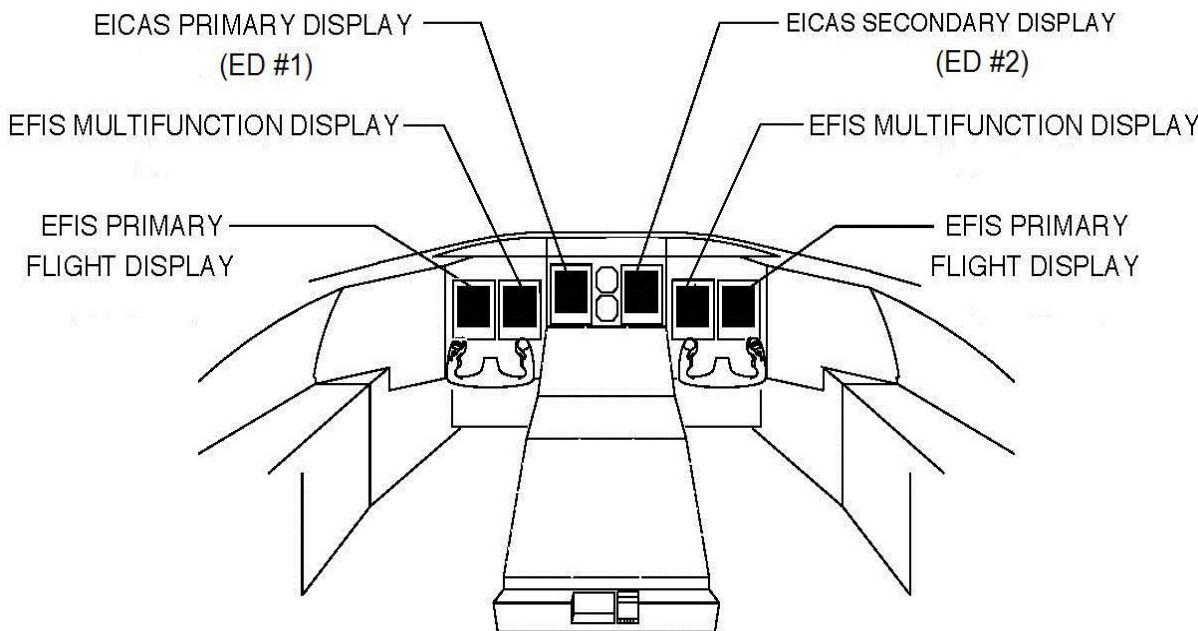
MEL	EICAS Display Units (ED #1 or ED #2)	Repair Category	Quantity Installed	Minimum Required
31-61-01		B	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative.

PLACARD.

Place a placard/sticker on the affected EICAS display unit.

**(M) MAINTENANCE.**

Not required.

(O) OPERATIONS.

The operative ED should be used to display the Primary EICAS and the MFD on the non-flying pilot side should be used to display the Secondary EICAS.

• Note •

When ED #1 is inoperative, the EICAS primary page information will automatically show on ED #2, which becomes the EICAS Primary page. Thus, the EICAS COMP INOP caution message may appear on ED #2 EICAS Primary page.

• Note •

On the source selector panel, set the EICAS source selector to the functioning ED.

(D) DISPATCH.

Not required.

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MEL	Landing Gear Retraction System	Repair Category	Quantity Installed	Minimum Required
32-30-01-2		A	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative provided:

- a. Operations are conducted in accordance with Landing Gear Down performance data,
- b. Operations are not conducted in known or forecast icing conditions,
- c. Ground lock pins are installed to ensure that all three landing gear are locked down throughout flight,
- d. Inflight performance information given in Flight Planning and Cruise Control Manual or the computerized in-flight performance (CIFP) is used,
- e. Extended overwater operations are prohibited.
- f. Both headsets are worn,
- g. Flight Compartment and Cabin Interphone Systems are operative,
- h. Both Flap Channels of the Slat Flap Electronic Control Unit are operative,
- i. Both Flap Power Drive Unit Motors are operative,
- j. Both Slat Channels of the Slat Flap Electronic Control Unit are operative
- k. Both Slat Power Drive Unit Motors are operative,
- l. Cat II operations are prohibited, and
- m. Repairs are made within one flight day.

• Note •

This deferral will be applied for Ferry Flight Gear Down requirements.

• Note •

CAT II status must be downgraded under ACI 90-10-04 CAT II Status.**PLACARD.**

Place a placard/sticker on the LDG GEAR Control Panel.

(M) MAINTENANCE.

For an inoperative landing gear retraction system, do as follows:

1. On the LDG GEAR control panel make sure the landing gear selection handle is in the DN position.
2. On the EICAS primary display, make sure that the 3 gear DN green indications are shown.

Continued

MEL	Landing Gear Retraction System (Continued)	Repair Category	Quantity Installed	Minimum Required
32-30-01-2		A	1	0

• Note •

Ensure the LDG GEAR GROUND LOCK SAFETY PIN FLAGS are removed and stowed prior to installation.

3. Install the landing gear ground lock safety pins in the nose and both of the main landing gear (refer to AMM TASK 10-11-00-400-801 and 10-11-00-400-802).

(O) OPERATIONS.

1. The Maximum airspeed during flight is VLE (220 KIAS).
2. When Takeoff performance data from ACARS is unavailable use a 2 knot additive for (V1, VR, and V2) for Flaps 8 (Corrections for Flaps 20 are not required).

• Note •

Because the landing gear is extended, tap the brakes briefly after lift-off to stop the tire rotation. Failure to do this could result in a GLD UNSAFE caution message to show on the EICAS secondary page.

• Note •

Ensure the Takeoff and Landing Report reflects performance data for Flight with Landing Gear Down.

(D) DISPATCH.

1. Complete the release as follows:
 - a. Select flight in Dispatch Monitor
 - b. Right click MTOW, then FPCFP
 - c. In the DPPIPERF box, type GEARDOWN. Select Apply, then Submit
 - d. Verify in Summary plan that CLIMB, CRUISE, and DESCENT show GEARDOWN
 - e. In AeroData, for Takeoff, select GEAR EXTENDED.
 - f. In AeroData, for Landing, under MISC COMPONENTS OPERATIVE, select LANDING GEAR EXTENDED
 - g. Complete release as normal
2. Operations may not be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

3. When calculating release, in FPCFP, under DP-Perf, type GEARDOWN. Verify the release shows GEARDOWN for CLIMB, CRUISE and DESCENT when running the fuel plan.

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MEL	Landing Gear Selector Handle	Repair Category	Quantity Installed	Minimum Required
32-31-01	Anti-Retraction Mechanism	C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative in the LOCKED position (down) provided downlock release mechanism is verified operative.

PLACARD.

Place a placard/sticker on the LDG GEAR control panel.

(M) MAINTENANCE.

For an inoperative landing gear selector handle anti-retraction mechanism, do as follows:

1. Energize the aircraft electrical power systems.
2. On the LDG GEAR Control Panel make sure the landing gear selection handle is in the DN position.
3. On the EICAS Primary display, make sure that the 3 gear DN green indications are shown.
4. Install the landing gear ground lock safety pins in the nose and both of the main landing gear (refer to AMM TASK 10-11-00-400-801 and 10-11-00-400-802).
5. On the HYDRAULIC Control Panel, make sure that the switches for ACMP 2, 3A and 3B are in the OFF position.
6. On the EICAS control panel, press the HYD discrete button. On the secondary EICAS screen make sure that the system 3 hydraulic pressure is 0 psi.
7. On the LDG GEAR Control Panel, push the DN LCK REL button and move the selector handle to the UP position. Make sure that the selector handle moves freely.
8. Move the selector handle to the DN position. Make sure that the handle moves freely and that the handle locks in the DN position.
9. Pressurize the hydraulic system 3. On the EICAS primary display, make sure that the 3 gear DN green indications are shown. Depressurize hydraulic system 3.
10. Remove the landing gear ground lock safety pins from the nose and both of the main landing gear (refer to AMM TASK 10-11-00-000-801 and 10-11-00-000-802).
11. Remove electrical power from the aircraft.

(O) OPERATIONS.

• Note •

Downlock release button must be used to enable gear retraction.

(D) DISPATCH.

Not required.

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MEL	Nose Wheel Spin Down Straps	Repair Category	Quantity Installed	Minimum Required
32-42-01		C	2	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. Straps are removed, and
- b. Nose wheel tires are visually checked for damage.

PLACARD.

Place a placard/sticker on the LDG GEAR control panel.

(M) MAINTENANCE.

For an inoperative Nose Wheel Spin Down Strap, do as follows:

1. Remove both Nose Wheel Spin Down Straps (refer to AMM TASK 32-42-03-000-802).
2. Do a Visual Inspection of the Nosewheel and Tire Assembly (refer to AMM TASK 32-42-01-210-801).

(O) OPERATIONS.

Not required.

• Note •

**When the gear is retracted, possible light vibration might be felt by flight crew
when aircraft is without the Nose Wheel Spin Down Straps.**

(D) DISPATCH.

Not required.

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MEL	Brake Accumulator Pressure Gauges	Repair Category	Quantity Installed	Minimum Required
32-43-01		C	2	0

REMARKS AND EXCEPTIONS.

(M) Both may be inoperative provided accumulator pre-charge pressure is checked using a suitable pressure gauge before the first flight of the day.

PLACARD.

Place a placard/sticker on the instrument panel.

(M) MAINTENANCE.

For an inoperative brake accumulator pressure gauge, do as follows:

1. Use a suitable pressure gauge to check the accumulator precharge pressure before the next flight after failure occurrence (Brake Accumulator Pressure Gauge(s) is found inoperative). If during Category C interval, a Maintenance Task on the Brake Accumulator is scheduled per Operator's Maintenance Schedule, use a suitable pressure gauge to check the accumulator pre-charge pressure (refer to AMM TASK 12-12-29-614-801).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Anti-Skid System Channels	Repair Category	Quantity Installed	Minimum Required
32-44-01-2		B	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) Either the inboard or outboard channel may be inoperative provided:

- a. Nosewheel Steering is operative,
- b. Both pairs of Ground Spoilers are operative,
- c. Both Thrust Reversers are operative,
- d. Both inboard and outboard wheel brakes are verified operative,
- e. Both EICAS Brake Temperature Monitor Readouts associated with the operative anti-skid channel are operative,
- f. Reduced thrust takeoff operations are prohibited,
- g. Takeoff or landing is not conducted from a contaminated runway, and
- h. Operations are conducted in accordance with Anti-Skid Channel Inoperative performance data.

Caution**Confirm landing distance at destination and alternate airports.****PLACARD.**

Place a placard/sticker on the instrument panel.

(M) MAINTENANCE.

For an inoperative anti-skid system channel, do as follows:

1. Do the operational test of the brake system (refer to AMM TASK 32-43-00-710-801).

(O) OPERATIONS.

If the A/SKID INBD Caution message is displayed on EICAS, perform the following procedure before the first flight of the day:

1. Make sure the wheel chocks are in position.
2. On the HYDRAULIC Control Panel, select HYDRAULIC PUMP 2 and HYDRAULIC PUMP 3A and/or 3B to ON.
3. Release the parking brake.
4. Apply brake pedals for 20 seconds.
5. Make sure the PARKING BRAKE ON Advisory message does not appear on EICAS.

Continued

MEL	Anti-Skid System Channels (Continued)	Repair Category	Quantity Installed	Minimum Required
32-44-01-2		B	2	1
6. Remove the wheel chocks if not required.				
For subsequent failure in flight, do as follows:				
1. Aircraft is dispatched with "A/SKID INBD" Caution message. a. If Hydraulic System # 2 fails in flight, select ANTI SKID toggle switch to OFF. OR 2. Aircraft is dispatched with "A/SKID OUTBD" Caution message. a. If Hydraulic System # 3 fails in flight, select ANTI SKID toggle switch to OFF..				
• Note •				
Refer to the QRH Chapter 05 ABNORMAL PROCEDURES LANDING GEAR, WHEEL AND BRAKE SYSTEM (A/SKID INBD and A/SKID OUTBD) for landing distance.				
• Note •				
Ensure the Takeoff and Landing Report reflects performance data for Anti-Skid System Channel inoperable.				
• Note •				
The A/SKID INBD or A/SKID OUTBD caution message for the failed channel may be displayed.				
• Note •				
Landing distances increase significantly. Ensure adequate runway length for destination and alternate.				
(D) DISPATCH.				
1. Take-off and landing is not permitted on a contaminated runway.				
2. Dispatcher will select "Anti-Skid 1 Ch Inop" for take-off and landing in Dispatch Monitor.				
• Note •				
Operations in KVPS prohibited.				
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MEL	Parking Brake Handle Locking Positions (clockwise and counter-clockwise)	Repair Category	Quantity Installed	Minimum Required
32-45-01		B	2	1

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Parking brake system is verified operative,
- b. Remaining locking position is verified operative before each flight, and
- c. Inoperative locking position is legibly placarded.

PLACARD.

Place a placard/sticker stating "LOCKING POSITION (CLOCKWISE OR COUNTER-CLOCKWISE) INOPERATIVE" on the parking brake panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Once after the failure occurred, make sure that the parking brake system is operative as follows:

1. On the EICAS control panel (ECP) push the HYD pushbutton to get access to the HYDRAULIC synoptic page.
2. On the HYDRAULIC page, make sure that the INBD BRAKES and OUTBD BRAKES hydraulic pressure is within limits.
3. On the ECP, push the STAT pushbutton to go back to the EICAS secondary page.
4. On the EICAS secondary page, make sure that the PARKING BRAKE ON advisory message does not show.
5. Set the parking brake with the remaining operative position of the parking brake handle.
6. Make sure that the PARKING BRAKE ON advisory message shows on the EICAS secondary page.
7. Release the parking brake.
8. Make sure that the PARKING BRAKE ON advisory message does not show on the EICAS secondary page.

Before each flight:

Make sure that the remaining operative position of the parking brake handle operates as follows:

1. Push down and hold the brake pedals.
2. Pull out the parking brake handle to its maximum.
3. Turn the parking brake handle 90 degrees towards the operative locking position (clockwise or counter-clockwise) and release.
4. Make sure that the parking brake handle is locked and extended to its maximum.
5. Release the brake pedals and make sure one more time that the parking brake handle is locked.
6. Maintenance will coordinate to alert the flight crew about the inoperative locking position (clockwise or counter-clockwise) of the parking brake handle on the first flight of the day and for all the other flight crews.

Continued

MEL	Parking Brake Handle Locking Positions (clockwise and counter-clockwise) (Continued)	Repair Category	Quantity Installed	Minimum Required
32-45-01		B	2	1
<p style="text-align: center;">• Note •</p> <p>Make sure that there are wheel chocks at the main wheels because the aircraft can move and cause injury to persons and/or damage to equipment.</p>				
<p style="text-align: center;">• Note •</p> <p>While applying or removing the parking brake, do not turn the parking brake handle until it is fully pulled out because the internal locking device can be damaged.</p>				
<p style="text-align: center;">• Note •</p> <p>When the parking brake handle is in the extended and locked position, do not turn it more than 90 degrees because the internal locking device can be damaged.</p>				
(D) DISPATCH. Not required.				
MMEI 20	END	25 OCT 19		

MEL	EICAS Brake Temperature Monitoring Readouts	Repair Category	Quantity Installed	Minimum Required
32-46-01		B	4	0
REMARKS AND EXCEPTIONS.				
(O) (D) All may be inoperative for indication "----" provided:				
a. Quick turn-around landing weight chart and minimum brake cooling times are observed (refer to POH Chapter 9).				
PLACARD. Place a placard/sticker below the EICAS Secondary display.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Establish and use the procedure that follows:				
1. Quick turn-around landing weight charts, and 2. Monitor minimum brake cooling times.				
<p style="text-align: center;">• Note •</p> <p>Ensure <u>Landing Report</u> reflects performance data for BTMS inoperable.</p>				
(D) DISPATCH. BTMS Inoperative must be selected for landing in Dispatch Monitor.				
Continued				

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MEL	EICAS Brake Temperature Monitoring Readouts (Continued)	Repair Category	Quantity Installed	Minimum Required
32-46-01		C	4	2

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

One per each side may be inoperative for indication "----".

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 3 -

Repair Category	Quantity Installed	Minimum Required
C	4	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative for inaccurate indication provided:

- Affected sensor is deactivated,
- Quick turn-around landing weight chart and minimum brake cooling times are observed (refer to POH Chapter 9).

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

For an EICAS Brake Temperature Monitoring Readout that is intermittent, not accurate or inoperative, deactivate the applicable sensor as follows:

- Get access to applicable BTMS thermocouple connector (TC6P/J1, TC7P/J1, TC8P/J1, TC9P/J1).
- Cap the applicable harness connector with a metal dust cap.

• Note •

Use metal dust cap (D38999/32W09N or D38999/32W9N) or (D38999/32W09R or D38999/32W9R) for harness plugs TC6P1, TC7P1, TC8P1, and/or TC9P1.3.

- Stow the steel rope with lacing tape or cable tie, or cut and discard steel rope from metal cap.
- Stow connector to its own harness tubing using lacing tape or cable ties (MS3367).
- Cap the applicable thermocouple connector with a metal dust cap.

Continued

MEL	EICAS Brake Temperature Monitoring Readouts (Continued)	Repair Category	Quantity Installed	Minimum Required
32-46-01		C	4	0
• Note •				
Use metal dust cap (D38999/33W09N or D38999/33W9N) or (D38999/33W09R or D38999/33W9R) for thermocouple jacks TC6J1, TC7J1, TC8J1, and/or TC9J1.				
6. Cut and discard steel rope from metal cap.				
• Note •				
1. If metal dust cap are unavailable it is permitted, as an alternate method, to cap the applicable harness connector or thermocouple connector with hi-temp sleeve and lacing tape (Refer to Electrical/Electronic Components – Standard Practices Manual (CSP BC-115), SPM 20-12-05, figure 2).				
2. Use any shrinkable hi-temp sleeve that can withstand temperature up to 275°F (135°C) minimum and lacing tape that can withstand temperature up to 350°F (177°C) minimum (Refer to Electrical/Electronic Components – Standard Practices Manual (CSP BC-115), SPM 20-12-05, for sleeve and lacing tape selection).				
7. Make sure the secured harness does not foul with landing gear parts.				
(O) OPERATIONS. Establish and use the procedure that follows:				
1. Quick turn-around landing weight charts, and				
2. Monitor minimum brake cooling times.				
• Note •				
Ensure <u>Landing</u> report reflects performance data for BTMS inoperable.				
(D) DISPATCH. BTMS Inoperative must be selected for landing in Dispatch Monitor.				
Continued				

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MEL	EICAS Brake Temperature Monitoring Readouts (Continued)	Repair Category	Quantity Installed	Minimum Required
32-46-01		C	4	2

- OR OPTION 4 -**REMARKS AND EXCEPTIONS.**

(M) (D) One per each side may be inoperative for inaccurate indication provided affected sensor is deactivated.

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

For an EICAS Brake Temperature Monitoring Readout that is intermittent, not accurate or inoperative, deactivate the applicable sensor as follows:

1. Get access to applicable BTMS thermocouple connector (TC6P/J1, TC7P/J1, TC8P/J1, TC9P/J1).
2. Cap the applicable harness connector with a metal dust cap.

• Note •

Use metal dust cap (D38999/32W09N or D38999/32W9N) or (D38999/32W09R or D38999/32W9R) for harness plugs TC6P1, TC7P1, TC8P1, and/or TC9P1.3.

3. Stow the steel rope with lacing tape or cable tie, or cut and discard steel rope from metal cap.
4. Stow connector to its own harness tubing using lacing tape or cable ties (MS3367).
5. Cap the applicable thermocouple connector with a metal dust cap.

• Note •

Use metal dust cap (D38999/33W09N or D38999/33W9N) or (D38999/33W09R or D38999/33W9R) for thermocouple jacks TC6J1, TC7J1, TC8J1, and/or TC9J1.

6. Cut and discard steel rope from metal cap.

• Note •

1. If metal dust cap are unavailable it is permitted, as an alternate method, to cap the applicable harness connector or thermocouple connector with hi-temp sleeve and lacing tape (Refer to Electrical/Electronic Components – Standard Practices Manual (CSP BC-115), SPM 20-12-05, figure 2).

2. Use any shrinkable hi-temp sleeve that can withstand temperature up to 275°F (135°C) minimum and lacing tape that can withstand temperature up to 350°F (177°C) minimum (Refer to Electrical/Electronic Components – Standard Practices Manual (CSP BC-115), SPM 20-12-05, for sleeve and lacing tape selection).

7. Make sure the secured harness does not foul with landing gear parts.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

BTMS Inoperative must be selected for landing in Dispatch Monitor.

MMEL 20	END	25 OCT 19
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MEL	Anti-Skid Sub-System	Repair Category	Quantity Installed	Minimum Required
32-46-02		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative as indicated by "A/SKID FAULT" status message on EICAS

PLACARD.

Place a placard/sticker on the instrument panel.

(M) MAINTENANCE.

Make sure that bit 20 (SPINDOWN FAIL) on label 350A and 350B is not set to 1 as follows:

• Note •**If bit 20 is set to 1, dispatch is not permitted.**

1. Energize the electrical power systems.
2. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to MFD 1 or MFD 2.
3. On the multifunction display (MFD), make sure that the MAINTENANCE MAIN MENU page shows.
4. On the ECP, push the UP and DN pushbuttons to move the cursor (>) to the LRU INDEX line.
5. On the ECP, push the SEL pushbutton to get access to the LRU INDEX page.
6. On the ECP, push the SEL pushbutton to get access to the A/SKID CTRL UNIT operation page.
7. On the ECP, push the HYD pushbutton to move the cursor (>) next to label 350A.
8. On the ECP, push the SEL pushbutton to get access to label 350A.
9. On the DATA READER page, do as follows:
 - a. Make sure that bit 20 is not set to 1 on labels 350A.
10. On the ECP, push the DOOR pushbutton to go back to the LRU OPERATION page.
11. On the ECP, push the HYD pushbutton to move the cursor (>) next to label 350B.
12. On the ECP, push the SEL pushbutton to get access to label 350B.
13. On the DATA READER page, do as follows:
 - a. Make sure that bit 20 is not set to 1 on labels 350B.
14. Exit the MDC as follows:
 - a. On the ECP, push the DOORS pushbutton as required to go back to the MAINTENANCE MAIN MENU page.
 - b. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to OFF.
 - c. Make sure that the navigation data shows on the MFD 1 (MFD 2).
15. Remove electrical power from the aircraft.

Continued

ATA Chapter 32: Landing Gear

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MEL	Anti-Skid Sub-System (Continued)	Repair Category	Quantity Installed	Minimum Required
32-46-02		C	1	0

(O) OPERATIONS.

For an inoperative A/SKID Sub-System, do as follows:

Before the first flight after the failure occurred

1. Make sure that the wheel chocks are in position.
2. On the HYDRAULIC control panel, set the toggle switches 2, 3A and/or 3B to ON.
3. Set Parking brake.
4. Make sure that the PARKING BRAKE ON advisory message shows on the EICAS secondary page.

• Note •

If the PARKING BRAKE ON advisory message does not show on the EICAS secondary page after step (3), dispatch is not permitted.

5. Configure Parking Brake as appropriate.

Each Flight

6. Do not apply brakes before touch down.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	EICAS Brake Pressure Readouts	Repair Category	Quantity Installed	Minimum Required
32-47-01		C	2	0

REMARKS AND EXCEPTIONS.

(M) (O) Both may be inoperative provided:

- a. Brake accumulator(s) nitrogen pressure is verified prior to the first flight of the day,
- b. Capability of brake accumulators to retain adequate hydraulic fluid for brakes is verified prior to the first flight of the day, and
- c. EICAS Hydraulic Pressure Readouts are operative.

