



## MALAYSIA AIRLINES BERHAD



**B737-800  
MINIMUM EQUIPMENT LIST  
(MEL)**





BOEING B737-800  
MINIMUM EQUIPMENT LIST

Preface

Preface

Revision Transmittal Letter

Malaysia Airlines Berhad B737-800 Minimum Equipment List Revision Number 10 (MAB B737-800 MEL REV NO: 10) is a partial revision due to operational requirement. This MEL revision is mainly based on the current Boeing DDG Revision 57 dated July 15, 2020 and which in accordance with FAA 737 MMEL Revision 61.

FILING INSTRUCTION

1. File the MEL pages as per List of Effective Pages (LEP). Refer LEP page LEP-1 to LEP-10.
2. Record the incorporation of this MAB B737-800 MEL REV NO: 10 dated Nov 23, 2022 in the MAB Revision Record Sheet.
3. File this Transmittal Letter after the MAB Revision Record Sheet for record / reference purposes.

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CHECKED BY :

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Civil Aviation Authority of Malaysia  
CIVIL AVIATION AUTHORITY MALAYSIA (CAAM)  
23/12/2022



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DATE:  
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Nov 23, 2022

Issued by the Technical Services Department, Malaysia Airlines Berhad

REV NO: 10

P.00-01-00.1

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Preface

Revision Highlight

MAB Revision No.: 10

**PREFACE**

**REVISION TRANSMITTAL LETTER**

ITEM OR PAGE NUMBER	REASON FOR CHANGE
P.00-01-00.1	New Transmittal Letter for MAB Revision No: 10

**LIST OF EFFECTIVE PAGES**

ITEM OR PAGE NUMBER	REASON FOR CHANGE
LEP	New List of Effective Pages for MAB Revision No: 10

**SECTION 1 : INTRODUCTION**

**PREAMBLE AND DEFINITIONS**

ITEM OR PAGE NUMBER	REASON FOR CHANGE
1.00-01.20	Updated Number Installed and Number Required for Portable Oxygen

**SECTION 2: MEL**

**ATA 35: OXYGEN**

ITEM OR PAGE NUMBER	REASON FOR CHANGE
35-04-02	Updated Number Required to 4. Updated Table in proviso.

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 List of Effective Pages

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2.21	- 01 .2	Aug 10, 2020
2.21	- 01 .3	Aug 10, 2020

2.21	- 02 .1	Aug 10, 2020
2.21	- 02 .2	Aug 10, 2020
2.21	- 02 .3	Aug 10, 2020
2.21	- 02 .4	Aug 10, 2020
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2.21	- 03 .1	Aug 10, 2020
2.21	- 03 .2	Aug 10, 2020
2.21	- 05 .1	Aug 10, 2020
2.21	- 05 .2	Aug 10, 2020
2.21	- 05 .3	Aug 10, 2020
2.21	- 05 .4	Aug 10, 2020
2.21	- 07 .1	Aug 10, 2020
2.21	- 10 .1	Aug 10, 2020
2.21	- 10 .2	Aug 10, 2020
2.21	- 11 .1	Aug 10, 2020
2.21	- 11 .2	Aug 10, 2020
2.21	- 12 .1	Aug 10, 2020
2.21	- 12 .2	Aug 10, 2020
2.21	- 13 .1	Aug 10, 2020
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2.21	- 15 .1	Aug 10, 2020
2.21	- 15 .2	Aug 10, 2020
2.21	- 16 .1	Aug 10, 2020
2.21	- 16 .2	Aug 10, 2020
2.21	- 17 .1	Aug 10, 2020
2.21	- 18 .1	Aug 10, 2020
2.21	- 19 .1	Aug 10, 2020
2.21	- 19 .2	Aug 10, 2020
2.21	- 20 .1	Aug 10, 2020
2.21	- 21 .1	Aug 10, 2020
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2.21	- 21 .3	Aug 10, 2020
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2.21	- 27 .1	Aug 10, 2020
2.21	- 27 .2	Aug 10, 2020
2.21	- 31 .1	Aug 10, 2020
2.21	- 31 .2	Aug 10, 2020
2.21	- 32 .1	Aug 10, 2020
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2.21 - 44 .1 Aug 10, 2020	2.23 - 04 .4 Aug 10, 2020
2.21 - 49 .1 Aug 10, 2020	2.23 - 04 .5 Aug 10, 2020
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2.22 - TC .2 Aug 10, 2020	2.23 - 06 .1 Aug 10, 2020
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2.22 - 01 .2 Aug 10, 2020	2.23 - 07 .1 Aug 10, 2020
2.22 - 01 .3 Aug 10, 2020	2.23 - 08 .1 Aug 10, 2020
2.22 - 01 .4 Aug 10, 2020	2.23 - 09 .1 Aug 10, 2020
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2.22 - 08 .1 Aug 10, 2020	2.23 - 14 .1 May 10, 2021
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2.22 - 14 .1 Aug 10, 2020	2.23 - 16 .2 Aug 10, 2020
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2.22 - 15 .3 Aug 10, 2020	2.23 - 19 .1 Aug 10, 2020
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2.23 - TC .3 Aug 10, 2020	
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2.24 - 01 .2 Aug 10, 2020	
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2.24 - 11 .1 Aug 10, 2020	
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2.24	-	18	.1	Aug 10, 2020
2.24	-	19	.1	Aug 10, 2020
<b>ATA 25</b>				
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<b>ATA 26</b>				
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2.26	-	08	.1	Aug 10, 2020
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2.26	-	19	.1	Aug 10, 2020
2.26	-	19	.2	Aug 10, 2020
2.26	-	19	.3	Aug 10, 2020
2.26	-	19	.4	Aug 10, 2020
2.26	-	19	.5	Aug 10, 2020
2.26	-	19	.6	Aug 10, 2020
2.26	-	20	.1	Aug 10, 2020
2.26	-	20	.2	Aug 10, 2020
<b>ATA 27</b>				
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2.27	-	TC	.2	Aug 10, 2020
2.27	-	02	.1	Aug 10, 2020
2.27	-	04	.1	Aug 10, 2020
2.27	-	04	.2	Aug 10, 2020
2.27	-	04	.3	Aug 10, 2020
2.27	-	04	.4	Aug 10, 2020
2.27	-	06	.1	Aug 10, 2020
2.27	-	07	.1	Aug 10, 2020
2.27	-	07	.2	Aug 10, 2020
2.27	-	07	.3	Aug 10, 2020