PLACARD.

Place an placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.

For an inoperative EICAS brake pressure readout, do the steps that follow before the first flight of the day:

1. Pressurize Hydraulic System #2 (refer to AMM TASK 12-00-06-862-801).
2. Pressurize Hydraulic System #3 (refer to AMM TASK 12-00-06-862-803).
3. Release hydraulic pressure of system #2 to 0 psi without using the Captain or First Officer brake pedals (refer to AMM TASK 12-00-06-862-802).
4. Release hydraulic pressure of system #3 to 0 psi without using the Captain or First Officer brake pedals (refer to AMM TASK 12-00-06-862-804).
5. Fifteen minutes after release of the hydraulic pressure, record the brake accumulator pressure from the brake accumulator gauge.
6. Make sure that the pressure is more than 2500 psi to show proper brake hydraulic pressure and fluid retention.

• Note •

A minimum hydraulic pressure of 1800 psi is required at the accumulator to provide at least six firm brake applications after loss of hydraulic system power.

(O) OPERATIONS.

Prior to first flight of the day, ensure that (M) Maintenance procedure has been documented in the AML.

(D) DISPATCH.

Not required.

MMELO 20	END	25 OCT 19
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ATA Chapter 33: Lights

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ATA Chapter 33: Lights

MEL	Cockpit/Flight Deck/Flight Compartment and Instrument Lighting Systems (Excluding EFIS, Standby Instruments and Switch/Lights)	Repair Category	Quantity Installed	Minimum Required
33-11-01		C	5	0

REMARKS AND EXCEPTIONS.

Individual lights may be inoperative provided remaining lights are:

- a. Sufficient to clearly illuminate all required instruments, controls and other devices for which it is provided,
- b. Positioned so that direct rays are shielded from flight crewmembers eyes, and
- c. Lighting configuration and intensity is acceptable to flight crew.

• Note •

This MEL is only to be used for area lighting or backlighting that is inoperative.

PLACARD.

Place a placard/sticker near the inoperative light.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Cockpit Dome Light	Repair Category	Quantity Installed	Minimum Required
33-13-01-2		C	3	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the MISC LTS panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Cabin Interior Lights - A/C with LED Lights	Repair Category	Quantity Installed	Minimum Required
33-21-01-2b		C	71	35

REMARKS AND EXCEPTIONS.

(O) Up to 50% of total length of ceiling upwash lights and up to 50% of sidewall downwash lights may be inoperative provided:

- a. Inoperative lighting configuration is verified acceptable,
- b. Brightest state of cabin interior light brightness control is available,
- c. Sufficient lighting is operative for cabin crew to perform required duties, and
- d. Lighting configuration at dispatch is acceptable to the flight crew.

PLACARD.

Place a placard/sticker on the forward Flight Attendant's panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For A/C with LED lights, do as follows:

1. For inoperative ceiling lights:
 - a. Make sure that no more than 50% of the total length of four adjacent ceiling upwash LED strips are inoperative.
 - b. Make sure that no more than 50% of the total length of two opposite ceiling upwash LED light strips are inoperative.
2. For inoperative sidewall lights:
 - a. Make sure that no more than 50% of the total length of four adjacent sidewall downwash LED light strips are inoperative.
 - b. Make sure that no more than 50% of the total length of two opposite sidewall downwash LED light strips are inoperative.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Stair Lights	Repair Category	Quantity Installed	Minimum Required
33-21-02		D	3	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the forward Flight Attendant's panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Entrance Lights	Repair Category	Quantity Installed	Minimum Required
33-23-02		D	3	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided sufficient lighting for cabin crew is available to perform required duties.				
PLACARD.				
Place a placard/sticker on the forward Flight Attendant's panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Passenger Notice System (No Smoking/Fasten Seat Belts)	Repair Category	Quantity Installed	Minimum Required
33-24-01		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. PA system is operative, and
- b. Operations procedures below are used to alert flight attendants and notify passengers when seat belts are to be fastened and smoking is prohibited.

PLACARD.

Place a placard/sticker on the PASS SIGNS/EMER LTS control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative passenger notice system and no smoking/fasten seat belt signs, do as follows:

1. Use the PA to alert flight attendants and notify passengers when the seat belts should be fastened and smoking prohibited.

(D) DISPATCH.

Not required.

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MEL	Passenger Notice System (No Smoking/Fasten Seat Belts) - Automatic System	Repair Category	Quantity Installed	Minimum Required
33-24-01-1		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Manual System is operative, and
- b. Operations procedures below are used.

PLACARD.

Place a placard/sticker on the PASS SIGNS/EMER LTS control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative automatic function, do as follows:

1. On the PASS SIGNS/EMER LTS control panel, select the NO SMKG and the SEAT BLTS switch to the OFF position.
2. Make sure that the NO SMOKING and FASTEN SEAT BELTS ordinance lights in the cabin, galley(s) and lavatory(s) are off.
3. On the PASS SIGNS/EMER LTS control panel, select the NO SMKG and the SEAT BLTS switch to the ON position.
4. Make sure that the NO SMOKING and FASTEN SEAT BELTS ordinance lights in the cabin, galley(s), and lavatory(s) come on.
5. On the PASS SIGNS/EMER LTS control panel, set the NO SMKG and the SEAT BLTS switch as required.
6. Use the manual control function of the passenger notice system to alert the flight attendants and notify passengers when the seat belts should be fastened and smoking prohibited.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Passenger Notice System (Fasten Seat Belts) - No Smoking/Fasten Seat Belt Signs	Repair Category	Quantity Installed	Minimum Required
33-24-01-2		C	45	0
REMARKS AND EXCEPTIONS.				
(M/FC) (O) Both may be inoperative provided:				
<ul style="list-style-type: none"> a. PA System is operative, and b. Procedures below are used to alert Flight Attendants and notify passengers when seat belts are to be fastened. 				
PLACARD.				
Place a placard/sticker on the PASS SIGNS / EMER LTS control panel.				
(M/FC) MAINTENANCE.				
For an inoperative automatic and manual passenger notice system, do as follows:				
1. Make sure that the Flight Attendant chime of the interphone alerting system and crewmember interphone system are operative.				
(O) OPERATIONS.				
For an inoperative automatic and manual system, do as follows:				
1. Notify the Flight Attendant and passengers by announcement using the PA system when seat belts are to be fastened.				
(D) DISPATCH.				
Not required.				
- OR OPTION 2 -			Repair Category	Quantity Installed
			C	45
REMARKS AND EXCEPTIONS.				
One or more may be inoperative provided a Passenger or Flight Attendant Seat, from which a sign is illegible or missing, shall not be occupied and must be blocked and placarded "DO NOT OCCUPY."				
• Note •				
Affected seat MAY be occupied provided another Fasten Seat Belt sign is clearly visible from the affected seat.				
PLACARD.				
Place a placard/sticker on the PASS SIGNS / EMER LTS control panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

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MEL	Service Lights	Repair Category	Quantity Installed	Minimum Required
33-31-01		D	4	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the applicable SERVICE LIGHT panel located in the FWD or AFT Cargo compartment.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Maintenance Lights	Repair Category	Quantity Installed	Minimum Required
33-32-01		D	6	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the affected SERVICE LIGHT panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Landing Lights - Nose Lights	Repair Category	Quantity Installed	Minimum Required
33-41-01-2a		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided:

- a. Both Wing Landing Lights are operative, and
- b. Both Taxi / Recognition Lights are operative.

PLACARD.

Place a placard/sticker on the Landing Lights panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(D) May be inoperative provided aircraft is not operated from sunset to sunrise.

PLACARD.

Place a placard/sticker on the Landing Lights panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Cannot operate before morning civil twilight or after evening twilight.

MMELO 20	END	25 OCT 19
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MEL	Landing Lights – Wing Lights	Repair Category	Quantity Installed	Minimum Required
33-41-01-2b		C	2	1

REMARKS AND EXCEPTIONS.

One may be inoperative provided the associated Taxi / Recognition Light is operative.

• Note •

The Landing Lights on the wing are the Outboard Light.

PLACARD.

Place a placard/sticker on the Landing Lights panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -

Repair Category	Quantity Installed	Minimum Required
C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both may be inoperative provided aircraft is not operated from sunset to sunrise.

• Note •

The Landing Lights on the wing are the Outboard Light.

PLACARD.

Place a placard/sticker on the Landing Lights panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Flight may not be operated before morning civil twilight or after evening civil twilight.

MMEL 20	END	25 OCT 19
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ATA Chapter 33: Lights

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MEL	Taxi/Recognition Lights	Repair Category	Quantity Installed	Minimum Required
33-41-02-2		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both may be inoperative provided aircraft is not operated from sunset to sunrise.

• Note •**The Taxi/Recognition Lights on the wing are the Inboard Light.****PLACARD.**

Place a placard/sticker (as applicable) on the LANDING LTS panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Flight may not be operated before morning civil twilight or after evening civil twilight.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

Both may be inoperative provided all Landing Lights are operative.

• Note •**The Taxi/Recognition Lights on the wing are the Inboard Light.****PLACARD.**

Place a placard/sticker (as applicable) on the LANDING LTS panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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ATA Chapter 33: Lights

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MEL	Navigation Lights - Wing Tip Position Light Bulbs	Repair Category	Quantity Installed	Minimum Required
33-42-01-1		C	4	2
REMARKS AND EXCEPTIONS.				
One light bulb may be inoperative at each wing tip.				
PLACARD.				
Place a placard/sticker on the EXTERNAL LTS panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
- OR OPTION 2 -				Repair Category
				C
				4
				0
REMARKS AND EXCEPTIONS.				
(D) All may be inoperative provided aircraft is not operated at night.				
PLACARD.				
Place a placard/sticker on the EXTERNAL LTS panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Flight may not be operated before morning civil twilight or after evening civil twilight.				
MMEL 20	END	25 OCT 19		

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MEL	Navigation Lights - Aft Position Light Bulbs	Repair Category	Quantity Installed	Minimum Required
33-42-01-2		C	2	1
REMARKS AND EXCEPTIONS.				
One may be inoperative at the tail position.				
PLACARD.				
Place a placard/sticker on the EXTERNAL LTS panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
- OR OPTION 2 -				
MMEL 20	END	Repair Category	Quantity Installed	Minimum Required
		C	2	0
REMARKS AND EXCEPTIONS.				
(D) Both may be inoperative provided aircraft is not operated from sunset to sunrise.				
PLACARD.				
Place a placard/sticker on the EXTERNAL LTS panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Flight may not be operated before morning civil twilight or after evening civil twilight.				

ATA Chapter 33: Lights

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REVISION 10

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MEL	Wing Inspection Lights	Repair Category	Quantity Installed	Minimum Required
33-43-01		C	2	0

REMARKS AND EXCEPTIONS.

Both may be inoperative provided:

- a. Ground de-icing procedures do not require their use, and
- b. A portable lamp/light of adequate capacity for wing and/or control surface inspection is available for night operations in icing conditions.

PLACARD.

Place a placard/sticker on the EXTERNAL LTS panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(D) Both may be inoperative provided aircraft is not operated from sunset to sunrise.

PLACARD.

Place a placard/sticker on the EXTERNAL LTS panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Flight may not be operated before morning civil twilight or after evening civil twilight.

MMEL 20	END	25 OCT 19
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ATA Chapter 33: Lights

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MEL	High Intensity Anti - Collision Strobe Lights	Repair Category	Quantity Installed	Minimum Required
33-44-01		C	3	0
REMARKS AND EXCEPTIONS.				
(D) May be inoperative provided aircraft is not operated from sunset to sunrise.				
PLACARD. Place a placard/sticker on the EXTERNAL LTS panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Flight may not be operated before morning civil twilight or after evening civil twilight.				
MMEL 20	END	25 OCT 19		

MEL	Low Intensity Red Beacon Lights	Repair Category	Quantity Installed	Minimum Required
33-44-02		B	2	1
REMARKS AND EXCEPTIONS.				
Bottom light may be inoperative.				
PLACARD. Place a placard/sticker on the EXTERNAL LTS panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

ATA Chapter 33: Lights

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REVISION 11

08 JAN 21

MEL	Sterile Light System	Repair Category	Quantity Installed	Minimum Required
33-45-01		D	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided Operations procedures listed below are used.

PLACARD.

Place a placard/sticker on the MISC LTS panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Establish alternate procedures to notify flight attendants to not disturb the flight crew.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Tail Flood Lights (Logo Lights)	Repair Category	Quantity Installed	Minimum Required
33-46-01		D	2	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the EXTERNAL LTS panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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ATA Chapter 33: Lights

30 OCT 20

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MEL	Cabin Emergency Lights - Ceiling Level Emergency Flood Lights	Repair Category	Quantity Installed	Minimum Required
33-51-01-3a		C	8	5
REMARKS AND EXCEPTIONS.				
Three lights may be inoperative provided they are not adjacent to each other.				
PLACARD. Place a placard/sticker on the PASS SIGNS/ EMER LTS panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Cabin Emergency Lights - Floor Level Emergency Flood Lights	Repair Category	Quantity Installed	Minimum Required
33-51-01-3b		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD. Place a placard/sticker on the PASS SIGNS/EMER LTS panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

ATA Chapter 33: Lights

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30 OCT 20

MEL	Cabin Emergency Lights - Ceiling Level Lighted Exit Signs (Curved Signs)	Repair Category	Quantity Installed	Minimum Required
33-51-01-3c		C	3	3
REMARKS AND EXCEPTIONS.				
(M) Each Exit locator may have 50% of its internal lights inoperative, except that tip lights in exit sign must be operative.				
PLACARD. Place a placard/sticker on the PASS SIGNS/EMER LTS panel.				
(M) MAINTENANCE. Determine that 50% of the internal lights of the lighted ceiling exit signs and both tip lights of the exit sign are operative.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Cabin Emergency Lights - Lighted Exit Signs	Repair Category	Quantity Installed	Minimum Required
33-51-01-3d		C	6	6
REMARKS AND EXCEPTIONS.				
(M) Each exit sign may have 50% of its internal lights inoperative.				
PLACARD. Place a placard/sticker on the PASS SIGNS/EMER LTS panel.				
(M) MAINTENANCE. Determine that 50% of the internal lights of the lighted exit signs are operative.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

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MEL	Cabin Emergency Lights - Floor Level Lighted Exit Signs	Repair Category	Quantity Installed	Minimum Required
33-51-01-3e		C	6	6
REMARKS AND EXCEPTIONS.				
(M) Each floor proximity exit sign may have 50% of its internal lights inoperative.				
PLACARD. Place a placard/sticker on the PASS SIGNS/EMER LTS panel.				
(M) MAINTENANCE. Determine that 50% of the lighted floor level exit signs are operative and no two adjacent lights are inoperative.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Cabin Emergency Lights - Photoluminescent Floor Proximity Emergency Escape Path Marking System Strip/Tape	Repair Category	Quantity Installed	Minimum Required
33-51-01-3f		C	1	1
REMARKS AND EXCEPTIONS.				
May be damaged or segment(s) missing provided:				
<ul style="list-style-type: none"> a. Length of the affected section(s) does not exceed 8 in. (20 cm.), b. Affected section(s) is not attached to the overwing exit marker cross sections, c. Overwing exit marker cross sections are not affected, d. Interval between affected sections on the same side is not less than 128 in. (326 cm.), e. Interval between affected sections on the opposite side is not less than 60 in. (153 cm.), and f. Maximum total length of the affected sections on both sides does not exceed 72 in. (180 cm.) 				
• Note •				
For the purpose of this item, the term "damaged" implies a degradation of the path marking system strip/tape that prevents the system from performing its intended functions (permanent stain masking the path marking system strip/tape).				
PLACARD. Place a placard/sticker on the PASS SIGNS/EMER LTS Panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

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MEL	Repair Category	Quantity Installed	Minimum Required
33-51-02	C	8	0
REMARKS AND EXCEPTIONS.			
(D) All may be inoperative provided aircraft is not operated from sunset to sunrise.			
PLACARD. Place a placard/sticker on the PASS SIGNS/EMER LTS panel.			
(M) MAINTENANCE. Not required			
(O) OPERATIONS. Not required.			
(D) DISPATCH. Cannot operate before morning civil twilight or after evening twilight.			
MMEL 20	END	25 OCT 19	

MEL	Repair Category	Quantity Installed	Minimum Required
33-51-02-2	C	8	6
REMARKS AND EXCEPTIONS.			
The forward overwing emergency light on each side of the aircraft may be inoperative.			
PLACARD. Place a placard/sticker on the PASS SIGNS/EMER LTS panel.			
(M) MAINTENANCE. Not required			
(O) OPERATIONS. Not required			
MMEL 20	END	25 OCT 19	

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MEL	Integrated Standby Instruments (ISI) – NAV Function	Repair Category	Quantity Installed	Minimum Required
34-12-01-1		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker below the Standby Instrument panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Integrated Standby Instruments (ISI) – Attitude Function	Repair Category	Quantity Installed	Minimum Required
34-12-01-2		B	1	0
REMARKS AND EXCEPTIONS.				
(O) (D) May be inoperative provided:				
<ul style="list-style-type: none"> a. Operations are conducted in day VMC only, b. Operations are not conducted into known or forecast VFR-on-Top conditions, and c. Source selector is selected to NORMAL with each side fed from its on-side AHRS. 				
PLACARD.				
Place a placard/sticker below the Standby Instrument Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Operations are conducted in day VMC only.				
Operations are not conducted into known or forecast VFR-on-Top conditions.				
(D) DISPATCH.				
<ol style="list-style-type: none"> 1. Ensure operations are planned in day VMC only. 2. Ensure operations are not conducted in known or forecast VFR-on-top conditions. 				
MMEL 20	END	25 OCT 19		

MEL	ISI (Integrated Standby Instrument) STD Pushbutton Function	Repair Category	Quantity Installed	Minimum Required
34-12-01-3		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided ISI BARO knob operates normally.

PLACARD.

Place a placard/sticker below the Standby Instrument Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative STD Button, do as follows:

- When required, manually set the standard pressure reference (29.92 inHg / 1013 hPa) using the BARO knob.

(D) DISPATCH.

Not required.

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MEL	Altitude Alerting System	Repair Category	Quantity Installed	Minimum Required
34-14-01		A	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- Autopilot with altitude hold and altitude capture operates normally,
- Enroute operations, i.e. RVSM, do not require its use,
- Aircraft does not depart from DAY where repair or replacement can be made, and
- Repairs are made within three flight days.

• Note •

PSA's designated airport is DAY.

• Note •

RVSM status must be downgraded under ACI 90-10-01 RVSM Status.

PLACARD.

Place a placard/sticker below the primary EICAS display unit.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

PSA's designated airport is DAY.

(D) DISPATCH.

Flight may not be dispatched from DAY.

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MEL	Altitude Alerting System – Aural Alert	Repair Category	Quantity Installed	Minimum Required
34-14-01-1		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided:

- a. Visual alert operates normally, and
- b. Autopilot with altitude hold and altitude capture operates normally.

PLACARD.

Place a placard/sticker below the primary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Altitude Alerting System – Visual Alert	Repair Category	Quantity Installed	Minimum Required
34-14-01-2		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided:

- a. Aural alert operates normally, and
- b. Autopilot with altitude hold and altitude capture operates normally.

PLACARD.

Place a placard/sticker below the primary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Attitude Heading Reference System (AHRS) Fans	Repair Category	Quantity Installed	Minimum Required
34-21-01		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the LH COMPASS panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	Non-Stabilized Magnetic Compass (Stand-by Compass)	Repair Category	Quantity Installed	Minimum Required
34-22-01		B	1	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided:				
a. Both Gyro Stabilized Compass Systems (AHRS) operate normally, and				
b. Operations are conducted with Dual Independent Navigation Capability and under Positive Radar Control by ATC on the enroute portion of the flight.				
PLACARD.				
Place a placard/sticker on the Standby Compass.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Ensure that the planned routing complies with qualifying conditions.				
(D) DISPATCH.				
Not required.				
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MEL	Weather Radar System	Repair Category	Quantity Installed	Minimum Required
34-41-01		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided the airplane is not dispatched when current or forecast weather reports indicate that thunderstorms or other potentially hazardous weather conditions that can be detected with airborne weather radar may be expected along the route to be flown.

Source: CFR 121.357

PLACARD.

Place a placard/sticker below the Captain's and First Officers's EFIS multifunction displays.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Dispatch is not authorized when current or forecast weather reports indicate the presence of thunderstorms or other potentially hazardous weather conditions which can be detected with airborne weather radar may be expected along the route.

(D) DISPATCH.

Dispatch is not authorized when current or forecast weather reports indicate the presence of thunderstorms or other potentially hazardous weather conditions which can be detected with airborne weather radar may be expected along the route.

MMEL 20	END	25 OCT 19
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MEL	Weather Radar Control Panels	Repair Category	Quantity Installed	Minimum Required
34-41-02		C	2	1

REMARKS AND EXCEPTIONS.

One may be inoperative.

PLACARD.

Place a placard/sticker on the inoperative WEATHER RADAR Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Ground Proximity Warning System	Repair Category	Quantity Installed	Minimum Required
34-42-01		A	1	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided:				
<ul style="list-style-type: none"> a. Operations procedures below are used, and b. Repairs are made within two flight days. 				
PLACARD.				
Place a placard/sticker above the GPWS and G/S switchlight on the Captain's and First Officers's switchlight panels.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Takeoffs and landings are not conducted in known or forecast windshear conditions.				
<u>Departure</u>				
Brief MSAs prior to departure, query ATC about minimum vector altitudes if assigned altitudes below MSA. Fly the published instrument departure or DP.				
<u>Arrival</u>				
Brief MSAs prior to arrival, query ATC about minimum vector altitudes if assigned below MSA. Fly only charted instrument approaches using IMC procedures. Do not fly visual approaches at night.				
(D) DISPATCH.				
Ensure windshear conditions do not exist, and are not forecast for takeoff and landing.				
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MEL	Repair Category	Quantity Installed	Minimum Required
34-42-01-1 Ground Proximity Warning System – Modes 1 - 4 (Terrain Avoidance)	A	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. Operations procedures below are used, and
- b. Repairs are made within two flight days.

PLACARD.

Place a placard/sticker above the GPWS and G/S switchlight on the Captain's and First Officer's switchlight panels.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Departure**

Brief MSAs prior to departure, query ATC about minimum vector altitudes if assigned altitudes below MSA. Fly the published instrument departure or DP.

Arrival

Brief MSAs prior to arrival, query ATC about minimum vector altitudes if assigned below MSA. Fly only charted instrument approaches using IMC procedures. **Do not fly visual approaches at night.**

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Ground Proximity Warning System – Test Mode	Repair Category	Quantity Installed	Minimum Required
34-42-01-2		A	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided

- a. GPWS is considered inoperative, and
- b. Repairs are made within two flight days

• Note •**GPWS must be deferred under MEL 34-42-01.****PLACARD.**

Place a placard/sticker above the GPWS and G/S switch/light on the Captain's and First Officer's switchlight panels.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Departure**

Brief MSAs prior to departure, query ATC about minimum vector altitudes if assigned altitudes below MSA. Fly the published instrument departure or DP.

Arrival

Brief MSAs prior to arrival, query ATC about minimum vector altitudes if assigned below MSA. Fly only charted instrument approaches using IMC procedures. **Do not fly visual approaches at night.**

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Ground Proximity Warning System – Glideslope Deviation (Mode 5)	Repair Category	Quantity Installed	Minimum Required
34-42-01-3		B	1	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker above the GPWS and G/S switchlight on the Captain's and First Officer's switchlight panels.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Ground Proximity Warning System – Advisory Callouts (Mode 6)	Repair Category	Quantity Installed	Minimum Required
34-42-01-4		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided Operations procedures listed below are used.

PLACARD.

Place a placard/sticker above the GPWS and G/S switchlight on the Captain's and First Officer's switchlight panels.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Departure**

Brief MSAs prior to departure, query ATC about minimum vector altitudes if assigned altitudes below MSA. Fly the published instrument departure or DP.

ArrivalBrief MSAs prior to arrival, query ATC about minimum vector altitudes if assigned below MSA. Fly only charted instrument approaches using IMC procedures. **Do not fly visual approaches at night.****(D) DISPATCH.**

Not required.

MMEL 20	END	25 OCT 19
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MEL	Ground Proximity Warning System – Windshear (Mode 7)	Repair Category	Quantity Installed	Minimum Required
34-42-01-5b		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. Operations procedures below are used, and
- b. Takeoffs and landings are not conducted in known or forecast windshear conditions.

PLACARD.

Place a placard/sticker above the GPWS and G/S switchlight on the Captain's and First Officer's switchlight panels.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Takeoffs and landings are not conducted in known or forecast windshear conditions.

(D) DISPATCH.

Ensure windshear conditions do not exist, and are not forecast, for take-off and landing.

MMEL 20	END	25 OCT 19
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MEL	Ground Proximity Warning System – TAWS (EGPWS)	Repair Category	Quantity Installed	Minimum Required
34-42-01-6		C	1	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative.				
PLACARD.				
Place a placard/sticker above the GPWS and G/S switchlight on the Captain's and First Officer's switchlight panels.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
<u>Departure</u>				
Brief MSAs prior to departure, query ATC about minimum vector altitudes if assigned altitudes below MSA. Fly the published instrument departure or DP.				
<u>Arrival</u>				
• Note •				
PM will make all approach callouts as outlined in the POH.				
Brief MSAs prior to arrival, query ATC about minimum vector altitudes if assigned below MSA. Fly only charted instrument approaches using IMC procedures. Do not fly visual approaches at night.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	GRND PROX TERRAIN Switch Guard	Repair Category	Quantity Installed	Minimum Required
34-42-02		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the Glareshield.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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MEL	GRND PROX FLAP Switch Guard	Repair Category	Quantity Installed	Minimum Required
34-42-03		C	1	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided the switch is verified pressed out or not illuminated before each flight and approach.				
PLACARD. Place a placard/sticker the Glareshield.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. <u>Before each flight:</u> Verify before each departure and approach that the GRND PROX FLAP switch is pressed out and switch is not illuminated.				
(D) DISPATCH. Not required.				
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MEL	Traffic Alert and Collision Avoidance System (TCAS II)	Repair Category	Quantity Installed	Minimum Required
34-43-01		B	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) May be inoperative provided:

- a. System is deactivated and secured, and
- b. Enroute or approach procedures do not require its use.

• Note •

ATC Transponder #2 must be deferred per MEL-34-54-01.**PLACARD.**

Place a placard/sticker on the Captain's or First Officer's EFIS multi-function display.

(M/FC) MAINTENANCE.

For an inoperative TCAS system, deactivate it as follows:

1. Open and collar the circuit breaker that follows:

CB PANEL: **CBP-2**CB NO: **H8**NAME: **TCAS/XPDR 2**ZONE: **222**

• Note •

When the deactivation procedure is completed, the TCAS DISPLAY FAIL amber message will show continuously on the MFDs, FMS Map, and TCAS Map, and the TCAS RA FAIL amber message will show on the PFDs.

• Note •

The deactivated TCAS renders the transponder #2 is inoperative.

Therefore, refer to MEL item 34-54-01 ATC Transponders and make an entry in the aircraft maintenance logbook to advise the flight crew that the transponder #2 is deactivated.

(O) OPERATIONS.

1. ILS PRM approaches prohibited.

(D) DISPATCH.

Not Required.

MMEL 20	END	25 OCT 19
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MEL	Traffic Alert and Collision Avoidance System (TCAS II) – Combined Traffic Alert (TA) and Resolution Advisory (RA) Dual Display System(s)	Repair Category	Quantity Installed	Minimum Required
34-43-01-1		C	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative on the pilot monitoring (PM) side provided:

- a. TA and RA visual display is operative on the pilot flying (PF) side, and
- b. TA and RA audio function is operative on the pilot flying (PF) side.

PLACARD.

Place a placard/sticker below the Captain's or First Officer's EFIS multi-function display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

ILS PRM approaches prohibited.

(D) DISPATCH.

Not required.

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MEL 34-43-01-2	Traffic Alert and Collision Avoidance System (TCAS II) – Resolution Advisory (RA) Display System(s)	Repair Category	Quantity Installed	Minimum Required	
		C	2	1	
REMARKS AND EXCEPTIONS. One may be inoperative on the pilot monitoring (PM) side.					
PLACARD. Place a placard/sticker below the Captain's or First Officer's EFIS multi-function display.					
(M) MAINTENANCE. Not required.					
(O) OPERATIONS. Not required					
(D) DISPATCH. Not required.					
- OR OPTION 2 -		Repair Category	Quantity Installed	Minimum Required	
-		C	2	0	
REMARKS AND EXCEPTIONS. (O) May be inoperative provided:					
<ul style="list-style-type: none"> a. Traffic Alert (TA) visual display and audio functions are operative, b. TA only mode is selected by the crew, and c. Enroute or approach procedures do not require its use. 					
PLACARD. Place a placard/sticker below the Captain's or First Officer's EFIS multi-function display.					
(M) MAINTENANCE. Not required.					
(O) OPERATIONS. <ol style="list-style-type: none"> 1. ILS PRM approaches prohibited. 2. Monitor the operative indications and advisories and respond as appropriate. 					
(D) DISPATCH. <ol style="list-style-type: none"> 1. Not required. 					
MMEL 20	END	25 OCT 19			

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MEL	Traffic Alert and Collision Avoidance System (TCAS II) – Traffic Alert (TA) Display System(s)	Repair Category	Quantity Installed	Minimum Required
34-43-01-3		C	2	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided:

- a. RA visual display and audio functions are operative, and
- b. Enroute or approach procedures do not require its use.

PLACARD.

Place a placard/sticker below the Captain's or First Officer's EFIS multi-function display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

1. ILS PRM approaches prohibited.
2. Monitor the operative indications and advisories and respond as appropriate.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Traffic Alert Collision Avoidance System (TCAS II) - Audio Function	Repair Category	Quantity Installed	Minimum Required
34-43-01-4		B	1	0

REMARKS AND EXCEPTIONS.

May be inoperative provided enroute or approach procedures do not require use of TCAS.

PLACARD.

Place a placard/sticker below the Captain's or First Officer's EFIS multi-function display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Repair Category	Quantity Installed	Minimum Required
34-44-01-2	C	2	1

REMARKS AND EXCEPTIONS.

(M/FC) (O) One may be inoperative provided:

- a. Approach minimums are not dependent on its use, and
- b. Spoiler/Stabilizer Sub-system of SSCS is considered inoperative.

• Note •

SPLR/STAB FAULT status message will be displayed on EICAS.

• Note •

CAT II status must be downgraded under ACI 90-10-04 CAT II Status.

• Note •

Spoiler and Stabilizer Control System (SSCS) - Spoiler/Stabilizer Subsystem must be deferred per MEL 27-65-02-3.**PLACARD.**

Place a placard/sticker below the applicable EFIS Primary Flight Display (PFD) and the related AIR DATA REFERENCE panel.

(M/FC) MAINTENANCE.

For an inoperative radio altimeter, deactivate it as follows:

1. Open and collar the circuit breaker for the inoperative radio altimeter that follows:

For an inoperative Radio Altimeter #1

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	J4	RAD ALT 1	221

For an inoperative Radio Altimeter #2

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-2	J2	RAD ALT 2	222

• Note •

After the deactivation of the defective radio altimeter, the SPLR/STAB FAULT status message will come into view continuously on the EICAS secondary page and the RA red flag will come into view continuously on the defective side PFD.

Continued

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MEL	Repair Category	Quantity Installed	Minimum Required
34-44-01-2	C	2	1

(O) OPERATIONS.

• Note •

With radio altimeter 1 inoperative, there is no windshear guidance on the Captain's PFD. With radio altimeter 2 inoperative, there is no windshear guidance on the First Officer's PFD.

• Note •

It is normal to have the TCAS FAIL when performing the radio altimeter built in test with one radio altimeter on MEL. The TCAS FAIL message must clear and TCAS TEST OK must shown once built in test performed.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Repair Category	Quantity Installed	Minimum Required
34-44-02-2	C	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative provided:

- a. RAD ALT test function on the operative side is performed before each flight, and
- b. Associated radio altimeter with the operative test switch is operative.

• Note •

CAT II status must be downgraded under ACI 90-10-04 CAT II Status.

PLACARD.

Place a placard/sticker on the associated AIR DATA REFERENCE panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Perform RAD ALT test function on the operative side before each flight.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Long Range Navigation Systems – GPS (GNSS)	Repair Category	Quantity Installed	Minimum Required
34-50-01-2		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. Navigation is not predicated on its use, and
- b. DME are not deferred under MEL 34-53-01.

• Note •

When both GPS systems are inoperative, ADS-B OUT must be deferred per MEL 34-54-02 OPTION 2.

PLACARD.

Place a placard/sticker on the affected control panel(s).

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

One GPS (GNSS) may be inoperative with no restrictions.

• Note •

RNAV 1 SIDS, STARS, and/or Q Routes are NOT authorized with BOTH GPS (GNSS) inoperative.

• Note •

If a GPS (GNSS) receiver fails, it will revert to the operative receiver and display GPS (GNSS) reverted on the respective FMS CDU.

• Note •

On applicable FMS GPS Control Page(s), select GPS (GNSS) (1,2) disable.

(D) DISPATCH.

1. One GPS (GNSS) may be inoperative with no restrictions.
2. If BOTH GPS (GNSS) are DISABLED, ensure routing does not make use of RNAV SIDs, RNAV STARs, or Q Routes. Then edit the ATS strip to remove “G” from the list of equipment codes in Item 10a and edit Item 18 to reflect “PBN/B4 NAV/RNVD0E0A0” remembering to leave the parenthesis which becomes a period on the Release Flight Plan.

MMELO 20	END	25 OCT 19
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MEL	Marker Beacon Systems	Repair Category	Quantity Installed	Minimum Required
34-51-01		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided approach procedures do not require its use.				
PLACARD.				
Place a placard/sticker below the Captain's and First Officer's EFIS Primary Flight Display (PFD) units.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	VHF Navigation Systems (VOR/ILS)	Repair Category	Quantity Installed	Minimum Required
34-51-02		C	2	1
REMARKS AND EXCEPTIONS.				
#2 VHF NAV may be inoperative for VMC conditions.				
• Note •				
CAT II status must be downgraded under ACI 90-10-04 CAT II Status.				
PLACARD.				
Place a placard/sticker below the Captain's and First Officer's EFIS Primary Flight Display units and on both of the RADIO TUNING Units (RTUs).				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Operations not authorized in known or forecast IMC.				
(D) DISPATCH.				
Operations not authorized in known or forecast IMC.				
MMEL 20	END	25 OCT 19		

MEL	Automatic Direction Finding (ADF) System	Repair Category	Quantity Installed	Minimum Required
34-52-01		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided navigation is not predicated on its use.				
PLACARD.				
Place a placard/sticker below the Captain's and First Officer's EFIS Primary Flight Display (PFD) units and on both of the RADIO TUNING units.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
If both ADFs are inoperative, dispatch will edit the ATC Strip to remove F from Item 10.				
MMEL 20	END	25 OCT 19		

MEL	Distance Measuring Equipment (DME) Systems	Repair Category	Quantity Installed	Minimum Required
34-53-01		C	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided:				
<ul style="list-style-type: none"> a. Navigation is not predicated on flying a DME arc, b. Long Range Navigation System (MEL 34-50-01-2) is not deferred, and c. FMS Database is current. 				
• Note •				
Above restrictions do not apply for only one DME inoperative.				
PLACARD.				
Place a placard/sticker below the Captain's and First Officer's EIFS Primary Flight Display (PFD) units and on both of the RADIO TUNING units.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
If both DMEs are inoperative, dispatch will edit the ATC Strip to remove D from Item 10.				
MMEL 20	END	25 OCT 19		

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MEL	ATC Transponders and Automatic Altitude Reporting Systems	Repair Category	Quantity Installed	Minimum Required
34-54-01		D	2	1
REMARKS AND EXCEPTIONS.				
(O) One may be inoperative.				
• Note • Associated ADS-B OUT must be deferred per MEL 34-54-02.				
PLACARD. Place a placard/sticker on both of the RADIO TUNING units.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. For one inoperative transponder and flight into RVSM Airspace:				
1. The operative transponder must be coupled to the active Flight Director.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Automatic Dependant Surveillance Broadcast (ADS-B OUT)	Repair Category	Quantity Installed	Minimum Required
34-54-02		C	2	1
REMARKS AND EXCEPTIONS.				
(O) May be inoperative where routine procedures require its use provided Operations procedures listed below are used.				
PLACARD. Place a placard/sticker below the Captain's and First Officer's EFIS multifunction displays.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Revert ATC from side unable to transmit position, velocity and/or time from the GPS (as indicated by ADS-B OUT FAIL caution indication or ADS-B FAIL annunciator) by selecting alternate ATC system. On Next Gen aircraft <702>, ensure ADS-B OUT X FAIL (X = ATC side NOT selected) status message is present.				
(D) DISPATCH. Not required.				
Continued				

MEL	Automatic Dependant Surveillance Broadcast (ADS-B OUT) (Continued)	Repair Category	Quantity Installed	Minimum Required
34-54-02		C	2	0

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) Both may be inoperative provided authorization is obtained from ATC facilities having jurisdiction over planned route of flight.

• Note •

Any ADS-B OUT function which operates normally may be used.

PLACARD.

Place a placard/sticker below the Captain's and First Officer's EFIS multifunction displays.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Prior to departure:

- Flight Crew must verify that authorization has been granted by the ATC facility that has jurisdiction over the applicable airspace or airport movement area as noted on the dispatch release or via ACARS message.
- Flight Crew and Dispatch must verify the Surveillance Equipment Suffix Code as applicable, and that the SUR field is removed from the flight plan filing message (ATC strip).

• Note •

Each ADS-B Out system receives GPS data from both GPS receivers. If one GPS position source fails, the ADS-B Out system will automatically switch to the other GPS position source. Both transponders are linked to each system via the ATC SEL switch. If both transponders fail, ADS-B will not function.

When the **ADS-B OUT FAIL** message is displayed, the **XPDR FAIL** message could appear but may not indicate that the transponder has failed. Follow QRH procedures.

(D) DISPATCH.

- Notify the OCC Coordinator to request ATC approval through the ROC. The ROC will require the following from the OCC Coordinator:
 - Flight Number.
 - City Pair.
 - Planned Departure Time in Zulu.
 - Planned Route and Flight Level.
 - Equipment Type.
- If ATC approval is granted, notify the Flight Crew of the ATC approval through a remark on the dispatch release and/or via ACARS.

Continued

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MEL	Automatic Dependant Surveillance Broadcast (ADS-B OUT) (Continued)	Repair Category	Quantity Installed	Minimum Required
34-54-02		C	2	0
3. Amend the ATC strip as follows:				
a. REPLACE the Transponder code /LB1 with /S. b. REMOVE the Surveillance code SUR/260B.				
MMEL 20	END		25 OCT 19	

MEL	Flight Management Systems (FMS)	Repair Category	Quantity Installed	Minimum Required
34-61-01		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Except where enroute operations require its use, all may be inoperative provided:

- a. Operations procedures below are used, and
- b. Both RTUs are operative.

• Note •

**At least one FMS must be operative if both DMEs are inoperative
and deferred under MEL 34-53-01.**

• Note •

**At least one FMS must be operative if #2 RTU is deferred
in accordance with 23-81-01-2.**

PLACARD.

Place a placard/sticker on the Flight Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

1. With FMS 1 inoperative

- a. On FMS 2 select INDEX, FMS CONTROL
- b. On FMS COORD MODE select INDEP

• Note •

This makes FMS 2 the operable FMS. Any changes to FMS 1 will not be active.

- c. CA will select FMS 2 (amber needles) to be displayed on the CA PFD when using FMS navigation.

Continued

MEL	Flight Management Systems (FMS) (Continued)	Repair Category	Quantity Installed	Minimum Required
34-61-01		C	2	0
2. With FMS 2 inoperative				
<ul style="list-style-type: none"> a. On FMS 1 select INDEX, FMS CONTROL b. On FMS COORD MODE, select INDEP <p style="text-align: center;">• Note •</p> <p>This makes FMS 1 the operable FMS. Any changes to FMS 2 will not be active.</p>				
<ul style="list-style-type: none"> c. FO will select FMS 1 (amber needles) to be displayed on the FO PFD when using FMS navigation. 				
3. With both FMS 1 and FMS 2 inoperative, the crew will use VOR navigation.				
<p style="text-align: center;">• Note •</p> <p>RNAV 1 SIDS, RNAV 1 STARS, and/or Q Routes are NOT authorized.</p>				
Dispatchers will use the 250/70 Climb Performance located in: Eagle 32/CFP/Aircraft/Climb Performance.				
4. If FMS Display is inoperative then the ACARS must be considered inoperative and the following procedures must be applied:				
<ul style="list-style-type: none"> a. Dispatch paperwork will include TLR data and crew will revert to manual weight and balance calculations per the Flight Operations Manual. b. Crew will make all required reports to the station and will monitor the appropriate ARINC enroute frequency per the Flight Operations Manual. 				
(D) DISPATCH.				
1. With only FMS 1 inop or FMS 2 inop, no dispatch action is required.				
2. With Both FMS 1 and FMS 2 inop, do as follows:				
<ul style="list-style-type: none"> a. Routing must utilize VOR way points only and non-RNAV SIDs and STARS. b. When calculating release, in FPCFP, under DP-Perf, type 250KTS. Verify on release under speed schedule that climb reads as follows: CLIMB 250/M70. c. Dispatch will edit the ATC Strip to remove the "E3", "G" and "R" equipment codes from Item 10a, remove the entire PBN/ code from Item 18, and set the NAV/ code in Item 18 to "NAV/RNVD0E0A0". 				
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MEL	FMS/MDC Data Loader	Repair Category	Quantity Installed	Minimum Required
34-61-02		D	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD. Place a placard/sticker below the secondary EICAS display.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Observer's Oxygen System	Repair Category	Quantity Installed	Minimum Required
35-10-01		A	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided:				
<ul style="list-style-type: none"> a. Observer's seat is considered inoperative, and b. Repairs are made within two flight days. <p style="text-align: center;">• Note • Observer's seat must be deferred under MEL 25-12-01.</p>				
PLACARD.				
Place a placard/sticker on the Observer's seat.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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MEL	"OXY LO PRESS" Caution Message	Repair Category	Quantity Installed	Minimum Required
35-10-02		A	1	1

REMARKS AND EXCEPTIONS.

(M) (O) May be displayed provided:

- a. Oxygen pressure is checked to be above minimum required oxygen pressure before each flight,
- b. EICAS Crew Oxygen Pressure Readout is operative,
- c. Crew oxygen pressure is monitored during flight, and
- d. Repairs are made within one flight day.

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

"M" function is only required when bottle pressure gauge is used to verify the crew oxygen bottle shows the same pressure as the EICAS Readout of Ground Service Panel Pressure Gauge.

(O) OPERATIONS.**Before each flight:**

1. Verify that the Oxygen level meets takeoff requirements.

Minimum Pressure (psi)	3 Crewmembers	1110
	2 Crewmembers	960

• Note •**EICAS OXY pressure display is corrected for temperature.**

2. Verify on two means of indication that the crew oxygen bottle shows the same pressure value. EICAS Readout may be used with either Ground Service panel Pressure Gauge or Bottle Pressure Gauge.
3. Monitor the flight crew oxygen pressure during flight.

• Note •**If oxygen leak is suspected, initiate descent to a safe altitude.****(D) DISPATCH.**

Not required.

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MEL	Oxygen Pressure Switch	Repair Category	Quantity Installed	Minimum Required
35-11-02		B	1	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. Oxygen cylinder pre-charge pressure is checked before each flight,
- b. Oxygen cylinder control valve is verified OPEN before each flight, and
- c. Pilot and Copilot Masks are verified operative before each flight.

PLACARD.

Place a placard/sticker below the secondary EICAS display.

(M) MAINTENANCE.

For an inoperative oxygen pressure switch, do as follows:

Before each flight:

1. On the GROUND SERVICE panel or the BOTTLE PRESSURE GAUGE, make sure that the oxygen pressure is serviceable (refer to AMM Task 12-16-35-614-801).
2. Make sure that the oxygen pressure indication on the EICAS status page is the same as the bottle pressure gauge.
3. Make sure that the regulator lever on the oxygen cylinder is set to ON.

Table 1 – 77 cu. ft. Oxygen Bottle (below 8000 ft. Airfield Altitude)

Cabin Temp.	°C	-40	-30	-20	-10	0	10	20	21	30	40	50
	°F	-40	-22	-4	14	32	50	68	70	86	104	122
Min Press (psi)	2 Crew	586	622	658	695	731	768	803	810	840	876	913
	3 Crew	803	852	902	952	1002	1052	1101	1110	1151	1201	1251

Table 2 – 77 cu. ft. Oxygen Bottle (above 8000 ft. Airfield Altitude)

Cabin Temp.	°C	-40	-30	-20	-10	0	10	20	21	30	40	50
	°F	-40	-22	-4	14	32	50	68	70	86	104	122
Min Press (psi)	2 Crew	637	675	715	755	794	834	873	880	913	952	992
	3 Crew	854	906	959	1012	1065	1118	1170	1180	1224	1277	1330

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Flight Crew Oxygen Pressure Indications - EICAS Readouts	Repair Category	Quantity Installed	Minimum Required
35-12-01-1		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) May be inoperative provided Ground Service Panel Pressure Gauge or Bottle Pressure Gauge is operative and checked before each flight.

PLACARD.

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.**Before each flight:**

For an inoperative EICAS oxygen pressure readout, do as follows before each flight:

1. Check the flight crew oxygen pressure on the GROUND SERVICE OXYGEN panel gauge or on the OXYGEN bottle pressure gauge. For access and to service, refer to AMM TASK 12-16-35-614-801.

Table 1 – 77 cu. ft. Oxygen Bottle (below 8000 ft. Airfield Altitude)

Cabin Temp.	°C	-40	-30	-20	-10	0	10	20	21	30	40	50
	°F	-40	-22	-4	14	32	50	68	70	86	104	122
Min Press (psi)	2 Crew	586	622	658	695	731	768	803	810	840	876	913
	3 Crew	803	852	902	952	1002	1052	1101	1110	1151	1201	1251

Table 2 – 77 cu. ft. Oxygen Bottle (above 8000 ft. Airfield Altitude)

Cabin Temp.	°C	-40	-30	-20	-10	0	10	20	21	30	40	50
	°F	-40	-22	-4	14	32	50	68	70	86	104	122
Min Press (psi)	2 Crew	637	675	715	755	794	834	873	880	913	952	992
	3 Crew	854	906	959	1012	1065	1118	1170	1180	1224	1277	1330

(O) OPERATIONS.

Prior to each flight, ensure that (M) Maintenance procedure has been documented in the AML.

If Crew Oxygen System is used in flight, do as follows:

1. Initiate descent to 10000 ft or lowest safe altitude whichever is higher.

(D) DISPATCH.