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2.27 - 08 .1 Aug 10, 2020	2.28 - 11 .1 Aug 10, 2020
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2.27 - 12 .1 Aug 10, 2020	2.28 - 22 .1 Aug 10, 2020
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2.27 - 23 .1 Aug 10, 2020	
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	2.29 - 07 .1 Aug 10, 2020
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	2.30 - 01 .4 Aug 10, 2020
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	2.30 - 03 .2 Aug 10, 2020
	2.30 - 03 .3 Aug 10, 2020
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	2.30 - 05 .1 Aug 10, 2020
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	2.30 - 07 .1 Aug 10, 2020
	2.30 - 07 .2 Aug 10, 2020
	2.30 - 08 .1 Aug 10, 2020
	2.30 - 09 .1 Aug 10, 2020

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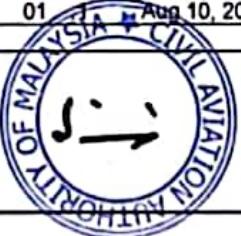
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MINIMUM EQUIPMENT LIST

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2.30 - 13 .3 Aug 10, 2020	2.32 - 21 .3 Aug 10, 2020	
2.30 - 17 .1 Aug 10, 2020	<b>ATA 33</b>	
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2.30 - 18 .2 Aug 10, 2020	2.33 - TC .2 Aug 10, 2020	
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<b>ATA 31</b>		
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<b>ATA 32</b>		
2.32 - TC .1 Aug 10, 2020	2.33 - 10 .1 Aug 10, 2020	
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2.32 - 08 .2 Aug 10, 2020	2.33 - 19 .2 Aug 10, 2020	
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2.32 - 14 .1 Aug 10, 2020	2.33 - 25 .1 Aug 10, 2020	
2.32 - 15 .1 Aug 10, 2020	2.33 - 25 .2 Aug 10, 2020	
2.32 - 15 .2 Aug 10, 2020	<b>ATA 34</b>	
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2.32 - 16 .1 Aug 10, 2020	2.34 - TC .2 Aug 10, 2020	
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	2.34 - 01 Aug 10, 2020	

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MINIMUM EQUIPMENT LIST

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2.34	-	16	.1	Aug 10, 2020
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2.34	-	18	.3	Aug 10, 2020
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2.34	-	36	.7	Aug 10, 2020
2.34	-	37	.1	Aug 10, 2020
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BOEING B737-800  
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**Section 1****Introduction****INTRODUCTION**

The MEL is divided into three sections as follows:

**SECTION 1 – INTRODUCTION****SECTION 2 – MEL**

This section contains all items applicable to MAB B737-800 from the FAA MMEL. For ease of use, page numbering uses the MEL item number as follows:



For example, MEL item 21-01 would be found on page 2.21-01.1 in Section 2.

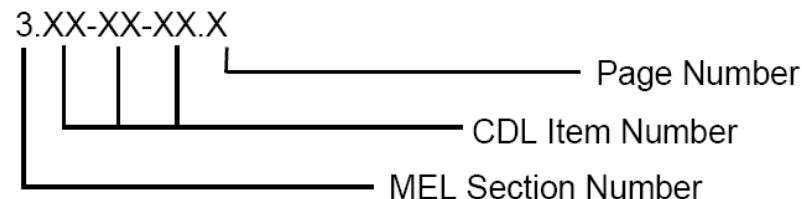
When appropriate, MAB procedures are included with the MEL item.