Not required.

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MEL	Flight Crew Oxygen Pressure Indications - Ground Service Panel Pressure Gauge	Repair Category	Quantity Installed	Minimum Required
35-12-01-2		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided EICAS Readout is operative and checked before each flight.

PLACARD.

Place a placard/sticker on the inoperative gauge on the GROUND SERVICE OXYGEN panel.

(M) MAINTENANCE.

Not required

(O) OPERATIONS.**Before each flight:**

Check the flight crew oxygen pressure on the EICAS Oxygen Pressure Readout.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) May be inoperative provided Bottle Pressure Gauge is operative and checked before each flight.

PLACARD.

Place a placard/sticker on the inoperative gauge on the GROUND SERVICE OXYGEN panel.

(M) MAINTENANCE.

For the inoperative ground service panel pressure gauge, do as follows:

Before each flight

1. Get access to the crew oxygen cylinder, remove the access panel of the entrance compartment (refer to TASK 25-24-14-000-801).
2. On the oxygen bottle pressure gauge, visually check the flight crew oxygen pressure to be within the permissible range for dispatch.

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MEL	Flight Crew Oxygen Pressure Indications - Ground Service Panel Pressure Gauge (Continued)	Repair Category	Quantity Installed	Minimum Required
35-12-01-2		C	1	0

Table 1 – 77 cu. ft. Oxygen Bottle (below 8000 ft. Airfield Altitude)

Cabin Temp.	°C	-40	-30	-20	-10	0	10	20	21	30	40	50
	°F	-40	-22	-4	14	32	50	68	70	86	104	122
Min Press (psi)	2 Crew	586	622	658	695	731	768	803	810	840	876	913
	3 Crew	803	852	902	952	1002	1052	1101	1110	1151	1201	1251

Table 2 – 77 cu. ft. Oxygen Bottle (above 8000 ft. Airfield Altitude)

Cabin Temp.	°C	-40	-30	-20	-10	0	10	20	21	30	40	50
	°F	-40	-22	-4	14	32	50	68	70	86	104	122
Min Press (psi)	2 Crew	637	675	715	755	794	834	873	880	913	952	992
	3 Crew	854	906	959	1012	1065	1118	1170	1180	1224	1277	1330

3. Reinstall the access panel of the entrance compartment (refer to TASK 25-24-14-400-801).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Flight Crew Oxygen Pressure Indications - Bottle Pressure Gauge	Repair Category	Quantity Installed	Minimum Required
35-12-01-3		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the inoperative gauge on the oxygen bottle.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	High Pressure Discharge Indicator	Repair Category	Quantity Installed	Minimum Required
35-12-02		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) May be damaged or missing provided:

- a. At least two pressure indications are verified operative after failure occurrence, and
- b. Crew oxygen bottle pressure is checked within limits before each flight.

PLACARD.

Place a placard/sticker on the PILOT and CO-PILOT oxygen mask container.

(M) MAINTENANCE.

“M” function is only required when bottle pressure gauge has to be used to verify the crew oxygen bottle pressure is within limits.

(O) OPERATIONS.

After failure occurred, verify on two means of indication that crew oxygen bottle pressure is within limits. Ground Service Panel Pressure gauge, Bottle Pressure Gauge or EICAS Readout may be used.

Before each flight:

Check that crew oxygen bottle pressure gauge is within limits.

(D) DISPATCH.

Not required.

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MEL	Passenger Oxygen System	Repair Category	Quantity Installed	Minimum Required
35-20-01		B	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided flight is conducted at or below 10,000 ft MSL.

PLACARD.

Place a placard/sticker below the PASS OXY switchlight.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Operations are conducted at or below 10,000 ft MSL.

(D) DISPATCH.

Dispatcher will plan flight at or below 10,000 ft MSL.

MMEL 20	END	25 OCT 19
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MEL	Passenger Oxygen System - Automatic Deployment	Repair Category	Quantity Installed	Minimum Required	
		C	1	0	
REMARKS AND EXCEPTIONS.					
(M) (O) (D) May be inoperative provided:					
<ul style="list-style-type: none"> a. Manual deployment is operative, and b. Operations are conducted at or below FL300. 					
PLACARD.					
For an inoperative Passenger Oxygen System Automatic Deployment function, place a placard/sticker below the PASS OXY switchlight.					
(M) MAINTENANCE.					
For an inoperative automatic deployment of the passenger oxygen system, do as follows:					
1. Open and collar the circuit breakers that follow:					
CB PANEL: CBP-2					
CB NO: P9					
NAME: PASS OXYGEN AUTO DEPLOY R					
ZONE: 222					
AND					
CB PANEL: CBP-2					
CB NO: P10					
NAME: PASS OXYGEN AUTO DEPLOY L					
ZONE: 222					
2. Do the operational test of the manual deployment system of the Passenger Oxygen System (refer to AMM TASK 35-20-00-710-803).					
(O) OPERATIONS.					
Operations are conducted at or below FL300.					
(D) DISPATCH.					
Dispatcher will plan flight at or below FL300.					
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MEL	Passenger Oxygen System - Passenger Service Units (PSU)	Repair Category	Quantity Installed	Minimum Required
35-20-01-2		C	40	0

REMARKS AND EXCEPTIONS.

(M) (O) Individual PSUs may be inoperative with no flight altitude restriction provided:

- a. Associated seats are blocked and placarded to prevent occupancy,
- b. PSUs for Flight Attendant locations operate normally, and
- c. If two or more inoperative PSUs are adjacent (forward and aft, left and right), seat rows forward and aft of the inoperative PSUs are blocked and placarded to prevent occupancy.

PLACARD.

For an inoperative Passenger Oxygen System PSU(s), do as follows:

1. Place a placard/sticker on the affected PSU(s) as required.
2. Place a NOT FOR PASSENGER USE placard/sticker on the affected seat(s) or a Lavatory inoperative placard on the lavatory door, as required.

(M) MAINTENANCE.

For an inoperative Passenger Oxygen System PSU(s), do as follows:

1. Energize the aircraft electrical power system.
2. On the PASS OXY switchlight, make sure the ON light is off. On the EICAS Primary display, make sure the PASS OXY ON Caution message is not shown. If the light is ON and the message is shown, reset the Passenger Oxygen System to remove these indications.

• Note •

Do not reset the Passenger Oxygen System by pressing the PASS OXY switchlight. This will deploy the PSU oxygen masks.

3. To reset the Passenger Oxygen System, open and close the circuit breakers that follow:

CB PANEL: **CBP-2**CB NO: **P9**NAME: **PASS OXYGEN AUTO DEPLOY R**ZONE: **222****AND**CB PANEL: **CBP-2**CB NO: **P10**NAME: **PASS OXYGEN AUTO DEPLOY L**ZONE: **222**

4. Remove electrical power from the aircraft.

5. Block the affected seat(s) as described in the proviso. To do this, extend two pieces of tape from one arm rest to the other in such a way as to produce and X.

6. If the Lavatory PSU is inoperative, close and lock the lavatory door.

Continued

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MEL	Passenger Oxygen System - Passenger Service Units (PSU) (Continued)	Repair Category	Quantity Installed	Minimum Required
35-20-01-2		C	40	0

(O) OPERATIONS.

For an inoperative Passenger Oxygen System PSU(s), do as follows:

1. Ensure that the Flight Attendant is made aware of the inoperative PSU(s) location.

(D) DISPATCH.

Not required.

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MEL	Passenger Oxygen (Masks Deployed) "ON" Light	Repair Category	Quantity Installed	Minimum Required
35-20-02		C	1	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the PASS OXY switchlight located on the overhead instrument panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Lavatory Passenger Oxygen System	Repair Category	Quantity Installed	Minimum Required
35-20-03		C	2	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) May be inoperative provided:

- a. Lavatory is not used for any purpose, and
- b. Lavatory door is LOCKED and placarded "INOPERATIVE - DO NOT ENTER."

PLACARD.

Put a placard/sticker on the lavatory door.

(M/FC) MAINTENANCE.

1. Close and lock the lavatory door.
2. Install the INOPERATIVE - DO NOT ENTER placard on the lavatory door.

(O) OPERATIONS.During the pre-flight cabin check:

1. Make sure that the lavatory is not used for any purpose, then close and lock the lavatory door(s).

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(O) (D) May be inoperative provided flight is conducted at or below FL250.

• Note •

These provisions are not intended to preclude lavatory inspections by a crewmember.

PLACARD.

Put a placard/sticker on the forward Flight Attendant handset.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Flight is conducted at or below FL250.

(D) DISPATCH.

Dispatcher will plan flight at or below FL250.

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ATA Chapter 36: Pneumatic

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MEL	Pressure Regulating SOV (PRSOV)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		C	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative provided:

- a. Associated PRSOV is secured CLOSED,
- b. Opposite HPV is operative,
- c. Opposite Engine Cowl Anti-Ice SOV is operative,
- d. APU is operative
- e. APU Load Control Valve is operative,
- f. Operations are conducted at or below FL250,
- g. Operations are not conducted in known or forecast icing conditions, and
- h. Operations are conducted in accordance with PRSOV inoperative performance data.

PLACARD.

Place a placard/sticker on the BLEED AIR Control Panel.

(M) MAINTENANCE.

Do the deactivation of the PRSOV (refer to AMM TASK 36-12-01-040-801).

• Note •

When the deactivation is completed, the L (R) ENG BLEED caution message will show continuously on the EICAS primary page.

(O) OPERATIONS.

• Note •

APU bleed is inhibited if the anti-ice system is on.

• Note •

When the deactivation is completed, the L (R) ENG BLEED caution message will show continuously on the EICAS primary page.

• Note •

Ensure the TLR reflects data for BLEEDS ON performance.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

Continued

MEL	Pressure Regulating SOV (PRSOV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		C	2	1

Before Taxi do as follows:

If both PACKS are operative,

OR

If a PACK is inoperative on the same side as the inoperative PRSOV, do as follows:

1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative PRSOV).
2. Select the ISOL switch to CLSD.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the PACK located on the inoperative bleed side (associated with inoperative PRSOV) to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

**NOTE: Selection of the right PACK to OFF will make the Galley Heater inoperative.
Flight attendants are to be advised.**

FOR ALL AIRCRAFT:

5. Select the PACK located on the operative bleed side to ON.

If a PACK is inoperative on the opposite side of the inoperative PRSOV, do as follows:

1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative PRSOV).
2. Select the ISOL switch to OPEN.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the inoperative PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

**NOTE: Selection of the right PACK to OFF will make the Galley Heater inoperative.
Flight attendants are to be advised.**

FOR ALL AIRCRAFT:

5. Select the operative PACK to ON.

Continued

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MEL	Pressure Regulating SOV (PRSOV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		C	2	1

For a subsequent failure in flight:

If the remaining PRSOV or HPV on the operative bleed side fails (indicated by a L(R) ENG BLEED caution message), do as follows:

1. Initiate descent to FL250 or below.
2. Select the BLEED SOURCE switch to APU.
3. ISOL switch – As required.
4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative).
5. Leave icing condition.

If the engine on the operative bleed side fails, do as follows:

1. Follow either the QRH ABNORMAL PROCEDURES Starter-assisted APU Bleed Relight.
OR
QRH ABNORMAL PROCEDURES Windmilling Relight.
2. If the engine relight is not successful, select the BLEED SOURCE switch to APU.
3. ISOL switch – As required.
4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative), and
5. Leave icing condition.

If the engine on the inoperative bleed side fails, do as follows:

1. Follow either the QRH ABNORMAL PROCEDURES Starter-Assisted Cross Bleed Relight.
OR
QRH ABNORMAL PROCEDURES APU Bleed Air Relight.
OR
QRH ABNORMAL PROCEDURES Windmilling Relight.

Continued

MEL	Pressure Regulating SOV (PRSOV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		C	2	1

If the operative PACK on the operative bleed side fails, do as follows:

1. Select the failed PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

**NOTE: Selection of the right PACK to OFF will make the Galley Heater inoperative.
Flight attendants are to be advised.**

FOR ALL AIRCRAFT:

2. Select the ISOL switch to OPEN.
3. Select the remaining PACK to ON.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL250 or below.

Continued

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MEL	Pressure Regulating SOV (PRSOV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		B	2	1

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) (D) May be inoperative provided

- a. Associated PRSOV is secured CLOSED,
- b. Opposite HPV is operative,
- c. Opposite Engine Cowl Anti-Ice SOV is operative,
- d. APU is operative,
- e. APU Load Control Valve is operative,
- f. Operations are conducted at or below FL 310,
- g. Maximum number of cabin occupants (including Flight Attendants) is equal to or less than 82,
- h. Operations are not conducted in known or forecast icing conditions
- i. Operations are conducted in accordance with PRSOV inoperative performance data.

PLACARD.

Place a placard/sticker on the BLEED AIR Control Panel.

(M) MAINTENANCE.

Do the deactivation of PRSOV (refer to TASK 36-12-01-040-801).

• Note •

When the deactivation is completed, the L (R) ENG BLEED caution message will show continuously on the EICAS primary page.

(O) OPERATIONS.

• Note •

APU bleed is inhibited if the anti-ice system is on.

• Note •

When the deactivation is completed, the L (R) ENG BLEED caution message will show continuously on the EICAS primary page.

• Note •

Ensure the TLR reflects data for BLEEDS ON performance.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

Continued

MEL	Pressure Regulating SOV (PRSOV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		B	2	1

Before Taxi do as follows:

If both PACKS are operative,

OR

If a PACK is inoperative on the same side as the inoperative PRSOV, do as follows:

1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative PRSOV).
2. Select the ISOL switch to CLSD.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the PACK located on the inoperative bleed side (associated with inoperative PRSOV) to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

5. Select the PACK located on the operative bleed side to ON.

If a PACK is inoperative on the opposite side of the inoperative PRSOV, do as follows:

1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative PRSOV).
2. Select the ISOL switch to OPEN.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the inoperative PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

5. Select the operative PACK to ON.

Continued

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MEL	Pressure Regulating SOV (PRSOV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		B	2	1

For a subsequent failure in flight:

If the remaining PRSOV or HPV on the operative bleed side fails (indicated by a L(R) ENG BLEED caution message), do as follows:

1. Initiate descent to FL250 or below.
2. Select the BLEED SOURCE switch to APU.
3. ISOL switch – As required.
4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative).
5. Leave icing condition.

If the engine on the operative bleed side fails, do as follows:

1. Follow either the QRH ABNORMAL PROCEDURES Starter-assisted APU Bleed Relight.
OR
QRH ABNORMAL PROCEDURES Windmilling Relight.
2. If the engine relight is not successful, select the BLEED SOURCE switch to APU.
3. ISOL switch – As required.
4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative), and
5. Leave icing condition.

If the engine on the inoperative bleed side fails, do as follows:

1. Follow either the QRH ABNORMAL PROCEDURES Starter-Assisted Cross Bleed Relight.
OR
QRH ABNORMAL PROCEDURES APU Bleed Air Relight.
OR
QRH ABNORMAL PROCEDURES Windmilling Relight.

Continued

MEL	Pressure Regulating SOV (PRSOV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-02-2		B	2	1

If the operative PACK on the operative bleed side fails, do as follows:

1. Select the failed PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

2. Select the ISOL switch to OPEN.
3. Select the remaining PACK to ON.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL310 or below.

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MEL	High Pressure Valve (HPV)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		C	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative provided:

- a. Associated HPV is secured CLOSED,
- b. Opposite Engine Cowl Anti-Ice SOV is operative,
- c. APU is operative,
- d. APU Load Control Valve is operative,
- e. Operations are conducted at or below FL250,
- f. Operations are not conducted in known or forecast icing conditions, and
- g. Operations are conducted in accordance with HPV inoperative performance data.

PLACARD.

Place a placard/sticker on the BLEED AIR control panel.

(M) MAINTENANCE.

Do the deactivation of the HPV (refer to AMM TASK 36-12-05-040-801).

(O) OPERATIONS.

• Note •

APU bleed is inhibited if the anti-ice system is on.

• Note •

When the deactivation is completed, the L (R) ENG BLEED caution message will show continuously on the EICAS primary page.

• Note •

Ensure the TLR reflects data for BLEEDS ON performance.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.**Continued**

MEL	High Pressure Valve (HPV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		C	2	1

Before Taxi do as follows:

If both PACKS are operative,

OR

If a PACK is inoperative on the same side as the inoperative HPV, do as follows:

1. 1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative HPV).
2. 2. Select the ISOL switch to CLSD.
3. 3. Select the BLEED VALVES switch to MANUAL.
4. 4. Select the PACK located on the affected bleed side (associated with failed HPV) to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

NOTE: Selection of the right PACK to OFF will make the Galley Heater inoperative.

Flight attendants are to be advised.

FOR ALL AIRCRAFT:

5. 5. Select the PACK located on the operative bleed side to ON.

If a PACK is inoperative on the opposite side of the inoperative HPV, do as follows:

1. 1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative HPV).
2. 2. Select the ISOL switch to OPEN.
3. 3. Select the BLEED VALVES switch to MANUAL.
4. 4. Select the inoperative PACK to OFF.

Continued

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MEL	High Pressure Valve (HPV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		C	2	1

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

**NOTE: Selection of the right PACK to OFF will make the Galley Heater inoperative.
Flight attendants are to be advised.**

FOR ALL AIRCRAFT:

5. Select the operative PACK to ON.

For a subsequent failure in flight:

If the remaining HPV or PRSOV on the operative bleed side fails (indicated by a L(R) ENG BLEED caution message), do as follows:

1. Initiate descent to FL250 or below.
2. Select the BLEED SOURCE switch to APU.
3. ISOL switch – As required.
4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative).
5. Leave icing condition.

If the engine on the operative bleed side fails, do as follows:

1. Follow either the QRH ABNORMAL PROCEDURES APU Bleed Air Relight.
OR
QRH ABNORMAL PROCEDURES Windmilling Relight.
2. If the engine relight is not successful, select the BLEED SOURCE switch to APU.
3. ISOL switch – As required.
4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative), and
5. Leave icing condition.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL250 or below.

Continued

MEL	High Pressure Valve (HPV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		C	2	1

If the engine on the inoperative bleed side fails, do as follows:

1. Follow either the QRH ABNORMAL PROCEDURES Starter-assisted Cross Bleed Relight.

OR

QRH ABNORMAL PROCEDURES Starter-assisted APU Bleed Relight.

OR

QRH ABNORMAL PROCEDURES Windmilling Relight.

If the operative PACK on the operative bleed side fails, do as follows:

1. Select the failed PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

2. Select the ISOL switch to OPEN.
3. Select the remaining PACK to ON.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL250 or below.

Continued

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MEL	High Pressure Valve (HPV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		B	2	1

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) (D) May be inoperative provided

- a. Associated HPV is secured CLOSED,
- b. Opposite HPV is operative,
- c. Opposite Engine Cowl Anti-Ice SOV is operative,
- d. APU is operative,
- e. APU Load Control Valve is operative,
- f. Operations are conducted at or below FL 310,
- g. Maximum number of cabin occupants (including Flight Attendants) is equal to or less than 82,
- h. Operations are not conducted in known or forecast icing conditions
- i. Operations are conducted in accordance with PRSOV inoperative performance data.

PLACARD.

Place a placard/sticker on the BLEED AIR Control Panel.

(M) MAINTENANCE.

Do the deactivation of HPV (refer to TASK 36-12-05-040-801).

• Note •

When the deactivation is completed, the L (R) ENG BLEED caution message will show continuously on the EICAS primary page.

(O) OPERATIONS.

• Note •

APU bleed is inhibited if the anti-ice system is on.

• Note •

Ensure the TLR reflects data for BLEEDS ON performance.

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

Continued

MEL	High Pressure Valve (HPV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		B	2	1

Before Taxi do as follows:

If both PACKS are operative,

OR

If a PACK is inoperative on the same side as the inoperative HPV, do as follows:

1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative HPV).
2. Select the ISOL switch to CLSD.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the PACK located on the affected bleed side (associated with failed HPV) to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

5. Select the PACK located on the operative bleed side to ON.

If a PACK is inoperative on the opposite side of the inoperative HPV, do as follows:

1. Select the BLEED SOURCE switch to the operative bleed side (associated with operative HPV).
2. Select the ISOL switch to OPEN.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the inoperative PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

5. Select the operative PACK to ON.

For a subsequent failure in flight:

If the remaining HPV or PRSOV on the operative bleed side fails (indicated by a L(R) ENG BLEED caution message), do as follows:

1. Initiate descent to FL250 or below.
2. Select the BLEED SOURCE switch to APU.

Continued

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MEL	High Pressure Valve (HPV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		B	2	1

- 3. ISOL switch – As required.
- 4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative).
- 5. Leave icing condition.

If the engine on the operative bleed side fails, do as follows:

- 1. Follow either the QRH ABNORMAL PROCEDURES Starter-assisted APU Bleed Relight.

OR

QRH ABNORMAL PROCEDURES Windmilling Relight.

- 2. If the engine relight is not successful, select the BLEED SOURCE switch to APU.
- 3. ISOL switch – As required.
- 4. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative), and
- 5. Leave icing condition.

If the engine on the inoperative bleed side fails, do as follows:

- 1. Follow either the QRH ABNORMAL PROCEDURES Starter-assisted Cross Bleed Relight.

OR

QRH ABNORMAL PROCEDURES APU Bleed Air Relight.

OR

QRH ABNORMAL PROCEDURES Windmilling Relight.

If the operative PACK on the operative bleed side fails, do as follows:

- 1. Select the failed PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001 THRU 15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

- 2. Select the ISOL switch to OPEN.
- 3. Select the remaining PACK to ON.

Continued

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MEL	High Pressure Valve (HPV) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-11-03-2		B	2	1

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL310 or below.

MMEL 20	END	25 OCT 19
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MEL	Pack Inlet Pressure Sensors	Repair Category	Quantity Installed	Minimum Required
36-11-04		C	2	0

REMARKS AND EXCEPTIONS.

May be inoperative.

• Note •

The Status Msg "L/R Eng Bleed SNSR" may be displayed.

PLACARD.

Place a placard/sticker on the BLEED AIR control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Bleed Air ISOL Valve (Cross-Bleed Valve)	Repair Category	Quantity Installed	Minimum Required
36-12-02-2		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative OPEN provided:

- a. ISOL valve is secured OPEN,
- b. Bleed source selector switch is selected either to L ENG or R ENG,
- c. Bleed valves selector switch is selected to MANUAL,
- d. PRSOV and HPV on selected side are operative,
- e. Operations are conducted at or below FL250,
- f. Operations are not conducted in known or forecast icing conditions, and
- g. Operations are conducted in accordance with BLEED AIR ISOL Valve inoperative performance data.

PLACARD.

Place a placard/sticker on the BLEED AIR control panel.

(M) MAINTENANCE.Do the deactivation of the Bleed Air ISOL Valve (Cross-Bleed Valve)
(refer to AMM TASK 36-12-00-040-802).

• Note •

When the deactivation procedure is completed, the ISOL FAIL caution and ISOL OPEN status messages will come into view on the EICAS primary and secondary pages. Also, the Bleed Air ISOL (cross bleed) Valve symbol will be shown amber and in the open position on the ECS synoptic page.

Continued

MEL	Bleed Air ISOL Valve (Cross-Bleed Valve) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-12-02-2		C	1	0

(O) OPERATIONS.**• Note •**

APU bleed is inhibited if the anti-ice system is on.

Before Taxi:

If both PACKS are operative,

OR

If a PACK is inoperative on the same side as the inoperative bleed side, do as follows:

1. Select the BLEED SOURCE switch as required (L ENG or to R ENG).
2. Select the ISOL switch to OPEN.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the PACK located on the inoperative bleed side to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001-15356:**• Note •**

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

5. Select the PACK located on the operative bleed side to ON.

If a PACK is inoperative on the same side as the operative bleed side, do as follows:

1. Select the BLEED SOURCE switch as required (L ENG or to R ENG).
2. Select the ISOL switch to OPEN.
3. Select the BLEED VALVES switch to MANUAL.
4. Select the PACK located on the operative bleed side to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001-15356:**• Note •**

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

Continued

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MEL	Bleed Air ISOL Valve (Cross-Bleed Valve) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-12-02-2		C	1	0

FOR ALL AIRCRAFT:

5. Select the PACK located on the inoperative bleed side to ON.

For a subsequent failure in flight:

If the PRSOV or HPV on the operative bleed side fails (indicated by a L(R) ENG BLEED caution message) do as follows:

1. Select the BLEED SOURCE switch to the opposite engine or APU, whichever is available.

• Note •

If the opposite engine bleed is selected, the ISOL switch should be kept in the OPEN position since the ISOL valve is secured OPEN. That will prevent the BLEED MISCONFIG caution message from appearing on the EICAS.
2. If the APU is selected as a bleed source, initiate descent to FL250 or below.
3. Select both PACKS to ON (if aircraft has been dispatched with both PACKS operative).
4. Leave icing condition.

If the operative PACK on the operative bleed side fails, do as follows:

1. Select the failed PACK to OFF.

FOR AIRCRAFT SERIAL NUMBERS 15001-15356:

• Note •

Selection of the right PACK to OFF will make the Galley Heater inoperative. Flight attendants are to be advised.

FOR ALL AIRCRAFT:

2. Select the ISOL switch to OPEN.
3. Select the remaining PACK to ON.

In case of a subsequent failure resulting in hot air leak on the selected bleed side, the system will shut down the bleed automatically to isolate a leak. When the leak is isolated and the L(R) BLEED DUCT caution message is posted on the EICAS, do as follows:

• Note •

System reconfiguration is not possible since the ISOL valve is secured OPEN.

1. Follow the QRH ABNORMAL PROCEDURES Unpressurized Flight Procedure.:

• Note •

Ensure the TLR reflects data for BLEEDS ON performance.

Continued

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MEL	Bleed Air ISOL Valve (Cross-Bleed Valve) (Continued)	Repair Category	Quantity Installed	Minimum Required
36-12-02-2		C	1	0

• Note •

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

Before Engine Shutdown Check do as follows:

1. Select the ISOL switch to CLOSED.
2. Select the BLEED VALVES switch to AUTO.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL250 or below.

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MEL	Air Leak Detection System	Repair Category	Quantity Installed	Minimum Required
36-21-06		C	1	1

REMARKS AND EXCEPTIONS.

System redundancy may be degraded as indicated by "DUCT MON FAULT" status message.

PLACARD.

Place a placard/sticker on the Bleed Air Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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08 JAN 21

MEL	Air Leak Detection System - Anti-Ice Loops	Repair Category	Quantity Installed	Minimum Required
36-21-06-1		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both loops (A and B) may be inoperative provided:

- a. Wing Anti-Ice switch is selected OFF, and
- b. Operations are not conducted in known or forecast icing conditions.

PLACARD.

Place a placard/sticker on the Bleed Air Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Caution**

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

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MEL	Air Leak Detection System Cowl Loops - Left	Repair Category	Quantity Installed	Minimum Required
36-21-06-2a		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both loops (A and B) may be inoperative provided:

- a. At least one Right Cowl Loop is operative,
- b. Right Cowl Anti-Ice SOV is operative,
- c. Right PRSOV is operative,
- d. Right HPV is operative,
- e. Left Cowl Anti-Ice switch is selected OFF, and
- f. Operations are not conducted in known or forecast icing conditions.

PLACARD.

Place a placard/sticker on the Bleed Air Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Caution**

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

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08 JAN 21

MEL	Air Leak Detection System Cowl Loops - Right	Repair Category	Quantity Installed	Minimum Required
36-21-06-2b		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both loops (A and B) may be inoperative provided:

- a. At least one Left Cowl Loop is operative,
- b. Left Cowl Anti-Ice SOV is operative,
- c. Left PRSOV is operative,
- d. Left HPV is operative,
- e. Right Cowl Anti-Ice switch is selected OFF, and
- f. Operations are not conducted in known or forecast icing conditions.

PLACARD.

Place a placard/sticker on the Bleed Air Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Caution**

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

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MEL	Air Leak Detection System Bleed Loops - Left	Repair Category	Quantity Installed	Minimum Required
36-21-06-3a		B	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both loops (A and B) may be inoperative provided:

- a. At least one Right Bleed Loop (A or B) is operative,
- b. Right PRSOV is operative,
- c. Right HPV is operative,
- d. Right Air Conditioning Pack is operative,
- e. Bleed Source Selector switch is selected to the R ENG,
- f. Bleed Air ISOL Valve is operative and selected CLOSED,
- g. Bleed Valves Selector switch is selected to MANUAL,
- h. APU is operative,
- i. APU Load Control Valve is operative,
- j. Cross bleed start procedure is not used for engine start,
- k. Operations are conducted at or below FL 310,
- l. Maximum number of cabin occupants (including Flight Attendants) is equal to or less than 82,
- m. Operations are not conducted in known or forecast icing conditions, and
- n. Limitations and performance adjustments for operations with airplane systems inoperative are applied.

PLACARD.

Place a placard/sticker on the Bleed Air Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

APU bleed is inhibited if the Anti-Ice system is ON.

Before Taxi do as follows:

For both inoperative Bleed Detection Loops.

1. Select the BLEED SOURCE switch to the operative side.
2. Select the ISOL switch to CLSD.
3. Select the BLEED VALVES switch to MANUAL.

Continued

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08 JAN 21

MEL	Air Leak Detection System Bleed Loops - Left (Continued)	Repair Category	Quantity Installed	Minimum Required
36-21-06-3a		B	2	0

4. Select the Air Conditioning Pack on the affected side (associated with failed Bleed Leak Detection Loops) to OFF.

• Note •

Selection of the right Air Conditioning Pack to OFF renders the Galley Heater inoperative. Flight Attendants are to be advised.

5. Select the operative Air Conditioning Pack to ON.

Before Engine Shutdown Check do as follows:

1. Select BLEED VALVES switch to AUTO.

For a subsequent failure in flight, do as follows.

2. For a subsequent failure of both Bleed Leak Detection Loops (indicated by a L or R BLEED LOOP caution message), PRSOV or HPV (indicated by the L or R ENG BLEED caution message) on the operative side resulting in engine bleed shut down, APU may be used as a bleed source for the rest of the flight.
3. For a subsequent failure of an engine, follow either the Starter-Assisted APU Bleed Relight or Windmill Relight abnormal procedure. If engine fails on the operative side and the relight procedure was not successful, the APU may be used as a bleed source for the rest of the flight.
4. For a subsequent failure of the Air Conditioning Pack on the operative side, complete flight unpressurized.

Caution

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL310 or below.

MMEL 20	END	25 OCT 19
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MEL	Air Leak Detection System Bleed Loops - Right	Repair Category	Quantity Installed	Minimum Required
36-21-06-3b		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) Both loops (A and B) may be inoperative provided:

- a. At least one Left Bleed Loop (A or B) is operative,
- b. Left PRSOV is operative,
- c. Left HPV is operative,
- d. Left Air Conditioning Pack is operative,
- e. Bleed Source Selector switch is selected to the L ENG,
- f. Bleed Air ISOL Valve is operative and selected CLOSED,
- g. Bleed Valve Selector switch is selected to MANUAL,
- h. APU is operative,
- i. APU Load Control Valve is operative,
- j. Cross bleed start procedure is not used for engine start,
- k. Operations are conducted at or below FL 310,
- l. Maximum number of cabin occupants (including Flight Attendants) is equal to or less than 82,
- m. Operations are not conducted in known or forecast icing conditions, and
- n. Limitations and performance adjustments for operations with airplane systems inoperative are applied.

PLACARD.

Place a placard/sticker on the Bleed Air Control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

APU bleed is inhibited if the Anti-Ice system is ON.

Before Taxi do as follows:

For both inoperative Bleed Detection Loops.

1. Select the BLEED SOURCE switch to the operative side.
2. Select the ISOL switch to CLSD.
3. Select the BLEED VALVES switch to MANUAL.

Continued

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MEL	Air Leak Detection System Bleed Loops - Right (Continued)	Repair Category	Quantity Installed	Minimum Required
36-21-06-3b		C	2	0

4. Select the Air Conditioning Pack on the affected side (associated with failed Bleed Leak Detection Loops) to OFF.

• Note •

Selection of the right Air Conditioning Pack to OFF renders the Galley Heater inoperative. Flight Attendants are to be advised.

5. Select the operative Air Conditioning Pack to ON.

Before Engine Shutdown Check do as follows:

1. Select BLEED VALVES switch to AUTO.

For a subsequent failure in flight, do as follows.

2. For a subsequent failure of both Bleed Leak Detection Loops (indicated by a L or R BLEED LOOP caution message), PRSOV or HPV (indicated by the L or R ENG BLEED caution message) on the operative side resulting in engine bleed shut down, APU may be used as a bleed source for the rest of the flight.
3. For a subsequent failure of an engine, follow either the Starter-Assisted APU Bleed Relight or Windmill Relight abnormal procedure. If engine fails on the operative side and the relight procedure was not successful, the APU may be used as a bleed source for the rest of the flight.
4. For a subsequent failure of the Air Conditioning Pack on the operative side, complete flight unpressurized.

Caution

Operations are not to be conducted in known or forecast icing conditions.

• Note •

Icing conditions exist in flight at TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

(D) DISPATCH.

1. Operations are not authorized into known or forecast icing conditions.

• Note •

Icing conditions exist inflight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40°C (-40°F) or below.

2. Ensure flight is planned at FL310 or below.

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ATA Chapter 38: Water/Waste

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ATA Chapter 38: Water/Waste

MEL	Potable Water Systems	Repair Category	Quantity Installed	Minimum Required
38-10-01		C	2	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. System is drained, and
- b. Procedures below are used to ensure that system is not serviced.

PLACARD.

For an inoperative potable water system, put a GALLEY (and/or LAVATORY) POTABLE WATER SYSTEM INOPERATIVE placard/sticker on the POTABLE WATER SYSTEM Control Panel and on the forward (and/or aft) WATER TANK SERVICE panel.

(M) MAINTENANCE.**For an inoperative FWD potable water system, do as follows:**

1. Drain the forward water system (refer to AMM TASK 12-18-38-613-801).
2. On the galley POTABLE WATER SYSTEM Control Panel, push the FWD ON/OFF switch to OFF.
3. Do a visual leak check of the associated system.

For an inoperative AFT potable water system, do as follows:

1. Drain the aft water system (refer to AMM TASK 12-18-38-613-803).
2. On the galley POTABLE WATER SYSTEM Control Panel, push the AFT ON/OFF switch to OFF.
3. Do a visual leak check of the associated system.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Lavatory Waste System	Repair Category	Quantity Installed	Minimum Required
38-30-01		C	2	0

REMARKS AND EXCEPTIONS.

(M/FC) Associated lavatory system may be inoperative provided:

- a. Associated components are deactivated or isolated to prevent leaks,
- b. PIC will determine if flight duration is acceptable with lavatory unusable, and
- c. Associated lavatory door(s) is secured CLOSED and placarded "INOPERATIVE - DO NOT ENTER."

• Note •

These provisos are not intended to prohibit inspections by crew members.**PLACARD.**

For an inoperative lavatory waste system, do as follows:

1. Put an "INOPERATIVE - DO NOT ENTER" or "NOT FOR PASSENGER USE" placard on the lavatory door.
2. Put a "LAVATORY WASTE SYSTEM INOPERATIVE - DO NOT SERVICE" placard on the toilet service panel.

(M/FC) MAINTENANCE.**For an inoperative FWD waste water system, do as follows:**

1. Drain the forward waste water system (refer to AMM TASK 12-18-38-613-802).

• Note •

Draining of the waste water system is not required, if the system is deactivated such that no leaks are present.

2. Lock the foward lavatory door.
3. Install the "INOPERATIVE - DO NOT ENTER" or "NOT FOR PASSENGER USE" placard on the lavatory door.

For an inoperative AFT waste water system, do as follows:

1. Drain the aft waste water system (refer to AMM TASK 12-18-38-613-804).

• Note •

Draining of the waste water system is not required, if the system is deactivated such that no leaks are present.

2. Lock the aft lavatory door.
3. Install the "INOPERATIVE - DO NOT ENTER" or "NOT FOR PASSENGER USE" placard on the lavatory door.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

For BOTH lavatory waste systems deferred ensure each flight is restricted to a maximum of 90 minutes.

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MEL	Lavatory Service Indicator Lights	Repair Category	Quantity Installed	Minimum Required
38-30-02		C	2	0
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided Operations procedures listed below are used.				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">Waste tanks require a precharge of 8.7 L (2.3 US gallons).</p>				
PLACARD. Place a placard/sticker on the Galley Control Panel.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS.				
<p style="text-align: center;">• Note •</p> <p style="text-align: center;">If Lavatory Service Indicator Light is inoperative and the lavatory requires servicing, ground personnel must service the lavatory tank through the toilet bowl in the lavatory, with no more than 2.3 US gallons of fluid to prevent overservicing.</p>				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

ACI	EPA Notification - Total Coliform Positive Event (REF. 40 CFR 141.803 & 141.805)	Repair Category	Quantity Installed	Minimum Required
38-30-03		N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.

PLACARD.

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley.

MMEL 20	END	25 OCT 19
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ACI	EPA Notification - E. coli Positive Event (REF. 40 CFR 141.803 & 141.805)	Repair Category	Quantity Installed	Minimum Required
38-30-04		N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.

PLACARD.

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley.

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ACI	EPA Notification - Failure to Conduct EPA-Directed Routine Disinfection and Flushing (REF. 40 CFR 141.803 & 141.805)	Repair Category	Quantity Installed	Minimum Required
38-30-05		N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided:

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.**PLACARD.**

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley.

MMEL 20	END	25 OCT 19
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ACI	EPA Notification - Failure to Collect EPA-Directed Routine Sample (REF. 40 CFR 141.803 & 141.805)	Repair Category	Quantity Installed	Minimum Required
38-30-06		N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided:

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.**PLACARD.**

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley.

MMEL 20	END	25 OCT 19
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ACI	EPA Notification - Failure to Collect EPA-Directed Follow-up Sample after E. coli Positive Event (REF. 40 CFR 141.803 & 141.805)	Repair Category	Quantity Installed	Minimum Required
38-30-07		N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided:

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.**PLACARD.**

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley.

MMEL 20	END	25 OCT 19
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ACI	EPA Notification - Failure to Collect EPA-Directed Follow-up Sample after Total Coliform Positive Event (REF. 40 CFR 141.803 & 141.805)	Repair Category	Quantity Installed	Minimum Required
38-30-08		N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided:

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.**PLACARD.**

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley.

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08 JAN 21

ACI	EPA Notification - Failure to Board Water from a EPA-Directed Safe Watering Point (E. Coli Positive)	Repair Category	Quantity Installed	Minimum Required
38-30-09	(REF. 40 CFR 141.803 & 141.805)	N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided:

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.**PLACARD.**

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley

MMEL 20	END	25 OCT 19
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ACI	EPA Notification - Failure to Board Water from a EPA-Directed Safe Watering Point (Non-E. Coli Positive)	Repair Category	Quantity Installed	Minimum Required
38-30-10	(REF. 40 CFR 141.803 & 141.805)	N/A	N/A	N/A

REMARKS AND EXCEPTIONS.

(M)(O) May be inoperative provided:

- a. Galley and Lavatory Potable Water systems are deactivated, and
- b. Placard is installed

• Note •

Galley & Lavatory Potable Water Systems are deferred per MEL 38-10-01.**PLACARD.**

Place the appropriate placard on the inside of the wall of the galley nearest the aisle near the coffee maker.

(M) MAINTENANCE.

Refer to GMM Appendix C Potable Water Program, section C.2.8.2 Procedures for Installing a Public Notification.

(O) OPERATIONS.

Captain must direct all crewmembers to read posted placard in galley

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ATA Chapter 45: Central Maintenance Computer

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ATA Chapter 45: Central Maintenance Computer

MEL	Maintenance Diagnostic Computer (MDC)	Repair Category	Quantity Installed	Minimum Required
45-45-01		B	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided Operations procedures listed below are used.

PLACARD.

Place a placard/sticker below both of the EFIS Multifunctional Displays.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

The flight crew shall record in the Aircraft Maintenance Logbook any exceedances and the duration.

(D) DISPATCH.

Not required.

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MEL	MAINT Switch Guard	Repair Category	Quantity Installed	Minimum Required
45-45-02		B	1	0

REMARKS AND EXCEPTIONS.

May be inoperative, broken or missing.

PLACARD.

Place a placard/sticker below both of the EFIS Multifunctional Displays.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

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MEL	Auxiliary Power Unit (APU)	Repair Category	Quantity Installed	Minimum Required
49-10-01-2		C	1	0

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) May be inoperative provided:

- a. APU is deactivated,
- b. Intake door is visually verified CLOSED, and
- c. Both Integrated Drive Generators are operative.

• Note •

IDG is considered inoperative when either the Generator/GCU System or the CSD System is inoperative.

- d. If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the APU control panel

(M/FC) MAINTENANCE.

For an inoperative APU when the Intake Door is verified CLOSED, do as follows:

1. Visually verify that the APU air intake door is closed.
2. Do the procedure to deactivate the APU as follows:
 - a. On the APU control Panel, set the APU PWR FUEL switch/light to OFF.
 - b. Open and collar the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	N10	APU FUEL PUMP	221
CBP-1	N11	APU ECU PRIM	221
CBP-1 LOWER	R9	FUEL SOV APU	221

• Note •

When the deactivation procedure is completed, the APU EGT and RPM indications can come out of view and the APU DOOR indication can become dashed (---), on the EICAS status page, and the Load Control Valve (LCV) symbol can come out of view, on the ECS synoptic page.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

Continued

MEL	Auxiliary Power Unit (APU) (Continued)	Repair Category	Quantity Installed	Minimum Required
49-10-01-2		C	1	0

(O) OPERATIONS.

Ensure the TLR reflects data for BLEEDS ON performance for takeoff.

• Note •

**Dispatch will notify down line stations that an Air Cart
and an AC Power cart will be needed.**

(D) DISPATCH.

1. Dispatcher must select "APU Inop" performance for take-off and landing in Dispatch Monitor.
2. Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.
3. Ensure down line stations have a functioning AC Power Cart and air start capabilities.

Caution

**If the APU is not operational OR used for engine starts ONLY, shipments
containing dry ice are limited to 50 lbs.**

- OR OPTION 2 -

REMARKS AND EXCEPTIONS.

(M/FC) (O) (D) May be inoperative provided:

- a. APU is deactivated,
- b. Aircraft speed is limited to 220 knots, and
- c. Both Integrated Drive Generators (IDG) are operative.

• Note •

**IDG is considered inoperative when either the Generator/GCU System
or the CSD System is inoperative.**

- d. If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the APU control panel.

(M/FC) MAINTENANCE.

For an inoperative APU, do as follows:

1. Do the procedure to deactivate the APU as follows:
 - a. On the APU control panel, set the APU PWR FUEL switch/light to the off position.
 - b. Open and collar the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	N10	APU FUEL PUMP	221
CBP-1	N11	APU ECU PRIM	221
CBP-1 LOWER	R9	FUEL SOV APU	221

Continued

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MEL	Auxiliary Power Unit (APU) (Continued)	Repair Category	Quantity Installed	Minimum Required
49-10-01-2		C	1	0

• Note •

When the deactivation procedure is completed, the APU EGT and RPM indications can come out of view and the APU DOOR indication can become dashed (---), on the EICAS status page, and the Load Control Valve (LCV) symbol can come out of view, on the ECS synoptic page.

(O) OPERATIONS.

Ensure the TLR reflects data for BLEEDS ON performance for takeoff.

• Note •

Dispatch will notify down line stations that an Air Cart and an AC Power cart will be needed.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.

1. Dispatcher must select "APU Inop - Door Open" performance for take-off and landing in Dispatch Monitor.
2. Aircraft speed is limited to 220 knots; when calculating release, in FPCFP, under DP-Perf, type APUDOOR. Verify on release under speed schedule that climb, cruise and decent read as follows: CLIMB 220KIAS, CRUISE 220KIAS, DECENT 220KIAS.
3. Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.
4. Ensure down line stations have a functioning AC Power Cart and air start capabilities.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

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MEL	APU Air Intake Door Linear Actuator	Repair Category	Quantity Installed	Minimum Required
49-14-01-2		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. APU is not used,
- b. Aircraft speed is limited to 220 knots, and
- c. Both Integrated Drive Generators are operative.

• Note •

**IDG is considered inoperative when either the Generator/GCU System
or the CSD System is inoperative.**

- d. If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the APU control panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative APU intake door actuator do as follows:

1. APU is not to be used, limit airspeed to 220 knots
2. Ensure the takeoff and landing report reflects data for BLEEDS ON performance.

• Note •

**Dispatch will notify down line stations that an Air Cart
and an AC Power cart will be needed.**

Caution

**If the APU is not operational OR used for engine starts ONLY, shipments
containing dry ice are limited to 50 lbs.**

Continued

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MEL	APU Air Intake Door Linear Actuator (Continued)	Repair Category	Quantity Installed	Minimum Required
49-14-01-2		C	1	0

(D) DISPATCH.

1. Dispatcher must select "APU Inop - Door Open" performance for take-off and landing in Dispatch Monitor.
2. Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.
3. APU is not to be used; Ensure down line stations have a functioning AC Power Cart and air start capabilities.
4. Aircraft speed is limited to 220 knots; Dispatch will use the 220 KIAS Cruise Performance for the release, by selecting "Override Policies", then "Performance", and manually entering 220KIAS in the Climb, Cruise, and Descent Performance Boxes.

Caution

If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) (D) May be inoperative fully OPEN provided:

- a. Intake door is deactivated open,
- b. APU is operated continuously during flight or aircraft speed is limited to 220 knots if APU is OFF, and
- c. APU fuel burn corrections are applied.

Continued

MEL	APU Air Intake Door Linear Actuator (Continued)	Repair Category	Quantity Installed	Minimum Required
49-14-01-2		C	1	0

PLACARD.

Place a placard/sticker on the APU control panel.

(M) MAINTENANCE.

For an inoperative APU air intake door linear actuator with the door in the OPEN position, do as follows:

1. Do the deactivation of the air intake door linear actuator (refer to AMM TASK 49-14-00-040-801).

(O) OPERATIONS.**If APU is operated continuously do as follows:**

1. Notify the dispatcher the APU will be operated continuously.
2. Maximum flight altitude 37,000 ft.
3. Assure the fuel burn of the APU for the T/O FUEL time (on the release) is placed in the contingency fuel (CONTINGY) section of the release.

• Note •

The APU fuel burn rate is 280 lbs/hr.

Reference also POH Chapter 3: Limitations for further APU limitations.

If the APU is off do as follows:

1. The aircraft speed is limited to 220 knots.

• Note •

Reference also POH Chapter 3 Limitations for APU limitations.

(D) DISPATCH.