MEL items may not have suggested procedures for the following reasons:

- The procedure is obvious.
- MAB is not aware of any procedural effects.
- The MMEL does not require that a procedure be established.

**SECTION 3 - CDL**

This section contains all items from the AFM Appendix CDL. For ease of use, page numbering uses the CDL item number as follows:



For example, CDL item 21-51-01 would be found on page 3.21-51-01.1 in Section 3.

When appropriate, illustrations, system effects and performance adjustments follow the CDL item. The CDL General Limitations information has been printed in this section.

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**PREAMBLE AND DEFINITIONS****A. DISCUSSION**

This subject outlines the circumstances under which MAB B737 -800 aircraft may be released for flight with certain equipment inoperative to proceed to a station, where time and spares are available to effect rectification.

The purpose of the subject is to minimize delays to aircraft schedules by specifying those components or systems, which may remain inoperative for further flight whilst meeting airworthiness requirements and Company Operational Standards.

For the sake of brevity, the Minimum Equipment List does not include obviously required items such as wings, rudders, flaps, engines, landing gear, etc. Also, the list does not include items which are listed in LIMITATIONS para 3. of this subject. However, it is important to note that with exception to an Permit to Fly (PTF), ALL ITEMS WHICH ARE RELATED TO THE AIRWORTHINESS OF THE AIRCRAFT AND NOT INCLUDED IN THE MEL ARE AUTOMATICALLY REQUIRED TO BE OPERATIVE.

The exposure to additional failures during continued operation with inoperative systems or components must also be considered in determining that an acceptable level of safety is being maintained.

In applying the intent of the MEL the following limitations and qualifications shall be observed.

**B. LIMITATIONS**

1. The requirements of the MEL shall only be applied following agreement between the Captain and the L.A.M.E. It is recognised that the Captain may require a defect to be rectified after considerations of operational implications, or multiple unserviceable items affecting airworthiness and/or undue increase in crew workload. These considerations will be irrespective of any flight clearance in the MEL.
2. With exception to an Permit to Fly (PTF), all items affecting airworthiness shall be operative unless specified in the MEL as permitted unserviceable items. Rectification of MEL unserviceable items shall be carried out soonest or within the limit of the specified repair interval at the first station where time and spare permit. Where the MEL is invoked unserviceable items shall be entered in AMOS Workorder (APN 1418) TRANSFER wizard and identified with the MEL item number. This will define the unserviceable as an airworthiness item and facilitate future reference to requirements and considerations.
3. Items which do not affect airworthiness may be inoperative. Such items will include:-
  - a) Passenger and cabin equipment (other than mandatory safety equipment) and items installed for convenience and commercial usage.

- b) Special equipment installed for service evaluation if it supplements, but does not replace, operational airworthiness equipment.

The Captain will, in conjunction with the LAME use discretion in the allocation of reported items (not covered in the MEL) into AMOS Workorder (APN 1418) TRANSFER wizard (Deferred Defects) when, due to their nature, these items do not in their opinion have an adverse effect on airworthiness or operation of the aircraft.

- The requirements of the MEL shall apply to an aircraft which transits at Main base. An aircraft which is positioned at the terminal for a pre-departure routine shall, if a defect occurs, be considered a transit aircraft and the requirements of the MEL shall apply.

## **CONTENTS OF THE MINIMUM EQUIPMENT LIST**

Systems and units in the Minimum Equipment List are indexed according to ATA Specification and have been assigned a unique number and when appropriate, is followed by maintenance or operations procedures.

## **DEFINITIONS**

## **Definitions: MEL PRESENTATION, SYMBOLS AND TERMINOLOGY**

- (1) MAB MEL presentation of the equipment, system, component, or function is adapted from the Boeing B737 DDG revision 46 and onwards format. The explanation of the format used are based on example below.

## - Beginning of Example MEL item -

<b>99-99</b>	<b>Sample System/Function/Component</b>		
<b>99-99-99A</b>	<b>Sample Subsystem/Subfunction/Component/Option</b>		
<b>Interval</b>	<b>Installed</b>	<b>Required</b>	<b>Procedure</b>
<b>C</b>	<b>1</b>	<b>0</b>	<b>(M) (O) [E] [P]</b>