1. Unless the dispatcher is notified the APU will be operated continuously, Dispatcher must select "APU Door Inop Open" performance for take-off and landing in Dispatch Monitor.
2. Aircraft speed is limited to 220 knots **if the APU is not operated continuously during flight.**
If APU will be operated continuously proceed to step 3.
 - a. If aircraft speed is limited to 220 knots, when calculating release, in FPCFP, under DP-Perf, type APUDOOR. Verify on release under speed schedule that climb, cruise and decent read as follows: CLIMB 220KIAS, CRUISE 220KIAS, DECENT 220KIAS.
 - b. Enter "Aircraft speed limited to 220 KIAS" in the release remarks section.
3. If the APU will be operated continuously, the dispatcher must select "APU Operative ON" performance for take-off and landing in Dispatch Monitor, calculate the fuel burn of the APU for the T/O FUEL time (on the release) and place that amount of fuel in the CONTINGY section of the release..
 - a. APU fuel burn rate is 280 lbs/hr.
 - b. Enter "Extra CONTINGY fuel for APU burn" in the release remarks section.

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MEL	APU Air Intake Door Linear Actuator (Continued)	Repair Category	Quantity Installed	Minimum Required
49-14-01-2		C	1	0

- OR OPTION 3 -**REMARKS AND EXCEPTIONS.**

(M) (O) (D) May be inoperative secured CLOSED provided APU is considered inoperative.

- a. Intake door is deactivated CLOSED, and
- b. APU is considered inoperative.

• Note •
APU must be deferred under MEL 49-10-01-2.

PLACARD.

Place a placard/sticker on the APU control panel.

(M) MAINTENANCE.

For an inoperative APU air intake door linear actuator with the door in the CLOSED position, do as follows:

1. Do the procedure to deactivate the APU with the intake door closed (refer to AMM TASK 49-10-00-040-801).

(O) OPERATIONS.

Ensure the takeoff and landing report reflects data for BLEEDS ON performance.

• Note •
Dispatch will notify down line stations that an Air Cart
and an AC Power cart will be needed.

(D) DISPATCH.

1. Dispatcher must select "APU Inop" performance for take-off and landing in Dispatch Monitor.
2. Ensure down line stations have a functioning AC Power Cart and air start capabilities.

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MEL	APU START/STOP "START/AVAIL" Switchlight (light function only)	Repair Category	Quantity Installed	Minimum Required
49-43-01		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the APU Control Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

MEL	APU Load Control Valve (LCV)	Repair Category	Quantity Installed	Minimum Required
49-51-01-2		C	1	0
REMARKS AND EXCEPTIONS.				
(M)(O)(D) May be inoperative provided:				
<ul style="list-style-type: none"> a. APU LCV is secured CLOSED, and b. Bleed Valves are selected to MANUAL on the Bleed Air Control Panel. <p style="text-align: center;">• Note •</p> <p style="text-align: center;">The APU is available as a source of electrical power only, if required.</p>				
<ul style="list-style-type: none"> c. If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs. 				

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MEL	APU Load Control Valve (LCV)	Repair Category	Quantity Installed	Minimum Required
49-51-01-2		C	1	0

PLACARD.

Place a placard/sticker on the BLEED AIR Control Panel.

(M) MAINTENANCE.

For an inoperative APU LCV, do as follows:

1. Do the procedure to deactivate the APU LCV in the closed position (refer to AMM TASK 49-51-00-040-801).

(O) OPERATIONS.

Ensure the takeoff and landing report reflects data for BLEEDS ON performance.

• Note •

Dispatch will notify down line stations that an Air Cart and an AC Power cart will be needed.

Caution

If the APU is not operational OR unable to supply bleed air, shipments containing dry ice are limited to 50 lbs.

(D) DISPATCH.

The APU is available as a source of electrical power only; ensure down line stations have air start capabilities.

Caution

If the APU is not operational OR unable to supply bleed air, shipments containing dry ice are limited to 50 lbs.

MMEL 20	END	25 OCT 19
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MEL	APU Surge Control Valve	Repair Category	Quantity Installed	Minimum Required
49-51-02		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative CLOSED provided:

- a. APU is not operated above 17,000 feet, and
- b. Operations are not dependent on the use of the APU.

• Note •**The APU is available as a source of electrical power only, if required.**

- c. If the APU is not operational OR used for engine starts ONLY, shipments containing dry ice are limited to 50 lbs.

PLACARD.

Place a placard/sticker on the BLEED AIR Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Ensure the takeoff and landing report reflects data for BLEEDS ON performance.

Caution**If the APU is not operational OR unable to supply bleed air, shipments containing dry ice are limited to 50 lbs.****(D) DISPATCH.**

Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.

Caution**If the APU is not operational OR unable to supply bleed air, shipments containing dry ice are limited to 50 lbs.**

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MEL	Repair Category	Quantity Installed	Minimum Required
49-61-01	C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided APU is considered inoperative

• Note •

APU must be deferred under MEL 49-10-01-2.**PLACARD.**

Place a placard/sticker on the APU Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Ensure the takeoff and landing report reflects data for BLEEDS ON performance.

• Note •

**Dispatch will notify down line stations that an Air Cart
and an AC Power cart will be needed.****(D) DISPATCH.**

Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.

MMEL 20	END	25 OCT 19
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MEL	Repair Category	Quantity Installed	Minimum Required
49-61-02-1	C	2	1

REMARKS AND EXCEPTIONS.

(O) (D) One may be inoperative provided:

- a. APU is operative (start and shutdown normally), and
- b. Operations are not dependent on the use of the APU.

PLACARD.

Place a placard/sticker on the APU Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Ensure the take-off and landing report reflects data for BLEEDS ON performance.

(D) DISPATCH.

Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.

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MEL	APU Sub-System - Speed Sensors	Repair Category	Quantity Installed	Minimum Required	
		C	2	1	
REMARKS AND EXCEPTIONS.					
(O) (D) One may be inoperative provided:					
a. APU is operative (start and shutdown normally), and					
b. Operations are not dependent on the use of the APU.					
PLACARD.					
Place a placard/sticker on the APU Control Panel.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
Ensure the takeoff and landing report reflects data for BLEEDS ON performance.					
(D) DISPATCH.					
Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.					
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MEL	APU Sub-System - Fuel Filter Delta Pressure Switch	Repair Category	Quantity Installed	Minimum Required
49-61-02-3		C	2	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. APU is operative (start and shutdown normally), and
- b. Operations are not dependent on the use of the APU.

PLACARD.

Place a placard/sticker on the APU Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Ensure the takeoff and landing report reflects data for BLEEDS ON performance.

(D) DISPATCH.

Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.

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MEL	APU Sub-System - APU Oil Filter Delta Pressure Switch	Repair Category	Quantity Installed	Minimum Required
49-61-02-4		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided:

- a. APU is operative (start and shutdown normally), and
- b. Operations are not dependent on the use of the APU.

PLACARD.

Place a placard/sticker on the APU Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Ensure the takeoff and landing report reflects data for BLEEDS ON performance.

(D) DISPATCH.

Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.

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MEL	APU Sub-System - Generator Oil Filter Bypass Indicator	Repair Category	Quantity Installed	Minimum Required	
		C	1	0	
REMARKS AND EXCEPTIONS.					
(O) (D) May be inoperative provided:					
a. APU is operative (start and shutdown normally), and					
b. Operations are not dependent on the use of the APU.					
PLACARD.					
Place a placard/sticker on the APU Control Panel.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
Ensure the takeoff and landing report reflects data for BLEEDS ON performance.					
(D) DISPATCH.					
Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.					
MMEL 20	END	25 OCT 19			

MEL	APU Sub-System - Oil Temperature Sensor	Repair Category	Quantity Installed	Minimum Required	
		C	1	0	
REMARKS AND EXCEPTIONS.					
(O) (D) May be inoperative provided:					
a. APU is operative (start and shutdown normally), and					
b. Operations are not dependent on the use of the APU.					
PLACARD.					
Place a placard/sticker on the APU Control Panel.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
Ensure the takeoff and landing report reflects data for BLEEDS ON performance.					
(D) DISPATCH.					
Ensure "Bleeds On" is selected for take-off performance in Dispatch Monitor.					
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MEL	Time Totalizing Meter	Repair Category	Quantity Installed	Minimum Required
49-61-02-7		C	1	0

REMARKS AND EXCEPTIONS.

(M/FC) May be inoperative provided Operations procedures listed below are used.

PLACARD.

Place a placard/sticker on the APU Control Panel.

(M) MAINTENANCE.

To read and record the hours of APU operation from the flight compartment using the MDC, do as follows:

1. Get access to the SYSTEM PARAMETERS PAGE (TASK 45-45-00-970-809).

WARNING

Make sure that the APU START/STOP pushbutton is not pushed in. If the APU start/stop pushbutton and the APU PWR fuel pushbutton are pushed in, an unlikely APU start can occur that can cause injury to persons and damage to the equipment.

2. Press the PWR FUEL push button.
3. Record the APU TOTAL OPER HOURS and APU CYCLES, shown on the SYSTEM PARAMETERS page, as follows:
 - a. If the hourmeter has been removed, record as HOURS (OLD)
 - b. If the hourmeter has been installed, record as HOURS (NEW)
 - c. If the hourmeter is not replaced or installed, record as HOURS (NOW)
4. Use the formula that follows to calculate the number of hours of APU operation:
 - a. HOURS = HOURS (NOW) + HOURS (OLD) - HOURS (NEW)

• Note •

**If the hourmeter is the initial unit installed on the APU,
HOURS (OLD) = 0 AND HOURS (NEW) = 0.**

5. Record the calculated HOURS.
6. Record the calculated CYCLES.
7. On the engine indication and crew alerting system (ECIAS) control panel, push the MENU pushbutton to go back to the MAIN MENU page.
8. On the bulkhead panel behind the pilot seat, set the MAINT switch to OFF.
9. Make sure the navigation data shows on the MFD 1 (MFD 2).
10. On the APU control panel, push the PWR FUEL pushbutton.

Continued

MEL	Time Totalizing Meter (Continued)	Repair Category	Quantity Installed	Minimum Required
49-61-02-7		C	1	0

To read and record the hours of APU operation when the MDC is not available, do as follows:

1. Open the access door that follows:

<u>CB PANEL</u>	<u>NAME</u>
311 BB	Aft Equipment Compartment Door

2. Open and collar the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>
CBP-1	N7	APU CONT
CBP-1	N10	APU FUEL PUMP
CBP-1	N11	APU ECU PRIM
CBP-1 LOWER	R9	FUEL SOV APU
CBP-5	A6	APU ECU SEC
CBP-5	B1	APU DOOR ACT

WARNING

Be careful when you open the APU access doors after an APU operation or an APU start. Small quantities of very hot fluids can fall. This can cause injury to persons.

3. Open the APU access doors (TASK 52-45-49-010-801).
4. Disconnect the electrical connector M3P1 from the hourmeter M3.
5. Connect the reader connector to the hourmeter M3.
6. Push in and hold the pushbutton on the APU hourmeter/start counter reader. Make sure of the conditions that follow:
 - a. Make sure the LED's flash for approximately 3 seconds.
 - b. If the LED's do not flash, replace the battery in the hourmeter reader.
 - c. After approximately 3 seconds, make sure the LED shows the APU hours in the display.

• Note •

**The display will go off after 15 seconds to protect
the battery in the hourmeter reader.**

7. Record the number of APU hours as follows:
 - a. If the hourmeter has been removed, record as HOURS (OLD)
 - b. If the hourmeter has been installed, record as HOURS (NEW)
 - c. If the hourmeter is not replaced or installed, record as HOURS (NOW)

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MEL	Time Totalizing Meter (Continued)	Repair Category	Quantity Installed	Minimum Required
49-61-02-7		C	1	0

8. Use the formula that follows to calculate the number of hours of APU operation:

a. HOURS = HOURS (NOW) + HOURS (OLD) - HOURS (NEW)

• Note •

If the hourmeter is in the initial unit installed on the APU,
HOURS (OLD) = 0 and HOURS (NEW) = 0

9. Record the calculated HOURS in the APU engine logbook.

10. Record the calculated CYCLES.

11. Remove the Reader connector from the hourmeter M3.

12. Connect the electrical connector M3P1 to the hourmeter M3.

13. Remove the collars and close the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>
CBP-1	N7	APU CONT
CBP-1	N10	APU FUEL PUMP
CBP-1	N11	APU ECU PRIM
CBP-1 LOWER	R9	FUEL SOV APU
CBP-5	A6	APU ECU SEC
CBP-5	B1	APU DOOR ACT

14. Remove all tools, equipment and unwanted materials from the work area.

15. Close the access door that follows:

<u>CB PANEL</u>	<u>NAME</u>
311 BB	Aft Equipment Compartment Door

16. Close the APU access doors (TASK 52-45-49-410-801).

(O) OPERATIONS.

Not required.

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ATA Chapter 52: Doors

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MEL	Passenger Door Power Assist System - Power Assist Sub-System (Motor, Control Switch, Cables, Pulleys, Fitting)	Repair Category	Quantity Installed	Minimum Required
52-11-01-1		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) May be inoperative provided:

- a. Door is verified manually operative (opens and closes) without any interference,
- b. Counterbalance Forward and Aft sides are operative, and
- c. Qualified personnel must assist Flight Attendant when closing door manually before each flight and in opening the door after each arrival.

Caution

Mechanic must assist Flight Attendant to prevent the door from free falling and causing damage to door or surrounding structure.

PLACARD.

1. Place a placard/sticker below the Door Assist switch on the forward Flight Attendant's panel.
2. Place a Door Assist Inop Placard on the outside of the passenger door, below the door handle.

(M) MAINTENANCE.

For an inoperative passenger door power assist system, do as follows:

1. Do the deactivation of the passenger door power assist motor (refer to AMM TASK 52-11-00-040-801).
2. Open and close the passenger door to make sure the inoperative power assist system does not affect the normal door operation.
3. Qualified personnel must be available to assist in closing the door prior to departure.

Before Each Flight:

4. Qualified personnel must be available to assist in opening the door once aircraft arrives at the next station.

After Each Arrival:

5. Qualified personnel must assist Flight Attendant in opening the door.

• Note •

A mechanic should be capable of closing the door from the outside of the aircraft without the power assist system operating. A flight crewmember inside of the aircraft can assist by pulling on the inner hand grip to move the door to the closed position.

Continued

MEL	Passenger Door Power Assist System - Power Assist Sub-System (Motor, Control Switch, Cables, Pulleys, Fitting) (Continued)	Repair Category	Quantity Installed	Minimum Required
52-11-01-1		C	1	0
• Note •				
<p>Qualified personnel should be capable of closing the door from the outside of the aircraft without the power assist system operating. A flight crewmember inside of the aircraft can assist by pulling on the inner hand grip to move the door to the closed position.</p>				
<p>(O) OPERATIONS. Flight Attendant will wait for the mechanic to initiate the opening and closing of the door.</p> <p>(D) DISPATCH. Notify down-line station that personnel will need to assist in opening and closing the forward passenger door.</p>				
MMEL 20	END	25 OCT 19		

MEL	Passenger Door Power Assist System - Counterbalance Sub-System - Forward Side (Gas Springs, Cables, Pulleys, Fittings)	Repair Category	Quantity Installed	Minimum Required
52-11-01-2a		C	1	0
REMARKS AND EXCEPTIONS.				
(M) (O) (D) Forward side may be inoperative, provided:				
<ul style="list-style-type: none"> a. Door is verified manually operative (opens and closes) without any interference, b. Qualified personnel must assist Flight Attendant when closing door manually before each flight and in opening the door after each arrival. 				
<div style="border: 1px solid black; border-radius: 50%; padding: 2px 10px; display: inline-block;"> Caution </div> <p>Qualified personnel must assist Flight Attendant to prevent the door from free falling and causing damage to door or surrounding structure.</p>				
PLACARD.				
<ol style="list-style-type: none"> 1. Place a placard/sticker below the Door Assist switch on the forward Flight Attendant's Panel. 2. Place a Door Assist Inop Placard on the outside of the passenger door, below the door handle. 				
(M) MAINTENANCE.				
For an inoperative passenger door power assist system, do as follows:				
<ol style="list-style-type: none"> 1. Do the deactivation of the passenger door power assist motor (refer to AMM TASK 52-11-00-040-801). 2. Open and close the passenger door to make sure the inoperative power assist system does not affect the normal door operation. 3. Qualified personnel must be available to assist in closing the door prior to departure. 				
Continued				

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MEL	Passenger Door Power Assist System - Counterbalance Sub-System - Forward Side (Gas Springs, Cables, Pulleys, Fittings) (Continued)	Repair Category	Quantity Installed	Minimum Required
52-11-01-2a		C	1	0

Before Each Flight:

4. Qualified personnel must be available to assist in opening the door once aircraft arrives at the next station.

After Each Arrival:

5. Qualified personnel must assist Flight Attendant in opening the door.

• Note •

A Qualified personnel should be capable of closing the door from the outside of the aircraft without the power assist system operating. A flight crewmember inside of the aircraft can assist by pulling on the inner hand grip to move the door to the closed position.

• Note •

Qualified personnel should be capable of closing the door from the outside of the aircraft without the power assist system operating. A flight crewmember inside of the aircraft can assist by pulling on the inner hand grip to move the door to the closed position.

(O) OPERATIONS.

Flight Attendant will wait for the mechanic to initiate the opening and closing of the door.

(D) DISPATCH.

Notify down-line station that personnel will need to assist in opening and closing the forward passenger door.

MMEL 20	END	25 OCT 19
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MEL	Passenger Door Power Assist System - Counterbalance Sub-System - Aft Side (Gas Springs, Cables, Pulleys, Fittings)	Repair Category	Quantity Installed	Minimum Required
52-11-01-2b		C	1	0

REMARKS AND EXCEPTIONS.

(M) (O) (D) Aft side may be inoperative, provided:

- a. Door is verified manually operative (opens and closes) without interference,
- b. Counterbalance Forward side is operative, and
- c. Qualified personnel must assist Flight Attendant when closing door manually before each flight and in opening the door after each arrival.

Caution

Qualified personnel must assist Flight Attendant to prevent the door from free falling and causing damage to door or surrounding structure.

PLACARD.

1. Place a placard/sticker below the Door Assist switch on the forward Flight Attendant's Panel.
2. Place a Door Assist Inop Placard on the outside of the passenger door, below the door handle.

(M) MAINTENANCE.

For an inoperative passenger door power assist system, do as follows:

3. Do the deactivation of the passenger door power assist motor (refer to AMM TASK 52-11-00-040-801).
4. Open and close the passenger door to make sure the inoperative power assist system does not affect the normal door operation.
5. Qualified personnel must be available to assist in closing the door prior to departure.

Before Each Flight:

6. Qualified personnel must be available to assist in opening the door once aircraft arrives at the next station.

After Each Arrival:

7. Qualified personnel must assist Flight Attendant in opening the door.

• Note •

A logbook entry is not required for qualified personnel assisting Flight Attendant when closing the door before each flight and opening the door after each arrival.

• Note •

Qualified personnel should be capable of closing the door from the outside of the aircraft without the power assist system operating. A flight crewmember inside of the aircraft can assist by pulling on the inner hand grip to move the door to the closed position.

(O) OPERATIONS.

Flight Attendant will wait for the qualified personnel to initiate the opening and closing of the door.

(D) DISPATCH.

Notify down-line station that personnel will need to assist in opening and closing the aft passenger door.

MMEL 20	END	25 OCT 19
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MEL	Passenger Door Handrail Quick-Release Pins	Repair Category	Quantity Installed	Minimum Required
52-11-05		C	2	1
REMARKS AND EXCEPTIONS.				
(M) One may be missing provided the associated cable is stowed.				
PLACARD. Place a placard/sticker on the forward flight attendant's panel.				
(M) MAINTENANCE. Stow the affected Passenger Door Handrail Quick-Release Pin cable with a ty-wrap.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Passenger Door Support Wheel Assembly	Repair Category	Quantity Installed	Minimum Required
52-11-06		C	1	0
REMARKS AND EXCEPTIONS.				
(M)(O) May be inoperative or missing provided:				
<ul style="list-style-type: none"> a. Support Wheel Assembly is deactivated, b. Maintenance and Operations procedures to support door with cable kit below are used, and c. Placarded stairway loading limitations are maintained. 				
PLACARD. Place a placard/sticker below the Door Assist switch on the forward Flight Attendant's Panel.				
(M) MAINTENANCE. For an inoperative passenger door support wheel assembly, do as follows:				
<ol style="list-style-type: none"> 1. Do the procedure to remove the support wheel assembly (refer to AMM TASK 52-11-13-000-801). 2. Do the procedure to remove the lower support-wheel cable (refer to AMM TASK 52-11-13-000-802). 3. Do the procedure to remove the upper support-wheel cable (refer to AMM TASK 52-11-13-000-803). 4. Remove loose items such as the tube and the slotted washer. 				
• Note •				
<p style="margin-left: 40px;">Support cable kit part number G601R101004-1 will be acquired from Stores in a maintenance base and be given to the crew for installation and storage.</p> <p style="margin-left: 40px;">The support cable kit will be stored in the cockpit during flight and on the floor immediately inside the passenger door during overnights.</p>				
Continued				

MEL	Passenger Door Support Wheel Assembly (Continued)	Repair Category	Quantity Installed	Minimum Required
52-11-06		C	1	0

(O) OPERATIONS.

For an inoperative passenger door support wheel the cockpit crew will use the following procedure each time the door is opened and closed for passenger boarding and deplaning.

• Note •

A single crewmember can use the passenger door stairway without the cable kit installed to retrieve the kit from the floor immediately inside the passenger door.

• Note •

The support cable kit will be stored in the cockpit floor compartment during flight and on the floor immediately inside the passenger door during extended periods of time on the ground when the door is required to be closed.

1. Install the support cable kit (G601R101004-1) provided by maintenance at a maintenance base or located on the aircraft.
 - a. Install the AFT cable (short cable and so marked) by placing the end with the hook around the bottom of the AFT hand rail bottom post assembly, then while slightly raising the door place the opposite end with the eye over the lower tension button in the door frame and lower door.
 - b. Install the FWD cable (long cable and so marked) by placing the end with the hook around the bottom of the FWD hand rail bottom post assembly, then while slightly raising the door, place the opposite end with the eye over the upper tension button in the door frame and lower the door.
2. Remove the support cable kit following passenger boarding and deplaning prior to door closing for flight or during extended periods of time on the ground when the door is required to be closed.
 - a. Remove the FWD cable in opposite order of installation
 - b. Remove the AFT cable in opposite order of installation
 - c. Place cable kit into its proper storage location depending on phase of aircraft operation.

• Note •

Maximum load capacity of door is 1,000 pounds or a maximum of four passengers on the stairway at any time.

Continued

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MEL	Passenger Door Support Wheel Assembly (Continued)	Repair Category	Quantity Installed	Minimum Required
52-11-06		C	1	0
				
(D) DISPATCH. Not required.				
MMEL 20	END		25 OCT 19	

MEL	Doors and Overwing Emergency Exits (Non-Revenue Flying Only)	Repair Category	Quantity Installed	Minimum Required
52-21-01		A	6	5

REMARKS AND EXCEPTIONS.

(O) (D) One overwing emergency exit or one door may be inoperative provided:

- a. No passengers are carried except aircraft crew,
- b. Affected door or Emergency Exit is verified CLOSED, LATCHED, and LOCKED before each flight,
- c. Repairs are made within three flight days.

PLACARD.

Put a DOOR INOPERATIVE or an OVERWING EMERGENCY EXIT INOPERATIVE placard/sticker on the inside and on the outside of the affected door or overwing emergency exit.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Before each flight:****For an inoperative passenger door, do as follows:**

1. On the EICAS primary display, make sure the PASSENGER DOOR warning message and the PAX DR LATCH, PAX DR OUT HNDL caution messages are not shown.
2. Make sure the passenger door is in the closed position with the interior lever and exterior handle in the locked position.

For an inoperative galley service door, do as follows:

1. On the EICAS Primary display, make sure the SERVICE DOOR caution message is not shown.
2. Make sure the galley service door is in the closed position with the interior and exterior handles in the locked position.

For an inoperative overwing emergency exit, do as follows:

1. On the EICAS Primary display, make sure the L(R) EMER DOOR caution message is not shown.
2. Make sure the overwing emergency exit door is in the closed position with the interior handle in the locked position and the exterior push plate is closed.

(D) DISPATCH.

Ensure this flight is planned as a non-revenue flight.

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MEL	Balance Springs - Aft Cargo Compartment Door	Repair Category	Quantity Installed	Minimum Required
52-31-01-2		C	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) One may be inoperative provided door is verified operative (opens and closes) without any interference and affected spring is deactivated.

• Note •

This will cause the door to close much faster.

• Note •

Cargo Door Hold Open Strap can be used to secure door in open position.

PLACARD.

Not required.

(M) MAINTENANCE.

For an inoperative Aft Cargo Compartment Door Balance Spring, do as follows:

1. Do the deactivation of the Aft Baggage Bay Door Balance Spring assembly (refer to AMM TASK 52-31-17-040-801).

• Note •

Only one (1) balance spring can be deferred.

(O) OPERATIONS.

Ensure the red hold open strap is used to secure the aft cargo compartment door.

(D) DISPATCH.

Dispatch will notify downline station that the aft cargo door will require a hold open strap to be used to keep the door open.

MMEL 20	END	25 OCT 19
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MEL	Forward Cargo Compartment Protector Kits (Vent Flap Protector Kit)	Repair Category	Quantity Installed	Minimum Required
52-35-01-2		D	2	0

REMARKS AND EXCEPTIONS.

(M) May be inoperative provided:

- a. Affected protector kit is removed,
- b. Associated vent flap mechanism is visually inspected for damage and checked for correct operation, and
- c. Associated cargo compartment or sub-compartment remains empty.

PLACARD.

Place a placard/sticker inside the forward baggage bay door, and/or

Place a placard/sticker inside the center baggage bay door.

(M) MAINTENANCE.

If the forward baggage bay is empty, do as follows:

1. Remove the affected forward baggage bay door protector kit (refer to AMM TASK 52-35-31-000-801).
2. Do a detailed inspection of the forward baggage bay door (refer to AMM TASK 52-35-00-220-805).
3. Do an operational test of the forward baggage bay door (refer to AMM TASK 52-35-00-710-801).
4. If the center baggage bay is empty, do as follows:
5. Remove the center baggage bay door protector kit (refer to AMM TASK 52-35-31-000-801).
6. Do a detailed inspection of the center baggage bay door (refer to AMM TASK 52-35-00-220-805).
7. Do an operational test of the center baggage bay door (refer to AMM TASK 52-35-00-710-801).

(O) OPERATIONS.

Not required.

- OR OPTION 2 -**PLACARD.**

Place a placard/sticker inside the forward baggage bay door, and/or

Place a placard/sticker inside the center baggage bay door.

(M) MAINTENANCE.

If the forward baggage bay is empty, do as follows:

1. Remove the affected protector kit (refer to AMM TASK 52-35-31-000-801).
2. Do a detailed inspection of the forward baggage bay door (refer to AMM TASK 52-35-00-220-805).
3. Do an operational test of the forward baggage bay door (refer to AMM TASK 52-35-00-710-801).
4. When the forward baggage bay is filled, do as follows:
 - a. Make sure that the cargo in the forward baggage bay is correctly attached.
 - b. Do a general visual inspection of the forward cargo compartment restraint nets and attachments (refer to AMM TASK 25-51-01-220-802).
 - c. Make sure that the cargo cannot touch the forward baggage bay door or its mechanism.

Continued

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MEL	Forward Cargo Compartment Protector Kits (Vent Flap Protector Kit) (Continued)	Repair Category	Quantity Installed	Minimum Required
52-35-01-2		D	2	0
If the center baggage bay is used, do as follows:				
<ol style="list-style-type: none"> 1. Remove the center baggage bay door protector kit (refer to AMM TASK 52-35-31-000-801). 2. Do a detailed inspection of the center baggage bay door (refer to AMM TASK 52-35-00-220-805). 3. Do an operational test of the center baggage bay door (refer to AMM TASK 52-35-00-710-801). 4. When the center baggage bay is filled, do as follows: <ol style="list-style-type: none"> a. Make sure that the cargo in the center baggage bay is correctly attached. b. Do a general visual inspection of the center cargo compartment restraint nets and attachments (refer to AMM TASK 25-51-01-220-802). c. Make sure that the cargo cannot touch the center baggage bay door or its mechanism. 				
(O) OPERATIONS. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Flight Deck Security Door (CFR 25.795 Compliant) - Door Latch	Repair Category	Quantity Installed	Minimum Required
52-51-01-1		A	1	0
REMARKS AND EXCEPTIONS. May be inoperative provided:				
<ol style="list-style-type: none"> a. Door Dead Bolt is operative, b. Door Dead Bolt is used to lock and unlock the door, and c. Repairs are made within two flight days 				
PLACARD. Place a placard/sticker on the inside of the Flight Deck Security door.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

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MEL	Flight Deck Security Door (CFR 25.795 Compliant) - Flight Deck Door Panel Pressure Relief Latches	Repair Category	Quantity Installed	Minimum Required
52-51-01-2		A	2	0
REMARKS AND EXCEPTIONS.				
May be inoperative in the latched position provided repairs are made within two flight days.				
PLACARD. Place a placard/sticker on the inside of the Flight Deck Security door.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Flight Deck Security Door (CFR 25.795 Compliant) - Dead Bolt	Repair Category	Quantity Installed	Minimum Required
52-51-01-3		A	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided:				
a. Door latch is operative, and b. Repairs are made within two flight days.				
PLACARD. Place a placard/sticker on the inside of the Flight Deck Security door.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
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MEL	Passenger Door Indication System	Repair Category	Quantity Installed	Minimum Required
52-70-01-3		A	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided before each flight:

- a. Door is CLOSED, LATCHED and LOCKED,
- b. Internal green witness marks on four door latch pins are aligned,
- c. Green witness marks on the two upper roll latches are aligned,
- d. Green witness mark on upper lock on upper roll shaft is aligned,
- e. Door lock flag indicator indicates LOCKED,
- f. External handle is verified STOWED,
- g. External pressure vent flap is verified fully CLOSED,
- h. No door warning (red) EICAS message is displayed,
- i. Ground Valve (Avionics Cooling) is considered inoperative, and
- j. Repairs are made within three flight days.

• Note •

Ground Valve (Avionics Cooling) must be deferred under MEL 21-24-07.**PLACARD.**

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Before each flight:**

Make sure that the passenger door is CLOSED, LATCHED and LOCKED as follows:

1. Make sure the passenger door is in the closed position with the inner handle fully down in the stowed detent.
2. Check the four latch pin indicator windows to make sure that the latch pin green witness marks are aligned.
3. Check the two upper roll latches to make sure that the green witness marks are aligned.
4. Check the upper lock on the upper roll shaft to make sure that the green witness marks are aligned.
5. Check that the LOCKED/UNLCKD indicator shows locked.

• Note •

**ACARS times will NOT be automatically generated; “OOOI” times
will be called to station operations.****(D) DISPATCH.**

Ensure the following remark is added to the release “Please confirm all OOOI times with dispatch as soon as able.”

MMEL 20	END	25 OCT 19
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MEL	Avionic Compartment Door Indication System	Repair Category	Quantity Installed	Minimum Required
52-70-02		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative provided before each flight:				
<ul style="list-style-type: none"> a. Door is CLOSED, LATCHED, and LOCKED, and b. Handle is verified STOWED. 				
PLACARD.				
Place a placard/sticker below the EICAS Secondary display.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
<u>Before each flight:</u>				
• Note •				
As part of the pre-flight check, make sure that the avionic compartment door is in the closed position with the handle locked and in the recess and that the trigger plate is latched (handle stowed position).				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

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MEL	Overwing Emergency Exit Indication Systems	Repair Category	Quantity Installed	Minimum Required
52-70-03		C	4	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided before each flight:

- a. Affected door is CLOSED, LATCHED and LOCKED, and
- b. External push plate is verified FLUSH.

• Note •

The L(R) EMER DOOR caution message may be displayed continuously on the EICAS primary page.

PLACARD.

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

• Note •

The L(R) EMER DOOR caution message may be displayed continuously on the EICAS primary page.

Before each flight:

For an inoperative overwing emergency exit indication system, do as follows:

1. From inside of the aircraft, make sure that L and R Overwing Emergency Exit Door is all the way into the exit opening with the perimeter of the exit flush with the side wall panel.
2. Make sure the L and R Overwing Emergency Exit Door interior EXIT-PULL handle is pushed into the locked position.
3. Make sure that the L and R Overwing Emergency Exit Door exterior push plate is flush to the door skin (locked position).

(D) DISPATCH.

Ensure the following remark is added to the release "Please confirm all OOOI times with dispatch as soon as able."

MMEL 20	END	25 OCT 19
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MEL	FWD Cargo Compartment Door Indication System	Repair Category	Quantity Installed	Minimum Required	
		C	1	0	
REMARKS AND EXCEPTIONS.					
(O) May be inoperative provided before each flight:					
<ul style="list-style-type: none"> a. Door is verified CLOSED, LATCHED and LOCKED, b. Handle is verified STOWED c. External pressure vent flap is verified CLOSED, and d. Gap between door and fuselage is verified not present. 					
PLACARD.					
Place a placard/sticker below the EICAS Secondary display.					
(M) MAINTENANCE.					
Not required.					
(O) OPERATIONS.					
<u>Before each flight:</u>					
• Note •					
The crew is to establish communication with ground personnel outside of the aircraft to make sure that the cargo compartment door is in the closed position with the handle locked and stowed, external pressure vent flap is verified closed and no gap is present between the door and fuselage.					
(D) DISPATCH.					
Not required.					
MMELO 20	END	25 OCT 19			

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MEL	CTR Cargo Compartment Door Indication System	Repair Category	Quantity Installed	Minimum Required
52-70-04-2		C	1	0

REMARKS AND EXCEPTIONS.

(O) May be inoperative provided before each flight:

- a. Door is verified CLOSED, LATCHED and LOCKED,
- b. Handle is verified STOWED
- c. External pressure vent flap is verified CLOSED, and
- d. Gap between door and fuselage is verified not present.

PLACARD.

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Before each flight:**

• Note •

The crew is to establish communication with ground personnel outside of the aircraft to make sure that the cargo compartment door is in the closed position with the handle locked and stowed, external pressure vent flap is verified closed and no gap is present between the door and fuselage.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Cargo Compartment Door Indication System - AFT	Repair Category	Quantity Installed	Minimum Required
52-70-04-3		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided before each flight:

- a. Door is CLOSED, LATCHED and LOCKED, and
- b. Handle is verified STOWED.

PLACARD.

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.**Before each flight:**

• Note •

The crew is to establish communication with ground personnel outside of the aircraft to make sure that the cargo compartment door is in the closed position with the handle locked and in the recess and that the trigger plate is latched (handle stowed position).

• Note •

ACARS times will NOT be automatically generated; “OOOI” times will be called to station operations.

(D) DISPATCH.

ACARS times will not be automatically generated. The dispatcher will enter a remark on the flight release reminding the crew to report their times via ACARS.

MMEL 20	END	25 OCT 19
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MEL	Service Door Indication System - FWD	Repair Category	Quantity Installed	Minimum Required
52-70-05-3a		C	1	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided before each flight:

- a. Door is CLOSED, LATCHED and LOCKED,
- b. Handle is verified stowed,
- c. External pressure vent flap is verified CLOSED, and
- d. Ground Valve (Avionics Cooling) is considered inoperative.

• Note •

Ground Valve (Avionics Cooling) must be deferred under MEL 21-24-07.**PLACARD.**

Place a placard/sticker below the EICAS Secondary display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Before each flight with the door closed:

1. Make sure the service door is in the closed position with the inner handle in the locked position.
2. Verify the correct indication of the door latch through the indicator window located at the lower aft corner of the door.

• Note •

The green mark on the indicator sector aligns with the green mark on the indicator window.

3. Have ground personnel make sure that the service door external handle is locked and in the recess.

(D) DISPATCH.

Ensure the following remark is added to the release "Please confirm all OOOI times with dispatch as soon as able."

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ATA Chapter 52: Doors

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ATA Chapter 73: Engine Fuel & Control

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ATA Chapter 73: Engine Fuel & Control

MEL	Full Authority Digital Engine Control System (FADEC)	Repair Category	Quantity Installed	Minimum Required
73-21-01		A	1	1

REMARKS AND EXCEPTIONS.

System redundancy may be degraded as indicated by "L FADEC FAULT 1" status message provided:

- a. "R FADEC FAULT 1" status message is not displayed, and
- b. Repairs are made within 10 calendar days.

PLACARD.

Place a placard/sticker below the Primary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

System redundancy may be degraded as indicated by "R FADEC FAULT 1" status message provided:

- a. "L FADEC FAULT 1" status message is not displayed, and
- b. Repairs are made within 10 calendar days.

PLACARD.

Place a placard/sticker below the Primary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 3 -**REMARKS AND EXCEPTIONS.**

(M) System redundancy may be degraded as indicated by "L FADEC FAULT 1" and "R FADEC FAULT 1" status messages provided:

- a. Not-dispatchable FADEC failures are verified not present on both engines, and
- b. Repairs are made within 10 calendar days.

PLACARD.

Place a placard/sticker below the Primary EICAS display.

Continued

MEL	Full Authority Digital Engine Control System (FADEC) (Continued)	Repair Category	Quantity Installed	Minimum Required
73-21-01		A	1	1

(M) MAINTENANCE.

After the failure occurred, make sure that non-dispatchable engine FADEC failures are not present as follows:

1. On the FS280.00 bulkhead panel behind the pilot seat, set the MAINT switch to MFD1 or MFD2.
2. On the multifunction display (MFD1 or MFD2), make sure that the MAINTENANCE MAIN MENU page shows.
3. On the Engine Control Panel (ECP), push the UP or DN pushbuttons to move the cursor (>) to the CURRENT FAULTS line.

• Note •

**The function of the pushbuttons on the ECP shows
at the bottom of the MFD display.**

4. On the ECP, push the SEL pushbutton to make a selection of the CURRENT FAULTS page.
5. Wait for a minimum of one minute until all of the faults show.
6. Make sure that any of these messages for both engine FADEC do not show at the same time, as follows:

• Note •

Dispatch is not permitted if any of these messages show for both engine FADEC.

- a. Look for the VGAL LRU messages as follows:

<u>MDC Message</u>	<u>LRU</u>	<u>ATA Chapter</u>
LVDT OUT OF RANGE CH A	VGAL (L VG ACTUATOR)	71-00
LVDT OUT OF RANGE CH B	VGAL (L VG ACTUATOR)	71-00
LVDT CH A/B DISAGREE	VGAL (L VG ACTUATOR)	71-00

- b. Look for the VGAR LRU messages as follows:

<u>MDC Message</u>	<u>LRU</u>	<u>ATA Chapter</u>
LVDT OUT OF RANGE CH A	VGAL (R VG ACTUATOR)	71-00
LVDT OUT OF RANGE CH B	VGAL (R VG ACTUATOR)	71-00
LVDT CH A/B DISAGREE	VGAL (R VG ACTUATOR)	71-00

Continued

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MEL	Full Authority Digital Engine Control System (FADEC) (Continued)	Repair Category	Quantity Installed	Minimum Required
73-21-01		A	1	1

7. Make sure that the same messages for both engine FADEC do not show at the same time, as follows:

• Note •

Dispatch is not permitted if the same messages show for both engine FADEC.

- a. Look for the L MAIN FUEL PUMP messages as follows:

<u>MDC Message</u>	<u>LRU</u>	<u>ATA Chapter</u>
N2 OUT OF RANGE CH A&B	L MAIN FUEL PUMP	71-00
N2 CH A/B DISAGREE	L MAIN FUEL PUMP	71-00

- b. Look for the R MAIN FUEL PUMP messages as follows:

<u>MDC Message</u>	<u>LRU</u>	<u>ATA Chapter</u>
N2 OUT OF RANGE CH A&B	R MAIN FUEL PUMP	71-00
N2 CH A/B DISAGREE	R MAIN FUEL PUMP	71-00

8. On the ECP, push the DOORS pushbutton to go back to the MAINTENANCE MAIN MENU page.
 9. On the ECP, push the UP or DN pushbutton to move the cursor (>) to the ATA Index Line.
 10. Push the SEL pushbutton to make a selection of the ATA INDEX line.
 11. On the ATA INDEX page, get access to the ATA INDEX second page.
 12. Through the ATA 71-00 page, select the LRU alternatively, VGAL and VGAR.
 13. Make sure that any of these bits are not set to 1 on the label for both engines.

• Note •

Dispatch is not permitted if any of these bits are set to 1 on the same label for both engine FADEC.

- a. Look for the bits and labels for the VGAL LRU as follows:

<u>LABEL</u>	<u>BIT</u>	<u>LRU</u>	<u>ATA Chapter</u>
355A	19	VGAL (L VG ACTUATOR)	71-00
355B	19	VGAL (L VG ACTUATOR)	71-00
355A	24	VGAL (L VG ACTUATOR)	71-00
355B	24	VGAL (L VG ACTUATOR)	71-00

Continued

MEL	Full Authority Digital Engine Control System (FADEC) (Continued)	Repair Category	Quantity Installed	Minimum Required
73-21-01		A	1	1

b. Look for the bits and labels for the VGAR LRU as follows:

LABEL	BIT	LRU	ATA Chapter
355A	19	VGAR (R VG ACTUATOR)	71-00
355B	19	VGAR (R VG ACTUATOR)	71-00
355A	24	VGAR (R VG ACTUATOR)	71-00
355B	24	VGAR (R VG ACTUATOR)	71-00

14. Through the ATA 71-00 page, select the LRU alternatively, L MAIN FUEL PUMP and R MAIN FUEL PUMP.

15. Make sure that the bit is not set to 1 on the label for both engines.

• Note •

**Dispatch is not permitted if the same bit is set to 1 on
the same label for both engine FADEC.**

a. Look for the bits and labels for LRU, L MAIN FUEL PUMP as follows:

LABEL	BIT	LRU	ATA Chapter
353A	14	L MAIN FUEL PUMP	71-00
353B	14	L MAIN FUEL PUMP	71-00
353A	16	L MAIN FUEL PUMP	71-00
353B	16	L MAIN FUEL PUMP	71-00

b. Look for the bits and labels for LRU, R MAIN FUEL PUMP as follows:

LABEL	BIT	LRU	ATA Chapter
353A	14	R MAIN FUEL PUMP	71-00
353B	14	R MAIN FUEL PUMP	71-00
353A	16	R MAIN FUEL PUMP	71-00
353B	16	R MAIN FUEL PUMP	71-00

16. Exit from the MDC as follows:

- On the ECP, push the MENU pushbutton to go back to the MAIN MENU page.
- On the FS280.00 bulkhead behind the pilot seat, set the MAINT switch to OFF.
- Make sure the navigation data shows on the MFD 1 (MFD 2).

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

Continued

ATA Chapter 73: Engine Fuel & Control

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MEL	Full Authority Digital Engine Control System (FADEC) (Continued)	Repair Category	Quantity Installed	Minimum Required
73-21-01		A	1	1

- OR OPTION 4 -**REMARKS AND EXCEPTIONS.**

System redundancy may be degraded as indicated by "L FADEC FAULT 2" status message provided repairs are made within 30 calendar days.

PLACARD.

Place a placard/sticker below the Primary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

- OR OPTION 5 -**REMARKS AND EXCEPTIONS.**

System redundancy may be degraded as indicated by "R FADEC FAULT 2" status message provided repairs are made within 30 calendar days.

PLACARD.

Place a placard/sticker below the Primary EICAS display.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Fuel Low Pressure Indicating Systems	Repair Category	Quantity Installed	Minimum Required
73-31-03		B	2	1
REMARKS AND EXCEPTIONS.				
(O) May be inoperative provided:				
<ul style="list-style-type: none"> a. Both Fuel Boost Pumps are operative, and b. Monitor fuel level and quantity during flight. <p style="text-align: center;">• Note •</p> <p style="text-align: center;">Fuel system check valve test (First flight of day – Before Engine Shutdown) is waived for the inoperative fuel low pressure indication.</p>				
PLACARD.				
A. Put a L (or R) FUEL LOW PRESSURE INDICATING SYSTEM INOPERATIVE placard below the secondary EICAS display unit.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
For a subsequent in-flight failure with an inoperative fuel low pressure indicating system.				
<ol style="list-style-type: none"> 1. If the L (R) MAIN EJECTOR and/or the L (R) SCAV EJECTOR caution message(s) appears for the affected side, do as follows: <ul style="list-style-type: none"> a. Monitor the fuel flow indication for the affected engine. b. Monitor the fuel quantities. 				
<u>If fuel tank quantity is depleting abnormally</u> <ol style="list-style-type: none"> c. Do the QRH ABNORMAL PROCEDURES Fuel, L FUEL LO PRESS or R FUEL LO PRESS. 				
(D) DISPATCH.				
Not required.				
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MEL	Fuel Feed Temperature Indicating System	Repair Category	Quantity Installed	Minimum Required
73-31-04		C	2	1
REMARKS AND EXCEPTIONS.				
(O) One may be inoperative provided EICAS oil temperature readout is checked to be stable within limits before each flight				
PLACARD. Place a placard/sticker below the secondary EICAS display.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS.				
<u>Before each flight:</u>				
Verify the EICAS oil temperature readout is checked to be stable within limits.				
(D) DISPATCH. Not required.				
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ATA Chapter 74: Ignition

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ATA Chapter 74: Ignition

MEL	Ignition System - A Systems	Repair Category	Quantity Installed	Minimum Required
74-11-01-2a		B	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative provided both B Systems are operative.

PLACARD.

Place a placard/sticker on the Engine START/IGNITION panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative ignition system(s), do as follows before engine start:

1. When ready to start the affected engine, do as follows:
 - a. On the ENGINE/START and IGNITION control panel, push the IGNITION switch.

• Note •

The switch will come on and the CONT IGNITION status message will show on the EICAS secondary page.
 - b. On the ENGINE/START and IGNITION control panel, push the affected engine (L or R) START switch.

• Note •

The L(R) ENGINE START status message will show on the EICAS secondary page.
2. When N2 reaches 20% RPM and ITT is below 120 degrees C, do as follows:
 - a. Advance affected engine L(R) thrust lever to idle.

• Note •

Fuel flow increasing and L(R) AUTO IGNITION advisory message shows on the EICAS secondary page.
 - b. Check engine indications on the EICAS primary page.

• Note •

When continuous ignition is selected, the L(R) AUTO IGNITION advisory message is inhibited.
 - c. On the ENGINE/START and IGNITION control panel, push the IGNITION switch.

• Note •

The switch will go out and the CONT IGNITION status message will come out of view from the EICAS secondary page.

• Note •

For one inoperative ignition system, a minimum of 15 seconds delay may be required for light off at every second start after setting the thrust lever to idle.

(D) DISPATCH.

Not required.

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MEL	Repair Category	Quantity Installed	Minimum Required
74-11-01-2b	B	2	0

REMARKS AND EXCEPTIONS.

(O) Both may be inoperative provided both A Systems are operative.

PLACARD.

Place a placard/sticker on the Engine START/IGNITION panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

For an inoperative ignition system(s), do as follows before engine start:

1. When ready to start the affected engine, do as follows:
 - a. On the ENGINE/START and IGNITION control panel, push the IGNITION switch.