FAA MMEL/DCA/MAS Remarks and Exceptions

## **PLACARD**

**FEASIBILITY**

#### **MAINTENANCE (M)**

## MANTE

## OPERATIONS (O)

**OPERATE**  
Just do it

- End of Example MEI item -

- End of Example MEL Item -

- c. “**99-99-99A**” represents the sub-system, sub-function, or component. When ending with an alphabet (A, B, C etc) it signifies an option (i.e. Option A or Option B or Option C etc). The other options will be listed in sequence.
- d. “**Interval**” column (1) is the repair of inoperative systems or components, deferred in accordance with MAB MEL, must be effected at or prior to the repair times established by the following letter designators:
- Category A. Items in this category shall be repaired within the time interval specified in the remarks column of MAB MEL.
- Category B. Items in this category shall be repaired within three (3) consecutive calendar days.
- Category C. Items in this category shall be repaired within ten (10) consecutive calendar days.
- Category D. Items in this category shall be repaired within one hundred and twenty (120) consecutive calendar days.
- Calculation of the repair interval limitation starts at 0001 hrs on the day following the raising of the MEL deferred defect. Example: When a MEL deferred defect is raised at 1300 hrs on 01 May, the repair interval limitation takes effect at 0001 hours on 02 May. In the case where repair interval limitations are specified in number of flights or flight hours, it shall start at the beginning of the first flight following the discovery of failure. Aircraft shall not depart a station if the repair interval exceeded during flight. All dates and time shall be Coordinated Universal Time (UTC).
- i) “**Calendar Day**” means a 24 hours period (from midnight to midnight) based on Coordinated Universal Time (UTC). “Calendar Day” is counted continuously regardless of the number of the flight initiated for the affected aircraft.
- ii) “**Flight Day**” means a 24 hours period (from midnight to midnight) based on Coordinated Universal Time (UTC), during which at least one flight is initiated for the affected aircraft.
- e. “**Installed**” (Column 2) is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft configuration considered in developing this MEL. Should the number be a variable (eg passenger cabin items) a number is not required and a dash (“-”) may be present.
- f. “**Required**” (Column 3) is the minimum number (quantity) of items required for operation provided the conditions specified below the table are met. Should the number be a variable (eg depending on specific requirements) a number is not required and a dash (“-”) may be present.
- g. “**Procedure**” (Column 4) reflects symbols, indicating that certain procedures must be accomplished.

**(M)** symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative.

**(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.

**[P]** symbol indicates that aircraft performance is affected, and a related action/procedure is required (usually a maintenance action to advise MOC/FDC/OCC). Refer preamble D. RESPONSIBILITIES for more information.

**[E]** symbol indicates that aircraft EDTO status is affected, and a related action/procedure is required (usually a maintenance action to advise MOC/FDC/OCC of EDTO status). Refer preamble D. RESPONSIBILITIES for more information.

**[R]** symbol indicates an item which requires certain maintenance task to be carried out at specific interval while the MEL item is still active. The requirement of the repetitive maintenance task is stated in the MEL proviso requirements. Refer to Preamble D. RESPONSIBILITIES for more information.

- h. MEL requirements as per FAA MMEL or Malaysian CAA requirement or MAB company policy is written below the table and ended by the "dash-dot-dash-dot" line. These are commonly known as '**Remarks or Exceptions**'.
- i. "**PLACARD**" – is required by default for all MEL items. Refer preamble C. QUALIFICATIONS for more information.
- j. "**MAINTENANCE (M)**" is the dispatch requirement for maintenance.
- k. "**OPERATIONS (O)**" is the dispatch requirement for flight operations.

- (2) " \*\*\* " symbol following the item title indicates an item which is not required by regulation but which may have been installed on some models of aircraft covered by this MEL.
- (3) "Not Applicable" after a sequence item indicates that the item exists in the Master MEL / Boeing DDG but is not applicable to MAB fleet. Usually such items are deleted from MAB MEL, but their item numbers and titles are maintained for editorial purposes.
- (4) "Deleted" after a sequence item indicates that the item was previously listed but is now required to be operative if installed in the aircraft. The item number and title may be maintained for editorial purposes.
- (5) "Moved" after a sequence item indicates that the item has been moved to another item number, or combined with another item. The item number and title may be maintained for editorial purposes.
- (6) "Operative" - When a unit or system functions within approved limits or to operational requirements.
- (7) "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).

- (8) "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.
- (9) "Is not used" in the provisos, remarks or exceptions for an MEL item specifies that another system/function/MEL item is not to be used regardless of whether it is actually still functional or not. In such cases, crewmembers should not activate, actuate, or otherwise utilize that component or system under normal operations. In some cases, the item that is not to be used exists elsewhere in the MEL. In such cases, it is not necessary to accomplish the (M) procedures associated with the item that is not used. However, it is necessary to comply with all operational requirements associated with the item that is not used. Placards must be affixed, to the extent practical, adjacent to the control or indicator for the item that is not used to inform crewmembers that it is not to be used under normal operations.  
NOTE: "Is not used" and "considered inoperative" are NOT the same, unless specifically stated in the MEL item.
- (10) Inoperative components of an inoperative system: Inoperative items which are components of a system which is inoperative are usually considered components directly associated with and having no other function than to support that system. (Warning/caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the MEL).
- (11) Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition.  
NOTE 1: To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the licensed aircraft engineer / approval holder dispatching the aircraft.  
NOTE 2: In addition to actual defective items, any items that are to be considered inoperative or not to be used should also be placarded to remind crew of this status.
- (12) "Deactivated" and "Secured" means that the specified component must be put into an acceptable condition for safe flight.
- (13) 'Not Applicable at a Specific Station' - Defines at station where a system or an item shall be serviceable before the aircraft proceeds.

**Definitions: ORGANIZATIONS AND DEPARTMENTS**

- (1) 'CAA' - (Malaysian) Civil Aviation Authority
- (2) 'FAA' - (American) Federal Aviation Administration
- (3) 'MAB' - Malaysia Airlines Berhad
- (4) 'MOC' - (MOC) Maintenance Operations Center

- (5) 'OCC' - (MAB) Operations Control Center
- (6) 'FDC' - (MAB) Flight Dispatch Center

### **Definitions: DOCUMENTS, MANUALS AND OTHER REFERENCES**

- (1) 'AFM' - Airplane Flight Manual
- (2) 'AMM' - Aircraft Maintenance Manual
- (3) 'CDL' - Configuration Deviation List. Original FAA-approved CDL is an AFM Appendix, but usually the CDL is customized with illustrations and added into the operator's MEL.  
NOTE: AFM Appendix for CDL shall take precedence in the event of conflicting information.
- (4) 'CFR' - (American) Code of Federal Regulations. Within the context of civil aviation this generally refers to FAR's or Federal Aviation Regulations. (The FAR's are part of the CFR, which is the entire American Federal Regulations)
- (5) 'DDG' - A document published by Boeing, based on the MMEL and CDL, and containing additional information (eg illustrations, procedures) to assist operators to develop their own customized MEL. The terms 'DDG' and 'MEL' are sometimes (wrongly) used interchangeably.
- (6) 'DOE' - Design Organisation Exposition (Technical Services Department)
- (7) 'FAR' – (American) Federal Aviation Regulations. See also 'CFR'.
- (8) 'FCOM' - Flight Crew Operating Manual.
- (9) 'FPPM' - Flight Planning and Performance Manual.
- (10) 'CAR 2016' – Malaysian Civil Aviation Regulations 2016.
- (11) 'MMEL' - Master Minimum Equipment List published and approved by FAA which does not contain procedures, illustrations or placards.
- (12) 'MEL' - Operator-customized Minimum Equipment List based on the MMEL and DDG.
- (13) 'MMOE' - Maintenance Management & Organisation Exposition.
- (14) 'QRH' - Quick Reference Handbook.
- (15) 'SOP' - Standard Operating Procedures.
- (16) 'LEEL' – Location of Emergency Equipment Layout
- (17) 'LOPA' – Layout of Passenger Arrangement
- (18) 'CAD 6 Part 1 - CAT' – Civil Aviation Directive – 6 Part 1 - Commercial Air Transport

### **Definitions: NAVIGATION, WEATHER, ROUTING**

- (1) 'Extended Overwater Flights' - Flights operated over water at a distance away from land suitable for making an emergency landing greater than that of 120 minutes at cruising speed or 400NM, whichever is the lesser. This is NOT the same as EDTO.
- (2) 'EDTO' (Extended Diversion Time Operations) are those flights conducted over a route that contains a point further than an hour flying time at the approved one - engine inoperative cruise speed (under standard conditions in still air) from an adequate airport. FAA Master MEL / Boeing DDG uses the term 'ER' or Extended Operations, but this terminology is not often used in MAB context, and may be confused with ER models (eg B737-900ER).

- (3) 'RVSM' - Reduced Vertical Separation Minimum. RVSM airspace is any airspace or routes between Flight Level 290 and Flight Level 410 inclusive where aircraft are separated vertically by 1000 ft. (300 m). As of the date of issuance of this revision North Atlantic Airspace (DXB-EWR sector) is classified as RVSM Airspace. More airspace will be classified as RVSM in the future. Verify with FDC/flight crew/en-route navigation charts to determine if flight will enter RVSM airspace. Refer to MAB Operation Specification for RNP approval status.
- (4) 'PBN' – Performance Based Navigation. PBN is an ICAO concept of defining navigation specifications (like RNAV 5, RNP 1 etc) in terms of the performance (accuracy) required, as opposed to previous sensor-based definitions (based on the performance of specific systems like INS, VOR/DME or GPS). Under PBN, operators will ideally be able to use any navigation system/technology that can give the specified performance/accuracy. In practice however, certain navigation specifications still require specific navigation systems, due to other considerations (eg. RNP 4 requires a GNSS like GPS, as RNP 4 operations are usually conducted for long periods in remote/oceanic airspace, without support from ground-based navigation aids).
- Note: The ICAO PBN concept/definition is still evolving. Although PBN is intended to standardize navigation performance specifications worldwide, PBN intentionally excludes MNPS because MNPS is mandatory, applies only to operations over the North Atlantic Ocean, and is not expected to change.*
- (5) 'RNAV' - aRea NAVigation. Area navigation is the general concept of being able to fly an aircraft on any arbitrary flight path desired, within a given area (as opposed to traditional point-to-point navigation from one ground-based navaid to another). RNAV X (where X is a desired level of accuracy in nautical miles, on a 95 percent containment basis) is a specific implementation of area navigation (i.e. a standard, or specification). At the time of writing, the following RNAV specifications have been defined by ICAO under the PBN concept:
- RNAV 10 (generally still known as RNP 10, although technically incorrect) for routes in oceanic and remote continental airspace, with 50nm lateral and longitudinal separation between aircraft. The terminology RNP 10 is still maintained due to widespread usage, despite the proper terminology being RNAV 10.
  - RNAV 5 (equivalent to B-RNAV in Europe and formerly known as RNP 5) for routes in general airspace. Route and aircraft separation depend on traffic density and direction, and availability of ATC surveillance.
  - RNAV 2 and RNAV 1 (largely equivalent to P-RNAV in Europe and US-RNAV in USA) for en-route and terminal airspace requiring better navigation accuracy than RNAV 5, in areas with adequate ATC surveillance. (For areas without ATC surveillance, RNP 2 and RNP 1 are more suitable.) RNAV 2 and RNAV 1 are considered a single combined approval by ICAO.