• Note •

The switch will come on and the CONT IGNITION status message will show on the EICAS secondary page.
 - b. On the ENGINE/START and IGNITION control panel, push the affected engine (L or R) START switch.

• Note •

The L(R) ENGINE START status message will show on the EICAS secondary page.
2. When N2 reaches 20% RPM and ITT is below 120 degrees C, do as follows:
 - a. Advance affected engine L(R) thrust lever to idle.

• Note •

Fuel flow increasing and L(R) AUTO IGNITION advisory message shows on the EICAS secondary page.
 - b. Check engine indications on the EICAS primary page.

• Note •

When continuous ignition is selected, the L(R) AUTO IGNITION advisory message is inhibited.
 - c. On the ENGINE/START and IGNITION control panel, push the IGNITION switch.

• Note •

The switch will go out and the CONT IGNITION status message will come out of view from the EICAS secondary page.

• Note •

For one inoperative ignition system, a minimum of 15 seconds delay may be required for light off at every second start after setting the thrust lever to idle.

(D) DISPATCH.

Not required.

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MEL	IGNITION CONT "ON" Switch/Light (light function only)	Repair Category	Quantity Installed	Minimum Required
74-30-02		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the Engine START/IGNITION panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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ATA Chapter 76: Engine Controls

MEL	Sync SEL Switch	Repair Category	Quantity Installed	Minimum Required
76-10-01		C	1	0
REMARKS AND EXCEPTIONS.				
May be inoperative.				
PLACARD.				
Place a placard/sticker on the ENGINE START/IGNITION panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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MEL	Throttle Lever (FADEC) RVDTs	Repair Category	Quantity Installed	Minimum Required
76-11-03		C	4	2
REMARKS AND EXCEPTIONS.				
One per throttle may be inoperative.				
PLACARD.				
Place a placard/sticker on the ENGINE START/IGNITION panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
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ATA Chapter 77: Engine Indicating

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ATA Chapter 77: Engine Indicating

MEL	Repair Category	Quantity Installed	Minimum Required
77-31-01	B	2	1
REMARKS AND EXCEPTIONS.			
(O) (D) One may be inoperative provided:			
a. Operations are not conducted in known or forecast icing conditions, and			
b. Both Ice Detection Systems are operative.			
PLACARD.			
Place a placard/sticker below the EICAS Primary display.			
(M) MAINTENANCE.			
Not required.			
(O) OPERATIONS.			
• Note •			
Icing conditions exist in flight at a TAT of 10 °C (50 °F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40 °C (-40 °F) or below.			
(D) DISPATCH.			
Operations are not authorized into known or forecast icing conditions.			
• Note •			
Icing conditions exist in flight at a TAT of 10 °C (50 °F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when the SAT is -40 °C (-40 °F) or below.			
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ATA Chapter 78: Engine Exhaust

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ATA Chapter 78: Engine Exhaust

MEL	Thrust Reverser System	Repair Category	Quantity Installed	Minimum Required
78-30-01		C	2	1

REMARKS AND EXCEPTIONS.

(M) (O) (D) One may be inoperative provided:

- a. There is no structural damage to thrust reverser system beyond approved acceptable damage limits,
- b. Inoperative thrust reverser is deactivated, stowed, and locked in the forward thrust position, and
- c. Operations are conducted in accordance with one thrust reverser inoperative performance data.

PLACARD.

Place a placard/sticker on the affected Thrust Reverser on the THROTTLE QUADRANT.

(M) MAINTENANCE.

For a thrust reverser system inoperative, do as follows:

1. Do the deactivation of the thrust reverser (refer to AMM TASK 78-30-00-040-801).

• Note •

When the deactivation procedure is completed, the L(R) REV UNSAFE caution message or L(R) REV UNLOCKED caution message or L(R) REV INOP caution message may show continuously or intermittently on the EICAS primary page and the L(R) REV FAULT status message may show continuously or intermittently on the EICAS secondary page during aircraft operation, and the T/O CONFIG OK advisory message may not show on the EICAS secondary page before take-off.

• Note •

The red REV icon may show in the engine N1 gauge of the inoperative thrust reverser.

2. If there is structural damage on the affected thrust reverser, make sure that it is within approved serviceable damage limits.

• Note •

Refer to the Structure Repair Manual (SRM), CSP B-008, TASK 54-24-00 Thrust Reverser Structure.

3. If applicable, make sure that damage does not exceed the limits stated in the various related REO's example: REO 670-78-34-378- Wear limits for Upper and Lower Torque Box Frames.

Continued

MEL	Thrust Reverser System (Continued)	Repair Category	Quantity Installed	Minimum Required
78-30-01		C	2	1

(O) OPERATIONS.

For an inoperative thrust reverser, do as follows:

1. Ensure the Takeoff and Landing Report reflects performance data for one thrust reverser inoperative.

Before Each Takeoff:

Ensure the following items are configured for Takeoff

- Flaps - Set to 8 or 20 degrees as required
- Spoilers - Retracted to 0
- Parking Brake - Off
- Rudder Trim - Centered
- Aileron Trim - Centered
- Elevator Trim - Centered
- Autopilot - Disconnected

• Note •

The inoperative thrust reverser system switch must be kept to OFF, as required by the Maintenance procedure.

• Note •

When the deactivation procedure is completed, the L (R) REV UNSAFE caution message or the L (R) REV UNLOCKED caution message or L (R) REV INOP caution message can come into view continuously or intermittently on the EICAS during aircraft operation.

Caution

If required, use remaining thrust reverser carefully upon landing.

(D) DISPATCH.

Dispatcher must select "One Reverser Inop" take-off and landing performance in Dispatch Monitor.

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ATA Chapter 79: Engine Oil

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ATA Chapter 79: Engine Oil

MEL	Oil Replenishment System	Repair Category	Quantity Installed	Minimum Required
79-12-01		D	1	0
REMARKS AND EXCEPTIONS.				
(M) May be inoperative per maintenance procedure below for checking engine oil levels and servicing engine oil are established and used.				
PLACARD. Place a placard/sticker on the ENGINE OIL LEVEL Control Panel.				
(M) MAINTENANCE. Do the servicing of the Engine Oil Tank (refer to AMM TASK 79-10-00-612-801).				
(O) OPERATIONS. Not required.				
(D) DISPATCH. Not required.				
MMEL 20	END	25 OCT 19		

MEL	Engine Oil Filter Impending Bypass and Chip Detector Panel (Engine Oil Detection Panel)	Repair Category	Quantity Installed	Minimum Required								
79-21-01-3		C	1	0								
REMARKS AND EXCEPTIONS.												
(M) May be inoperative per maintenance procedure below and does not exceed 100 flight hours interval(s).												
PLACARD. Place a placard/sticker on the ENGINE OIL DETECTION Panel.												
(M) MAINTENANCE. For an inoperative engine oil filter impending bypass and chip detector panel, do as follows:												
1. Open access panel 311BB (Aft equipment compartment door).												
2. Open and collar the circuit breaker that follows:												
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; width: 25%;">CB PANEL</th> <th style="text-align: center; width: 25%;">CB NO.</th> <th style="text-align: center; width: 25%;">NAME</th> <th style="text-align: center; width: 25%;">ZONE</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">CBP-5</td> <td style="text-align: center;">B2</td> <td style="text-align: center;">ENG OIL IND</td> <td style="text-align: center;">311</td> </tr> </tbody> </table>					CB PANEL	CB NO.	NAME	ZONE	CBP-5	B2	ENG OIL IND	311
CB PANEL	CB NO.	NAME	ZONE									
CBP-5	B2	ENG OIL IND	311									
3. Remove the Engine Oil Detection panel as follows:												
a. Remove the screws and washers that attach the panel.												
b. Carefully pull the panel and disconnect the electrical connector A150P1.												

Continued

MEL	Engine Oil Filter Impending Bypass and Chip Detector Panel (Engine Oil Detection Panel) (Continued)	Repair Category	Quantity Installed	Minimum Required								
79-21-01-3		C	1	0								
4. With engine at idle, at the Engine Oil Detection Panel connector A150P1, check the continuity of the Oil Filter Impending Bypass Switch and the continuity of the Chip Detector as follows:												
a. Use a multimeter to check the continuity between pins.												
b. Make sure that the circuits that follow read OPEN:												
<u>Right</u>												
1. Between pin L and pin K, for the Oil Impending Bypass Switch.												
2. Between pin A and pin K, for the Oil Chip Detector.												
<u>Left</u>												
3. Between pin E and pin K, for the Oil Impending Bypass Switch.												
4. Between pin F and pin K, for the Oil Chip Detector.												
5. If the continuity does not read open, investigate the cause in accordance with the AMM.												
6. If the continuity reads open, continue with the procedure.												
7. Connect electrical connector A150P1 to the Engine Oil Detection Panel.												
8. Install the Engine Oil Detection Panel as follows:												
a. Attach the panel to the enclosure with the washer and screws.												
9. Close the circuit breaker that follows:												
<table> <thead> <tr> <th><u>CB PANEL</u></th> <th><u>CB NO.</u></th> <th><u>NAME</u></th> <th><u>ZONE</u></th> </tr> </thead> <tbody> <tr> <td>CBP-5</td> <td>B2</td> <td>ENG OIL IND</td> <td>311</td> </tr> </tbody> </table>					<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>	CBP-5	B2	ENG OIL IND	311
<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>									
CBP-5	B2	ENG OIL IND	311									
10. Close access panel 311BB (Aft equipment compartment door												
(O) OPERATIONS.												
Not required.												
(D) DISPATCH.												
Not required.												

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ATA Chapter 79: Engine Oil

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MEL	Low Oil Pressure Switch	Repair Category	Quantity Installed	Minimum Required
79-30-01		A	2	1

REMARKS AND EXCEPTIONS.

(O) One may be inoperative OPEN provided:

- a. Both oil pressure readouts are verified operative, and
- b. Repairs are made within one flight.

• Note •

If the Oil Pressure switch is OPEN,
the L(R) ENG OIL PRESS warning message is inoperative.

PLACARD.

Place a placard/sticker above the Integrated Standby Instrument (ISI) indicator.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Low oil pressure is to be monitored through the engine oil pressure readouts. Pressure readout indication flashes four seconds and turns to red when pressure drops below 25psi.

(D) DISPATCH.

Not required.

- OR OPTION 2 -**REMARKS AND EXCEPTIONS.**

(M) (O) One may be inoperative CLOSED provided:

- a. Both oil pressure readouts are verified operative,
- b. Inoperative Low Oil Pressure Switch is deactivated, and
- c. Repairs are made within one flight.

• Note •

If the Oil Pressure switch is CLOSED, the L(R) ENG OIL PRESS warning message
will continuously show unless deactivated.

• Note •

Aural warning "Engine Oil" will not be functional.

Continued

MEL	Low Oil Pressure Switch (Continued)	Repair Category	Quantity Installed	Minimum Required
79-30-01		A	2	1

PLACARD.

Place a placard/sticker above the Integrated Standby Instrument (ISI) indicator.

(M) MAINTENANCE.

For an inoperative Oil Pressure Switch, do as follows:

1. Open the aft equipment compartment door (access door 311BB).
2. For the left engine, open and collar the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	M1	L ENG OIL PRESS	221
CBP-1	M5	ENG START L	221
CBP-1 LOWER	U7	ENG IGN A	221
CBP-2	Q1	EICAS DCU 1	222
CBP-2	Q2	EICAS DCU 2	222
CBP-2 LOWER	S5	THRUST REV 1	222
CBP-2 LOWER	U8	EICAS DCU 1	222

3. For the right engine, open and collar the circuit breakers that follow:

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-1	M4	ENG START R	221
CBP-1 LOWER	U7	ENG IGN A	221
CBP-2	Q1	EICAS DCU 1	222
CBP-2	Q2	EICAS DCU 2	222
CBP-2 LOWER	S6	THRUST REV 2	222
CBP-2 LOWER	U8	EICAS DCU 1	222
CBP-2 LOWER	S7	R ENG OIL PRESS	222

4. Open the aft equipment compartment door (access door 311BB).

<u>CB PANEL</u>	<u>CB NO.</u>	<u>NAME</u>	<u>ZONE</u>
CBP-5	B10	ENG ING B	311

5. Open and collar the circuit breaker that follows:

6. Open the engine cowlings (refer to AMM TASK 71-10-00-010-801).

Continued

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MEL	Low Oil Pressure Switch (Continued)	Repair Category	Quantity Installed	Minimum Required
79-30-01		A	2	1

7. Disconnect the W5 green cable P36 from the oil pressure switch S19 as follows:

Caution

Do not try to loosen the hex flat or the backshell and do not use an unauthorized tool to loosen the knurled coupling. Otherwise, you may cause damage to the electrical cable.

- a. Hold the hex flat and use soft-jaw pliers to fully loosen the knurled coupling of the cable.
- b. Apply side-to-side pressure and pull the backshell to disconnect the cable.
- c. Install protective covers on all of the connector/connection.
8. Stow and secure the electrical connector.
9. Close the engine cowlings (refer to AMM TASK 71-10-00-410-801).
10. Remove collars and close the circuit breakers that were previously opened.
11. Close the aft equipment compartment door (access door 311BB).

(O) OPERATIONS.

Since the oil pressure switch might have failed closed, "L or R ENG OIL PRESS" warning message may be displayed on EICAS.

When the oil pressure switch is deactivated, do not expect the aural warning "Engine Oil".

Low oil pressure is to be monitored through the engine oil pressure readouts. Pressure readout indication flashes four seconds and turns red when pressure drops below 25 psi.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Engine Oil Level Indications	Repair Category	Quantity Installed	Minimum Required
79-30-03		C	2	0
REMARKS AND EXCEPTIONS.				
(M) Both may be inoperative provided:				
a. Engine Oil reservoir is refilled within the permissible time interval, and				
b. There is no evidence of excessive oil consumption.				
PLACARD.				
Place a placard/sticker below the EICAS Secondary display.				
(M) MAINTENANCE.				
Do the servicing of the Engine Oil Tank (refer to AMM TASK 79-10-00-612-801).				
OR				
Do the servicing of the Engine Oil Tank using the oil replenishment system (refer to AMM TASK 12-13-79-612-801-A02-PSA)				
Caution				
EXAMINE THE OIL QUANTITY BETWEEN 5 MINUTES AND 30 MINUTES AFTER YOU STOP THE ENGINE. IF YOU DO NOT DO THIS, THE QUANTITY INDICATION WILL BE INCORRECT AND YOU CAN FILL THE ENGINE WITH TOO MUCH OIL. THIS CAN CAUSE DAMAGE TO THE ENGINE.				
(O) OPERATIONS.				
Not required.				
(D) DISPATCH.				
Not required.				
MMEL 20	END	25 OCT 19		

ATA Chapter 80: Starting

<u>Item</u>	<u>Page</u>
Engine L/R “STOP” Switchlights (light function only)	1
Engine “Start” Switchlights (light function only)	1
Starter Air Valves	2

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ATA Chapter 80: Starting

MEL	Repair Category	Quantity Installed	Minimum Required
80-10-01	C	2	0

REMARKS AND EXCEPTIONS.

Both may be inoperative provided N₂ is monitored.

PLACARD.

Place a placard/sticker on the ENGINE START/IGNITION Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Repair Category	Quantity Installed	Minimum Required
80-10-02	C	2	0

REMARKS AND EXCEPTIONS.

May be inoperative.

PLACARD.

Place a placard/sticker on the ENGINE START/IGNITION Control Panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Not required.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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MEL	Starter Air Valves	Repair Category	Quantity Installed	Minimum Required
80-11-01		C	2	1

REMARKS AND EXCEPTIONS.

(M)(O) One may be inoperative CLOSED provided alternate starting procedures below used.

PLACARD.

Place a placard/sticker on the ENGINE START/IGNITION Control Panel.

(M) MAINTENANCE.

1. Do the manual operation of the Starter Control Valve (refer to AMM TASK 80-11-03-980-801).
2. Following a successful engine start, communicate to the flight crew via radio or ground communication that tools, personnel and equipment are clear of the aircraft.

• Note •

AML entry not required upon successful engine start.

(O) OPERATIONS.**Before each flight, do as follows:**

1. Establish communication between flight deck and ground crew.
2. On the EICAS control panel (ECP), press the ECS pushbutton to get access to the Environmental Control System (ECS) synoptic page.
3. Make sure sufficient start air pressure is available.
4. Announce "Open Starter Air Valve" to the maintenance crew.
5. Select the affected engine START switch.
6. When N₂ reaches 20%, advance Thrust Lever to IDLE.
7. At 50% N₂, announce "Close Starter Air Valve" to the maintenance crew.
8. Monitor engine indication to be within limits during start.
9. Do not move aircraft or throttle up engines following successful start until cleared by the technician that tools and equipment are clear of the aircraft.

• Note •

AML entry not required upon successful engine start.

If an in-flight engine restart is necessary, do as follows:

1. Refer to the QRH Abnormal, Windmilling Relight procedure.

(D) DISPATCH.

Not required.

MMEL 20	END	25 OCT 19
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ATA Chapter 90: Administrative Control

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Passenger Door Vent Flap Ice Break Cable	2
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ACI	RVSM Status	Repair Category	Quantity Installed	Minimum Required
90-10-01		N/A	0	0
REMARKS AND EXCEPTIONS.				
(O) (D) May be inoperative provided the aircraft is not operated in RVSM airspace. Reference PSA GMM Appendix E for RVSM program.				
PLACARD. Place a placard/sticker below the Captain's EFIS Multifunction Display.				
(M) MAINTENANCE. Not required.				
(O) OPERATIONS. For inoperative RVSM status, do as follows:				
1. Ensure aircraft is not operated in RVSM airspace without prior ATC approval. 2. Ensure the appropriate aircraft identifier on the flight plan is used.				
(D) DISPATCH. Operations are not permitted in RVSM airspace; ensure the flight is filed at FL280 or below and the ATC flight strip reflects the lack of RVSM capability.				
a. In the ICAO format, remove W from the ATC flight strip.				
MMEL N/A	END			N/A

ACI	Passenger Door Vent Flap Ice Break Cable	Repair Category	Quantity Installed	Minimum Required
90-10-2		N/A	1	0
REMARKS AND EXCEPTIONS.				
(O) (D) Cable may be damaged or missing provided. Reference Bombardier Service Letter 52-014A:				
a. Operations are not conducted in known or forecast icing conditions				
PLACARD.				
Place a placard/sticker below the Door Assist switch on the forward Flight Attendant's Panel.				
(M) MAINTENANCE.				
Not required.				
(O) OPERATIONS.				
Operations in known or forecast icing conditions are NOT permitted.				
• Note •				
Icing conditions exist in flight at a TAT of 10 °C (50 °F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when SAT is -40 °C (-40 °F) or below.				
(D) DISPATCH.				
Operations may not be conducted in known or forecast icing conditions.				
• Note •				
Icing conditions exist in flight at a TAT of 10 °C (50 °F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet, or ice crystals), except when SAT is -40 °C (-40 °F) or below.				
MMEL N/A	END			N/A

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ACI	Category II Approach Status	Repair Category	Quantity Installed	Minimum Required
90-10-04		N/A	0	0

REMARKS AND EXCEPTIONS.

(O) (D) May be inoperative provided aircraft does not conduct Category II approaches per PSA GMM Appendix D.

PLACARD.

Place a placard/sticker below the Captain's EFIS Multifunction Display that reads as follows:

CAT II INOP
per ACI 90-10-04

DATE: _____

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Ensure flight is not planned using Category II approach minimums.

(D) DISPATCH.

Ensure flight is not planned using Category II approach minimums.

MMEL N/A	END	N/A
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ACI	Concession Support Letter (CSL)	Repair Category	Quantity Installed	Minimum Required
90-10-08		N/A	0	0
REMARKS AND EXCEPTIONS.				
(M)(O)(D) Continued operation is permissible under guidance of approved CSL (Reference applicable CSL for limitations and procedures).				
PLACARD. Place a placard/sticker below the Captain's EFIS Multifunction Display. (M)(O)(D) Deviate from normal aircraft operation in accordance with CSL instructions:				
<ul style="list-style-type: none"> a. Repairs are made within CSL guidelines. <p style="text-align: center;">• Note •</p> <p style="text-align: center;">Only approved authorities can provide operational deviation in the form of a CSL or equivalent.</p> <ul style="list-style-type: none"> b. Contact Manager of Dispatch, Fleet Manager, or EFB Specialist to have a copy of the document uploaded to appropriate aircraft MEL collection within Comply 365. 				
(M) MAINTENANCE. If required per CSL.				
(O) OPERATIONS. If required per CSL.				
(D) DISPATCH. If required per CSL.				
MMEL N/A	END		N/A	

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ACI	Flight Management Systems FMS – Navigation Databases (Dual FMS Installation)	Repair Category	Quantity Installed	Minimum Required
90-10-09A		N/A	2	0

REMARKS AND EXCEPTIONS.

(O) May be out of currency provided:

- a. Pilots follow procedures outlined in the POH Chapter 5: Supplemental.

PLACARD.

Place a placard/sticker below the FMS CDU panel.

(M) MAINTENANCE.

Not required.

(O) OPERATIONS.

Follow guidance in POH Chapter 5: Supplemental.

(D) DISPATCH.

Not required.

MMEL N/A	END	N/A		
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ACI	Flightdeck Documentation (Missing or Unusable)	Repair Category	Quantity Installed	Minimum Required
90-10-10		N/A	0	0

REMARKS AND EXCEPTIONS.

(O) Continued operation is permissible provided missing or unusable documentation is replaced at the next station where stock exists.

PLACARD.

Place a placard/sticker below the Captain's EFIS Multifunction Display.

• Note •

The Quick Reference Handbook (QRH) cannot be missing or have missing pages.

(M) MAINTENANCE.

Coordinate the materials department to determine where replacement(s) are available and have the documentation replaced at the next available opportunity

(O) OPERATIONS.

Follow POH guidance

(D) DISPATCH.

Not required.

MMEL N/A	END	N/A		
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ACI	Aircraft Registration / Airworthiness Certificate(s)	Repair Category	Quantity Installed	Minimum Required	
		N/A	N/A	N/A	
REMARKS AND EXCEPTIONS.					
(M/FC) (O) (D) May be missing or damaged. The privileges of this exemption may only be exercised when the affected flight is an intrastate operation that does not involve flight through international airspace or operates totally within the 48 contiguous states of the United States including the District of Columbia.					
PLACARD.					
Place a placard/sticker below the Captain's EFIS Multifunction Display.					
• Note •					
A copy of Exemption 11498 and Ops Spec A005 can be found in Comply365, Operations Specifications collection.					
(M/FC) MAINTENANCE.					
The following statement must be entered into the corrective action block of the AML.					
"This aircraft is operated without a certificate of registration (of airworthiness, as applicable) under the provisions of Exemption No. 11498 (as amended) for a period of 3 working days, not including weekends or Federal holidays, beginning: TIME: _____ DATE: _____. "					
(O) OPERATIONS.					
Ensure routing is restricted to domestic flying only.					
(D) DISPATCH.					
Ensure routing is restricted to domestic flying only.					
MMEL N/A	END	N/A			

ACI	Passenger Briefing System (Pre-Recorded Announcements)	Repair Category	Quantity Installed	Minimum Required	
		N/A	1	0	
REMARKS AND EXCEPTIONS.					
(O) May be incorrect or out of date provided Operations procedures listed in MEL 23-31-01 are followed.					
PLACARD.					
Place a placard/sticker on the Control Panel for the cabin briefer.					
(M) MAINTENANCE.					
Not Required.					
(O) OPERATIONS.					
Follow guidance listed in MEL 23-31-01 (O) Procedures.					
(D) DISPATCH.					
Not Required.					
MMEL N/A	END	N/A			