As a specification, a given RNAV may include additional requirements apart from just the navigation system accuracy. Examples of such additional requirements are communications (like datalink or long ranged), ATC surveillance (like transponder or ADS-C), specific equipment (like flight director/autopilot or navigation database) or specific navigation systems (usually a GNSS like GPS or GLONASS). Eg. RNAV 10 not only requires 10nm navigation accuracy, but also requires long range communications, while RNAV 1 not only requires 1nm navigation accuracy, but also navigation display and a navigation database. Because of these additional requirements, an aircraft that is capable of a given RNAV is not necessarily capable of another RNAV with less accurate navigation requirements. Refer to ICAO PBN manual for detailed requirements.

*Note: 1. RNAV specifications/implementations should not be confused with RNP specifications/implementations. In particular, the terms RNP 10 and RNP 5 may still be encountered, but these are actually RNAV specifications. RNP 5 is now called RNAV 5, but RNP 10 is still maintained due to widespread usage, despite the proper terminology being RNAV 10. In the past, the terms RNAV and RNP were considered synonymous, but their meanings are now different under the ICAO PBN concept. Refer to the definitions of RNP and PBN for more information.*

2. *In this MEL, dispatch requirements which affect one RNAV capability will not affect any other RNAV capability, unless specifically stated. Eg. an MEL item which affects RNAV 5 does not necessarily affect RNAV 10, 2, or 1, unless specifically stated.*
3. *To find out if any RNAV capability is required for the flight, consult FDC/flight crew/navigation charts.*
4. *To find out what RNAV capabilities are approved for the individual aircraft, refer to the Operations Specifications (usually carried onboard in the certificate file).*
5. *To find out if any RNAV capabilities have been degraded by MEL defects, refer to technical log and NTC, and crosscheck with the referenced MEL item(s).*

- (6) 'RNP' - Required Navigation Performance. RNP is an area navigation (RNAV) specification that includes an additional requirement for onboard navigation performance monitoring and alerting. Eg. RNP 1 is similar to RNAV 1 in terms of navigation performance/accuracy, but RNP 1 requires navigation accuracy to be monitored during flight, and requires an alert to be provided to crew if the navigation accuracy exceeds limits. RNP X (where X is a desired level of accuracy in nautical miles, on a 95 percent containment basis) is a specific implementation of RNP (i.e. a standard, or specification). At the time of writing, the following RNP specifications have been defined by ICAO under the PBN concept:
- RNP 4 for remote/oceanic airspace, with CPDLC required for communications and ADS-C required for ATC surveillance.

- RNP 2 for routes requiring better navigation accuracy than RNP 4, in areas with limited or no ATC surveillance. (For areas with ATC surveillance, RNAV 2 can be used instead.) There are no specific communications requirements (unlike RNP 4, because the intended type of environments are different from RNP 4).
- RNP 1, for routes requiring better navigation accuracy than RNP 2, in areas with limited or no ATC surveillance. (For areas with ATC surveillance, RNAV 1 can be used instead.) There are no specific communications requirements (unlike RNP 4, because the intended type of environments are different from RNP 4). (RNP 1 was previously called Basic RNP 1, but now that ICAO is no longer planning to implement Advanced RNP 1, the "Basic" descriptor is no longer necessary.)
- RNP 0.3 for en route and terminal airspace requiring uniformly high navigation accuracy through all phases of flight (generally for helicopters flying at low level in obstacle-rich environments, although fixed wing operators may also apply).
- RNP APCH, including older procedures designated as RNAV(GPS) or RNAV(GNSS), is used for approach, and requires navigation accuracy of 0.3nm or better. The navigation capability during such approaches is usually provided by augmented GPS/GNSS (instead of Instrument Landing System (ILS) localizer and glideslope). (However, certain airports and the missed approach portion of RNP APCH procedures may still rely on non-GPS/GNSS means of navigation, like VOR, DME and inertial navigation.) RNP APCH can be further categorized by minima:
  1. RNP APCH down to LNAV minima. LNAV stands for Lateral NAVigation, meaning the use of flight director and/or autopilot to guide the lateral path of the aircraft. LNAV without any vertical guidance can only provide non-precision approach. Accuracy is not as good as ILS-based approaches, hence the minima is usually higher than ILS approaches.
  2. RNP APCH down to LNAV/VNAV minima. VNAV stands for Vertical NAVIGATION, meaning the use of flight director and/or autopilot to guide the vertical path of the aircraft. When VNAV is used in conjunction with LNAV, it allows precision approach to lower minima than when using LNAV alone. Accuracy is not as good as ILS-based approaches, hence the minima is usually higher than ILS approaches.
  3. RNP APCH down to LP minima. LP stands for Localizer Performance, meaning a non-precision approach with accuracy as good as using an ILS localizer (without ILS glideslope).
  4. RNP APCH down to LPV minima. LPV stands for Localizer Performance with Vertical guidance, generally an augmented GPS/GNSS-based precision approach with accuracy as good as Instrument Landing System (ILS) localizer and glideslope.
- RNP AR APCH is a more advanced version of RNP APCH, and includes procedures marked as RNAV(RNP) or RNAV(RNP)AR, or any requirement for specific approval or authorization, or mentioning SAAAR (Special Aircraft and Aircrew Authorization Required). The procedures and minima

used are considered challenging enough to require case-to-case review and approval by regulatory authority (AR = Authorisation Required), eg. if the procedures include curved legs in the final segment or requires navigation accuracy better than 0.3nm.

As a specification, a given RNP may include additional requirements apart from just the navigation system accuracy. Examples of such additional requirements are communications (like datalink or long ranged), ATC surveillance (like transponder or ADS-C), specific equipment (like flight director/autopilot or navigation database) or specific navigation systems (usually a GNSS like GPS or GLONASS, or sometimes duplicate equipment).

Eg. RNP 4 not only requires 4nm navigation accuracy, but also requires Controller-Pilot Datalink Communications (CPDLC), while RNP 1 requires voice communications and not CPDLC. Because of these additional requirements, an aircraft that is capable of a given RNP is not necessarily capable of another RNP with less accurate navigation requirements. Eg. an B738 with unserviceable datalink is still capable of RNP 1, but is no longer capable of RNP 4. Refer to ICAO PBN manual for detailed requirements.

*Note: 1. RNP specifications/implementations should not be confused with RNAV specifications/implementations. In particular, the terms RNP 10 and RNP 5 may still be encountered, but these are actually RNAV specifications. RNP 5 is now called RNAV 5, but RNP 10 is still maintained due to widespread usage, despite the proper terminology being RNAV 10. In the past, the terms RNAV and RNP were considered synonymous, but their meanings are now different under the ICAO PBN concept. Refer to the definitions of RNAV and PBN for more information.*

- 2. In this MEL, dispatch requirements which affect one RNP capability will not affect any other RNP capability, unless specifically stated. Eg. an MEL item which affects RNP 1 does not necessarily affect RNP 4 or RNP APCH unless specifically stated.*
- 3. To find out if any RNP capability is required for the flight, consult FDC/flight crew/navigation charts.*
- 4. To find out what RNP capabilities are approved for the individual aircraft, refer to the Operations Specifications (usually carried onboard in the certificate file). At the time of writing (September 2013), MAB A380 are approved for RNP 4, RNP 1, and RNP APCH LNAV/VNAV.*
- 5. To find out if any RNP capabilities have been degraded by MEL defects, refer to technical log and NTC, and crosscheck with the referenced MEL item(s).*

- (7) 'RNP AR' – Required Navigation Performance Authorization Required.  
(8) 'FANS' - Future Air Navigation System is an ICAO concept of a phased approach to the implementation of Communication, Navigation, Surveillance and Air Traffic Management (CNS/ATM). The purpose of FANS is to enhance the capacity, efficiency and safety of the air traffic system. The Boeing FANS 1 features that complement the ICAO global and regional plans for CNS/ATM

modernisation include Air Traffic Services Data link communication, satellite based navigation (GPS), Required Navigation Performance (RNP), Automatic Dependent Surveillance (ADS) and Required Time of arrival (RTA). FANS routes are routes which allow operations of FANS equipped and approved airplanes only. All the despatch requirements for FANS route referred to in this document have been intended for operations in route UM501 which requires RNP4 and ability to communicate using ADS and CPDLC. UM501 is a trial FANS route between waypoints PUT (PHUKET) and AG (AGRA). Affected routes will be all the routes between KUL and INDIA/MIDDLE EAST/EUROPE. Verify with FDC for latest FANS routes.

- (9) "Instrument Flight Rules" (IFR) is as defined in CAR 2016 and Civil Aviation Directive – 6 Part 1 – Commercial Air Transport (CAD 6 Part 1 - CAT).
- (10) "Visual Flight Rules" (VFR) is as defined in CAR 2016 and Civil Aviation Directive – 6 Part 1 – Commercial Air Transport (CAD 6 Part 1 - CAT). This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.
- (11) "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.
- (12) "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.
- (13) "Icing Conditions" means an atmospheric environment that may cause ice to form on the aircraft or in the engine(s).
- (14) 'Daylight' - The time between half an hour before sunrise and half an hour after sunset, sunset and sunrise being determined at surface level.

**Definitions: MISCELLANEOUS**

- (1) "Passenger Convenience Items" means those items related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ashtrays, stereo equipment, overhead reading lamps, etc.
- (2) "Non-essential Equipment and Furnishings" in the context of MAB MEL includes Passenger Convenience Items, as well as non-airworthiness or non-safety-related items that are not covered by the MEL or CDL, and also not covered by serviceable limits (eg. leak rate, wear limits) in the manufacturer's manuals or operator's approved maintenance program.
- (3) 'SFP' - Short Field Performance. A B737NG Boeing modification for enhanced short field performance. Optional for B737-800's (known as B737-800 SFP's), and standard on B737-900ER. Involves design, hardware and software changes to give better takeoff and landing performance on short runways. However, due to the differences, the B737-800 SFP performance is no longer the same as a "normal" B737-800, and must be calculated separately.

Externally, some B737-800 SFP have an optional two-position tail skid which extends during landing. This can be visually identified due to the associated canted (angled) APU drain mast. However, some SFP aircraft still use the standard single position tailskid. The best way to identify a B737-800 SFP aircraft is to check on the FMC IDENT page for the MODEL identifier:

737-800.1 = 737-800SFP with single position tailskid

737-800.2 = 737-800SFP with two position tailskid

737-800W.1 = 737-800 Winglet SFP with single position tailskid

737-800W.2 = 737-800 Winglet SFP with two position tailskid

	
Std single psn tailskid (normal B738 and some SFP aircraft)	Two-position tailskid (SFP aircraft only)

As of October 2, 2014, in MAB B737-800 fleet, following aircraft registration has the Short Field Performance option:

Short Field Performance Option	Aircraft Registration
SFP1	9M-MLF thru L, 9M-FFF

- (4) 'Non-combustible Material' - Material that would be very difficult to ignite eg. metal tool/ cable/containers, iron or steel bars/sheets, ceramics, gold or silver bars etc. (Note: Combustible items are the normal airline cargo and baggage which typically contains cloth, paper, cardboard, plastics and other flammable materials).

## C. QUALIFICATIONS

The licensed/approval holders (certifying staff) responsible for clearing the aircraft for flight must ensure that:

1. The Captain of the aircraft is fully informed of all aspects of unserviceability in order that he may make changes to operating technique as necessary.
2. All deferred items to be recorded in AMOS Workorder (APN 1418) TRANSFER wizard.
3. Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition. It is recommended to indicate the applicable MEL Item Number on the placard.  
NOTE: To the extent practical, placards should be located adjacent to the control or indication for the affected item.
4. Unserviceable instruments are removed and their connections blanked off, or the instruments are placarded as inoperative.
5. Switches controlling defective components must be placarded, and if necessary rendered inoperative.
6. Defective items that may affect the operation of other items, must be isolated from the system.

7. When utilizing the MEL the person so doing will annotate in AMOS Workorder (APN 1418) TRANSFER wizard to show the identifying number of the relevant MEL and ensure that onward stations are advised by signal of items affecting performance. Crews originating flights from Kuala Lumpur or terminating stations will similarly be advised of items affecting performance.

## **D. RESPONSIBILITIES**

1. The following details the Engineering and Operations responsibilities associated with **Performance Penalty items [P]**:
  - a) Certifying Staff (CS) or License Aircraft Engineer (LAE) are responsible to liaise with the aircraft Captain to determine if the defect is acceptable for further flight.
  - b) To prevent unnecessary delay due to [P] item, subsequent flight crew at subsequent stations need to be provided with copy of affected [P] MEL pages. Flow of information to MOC/FDC/OCC:
    - 1) **FOR [P] ITEMS EX-KUL**
      - 1.1 CS or LAE to inform MOC (KUL)
      - 1.2 MOC (KUL) to inform KUL Traffic (Airport Services), KUL FDC, KUL OCC and all affected line stations engineering.
      - 1.3 FDC KUL to inform affected line station(s) FDC and fax the affected [P] MEL pages to all affected line stations FDC.
    - 2) **FOR [P] ITEMS EX-LINE STATION**
      - 2.1 Line Station engineering (CS or LAE) to liaise with the relevant tech crew and the line station FDC to dispatch the aircraft.
      - 2.2 Line Station engineering (CS or LAE) are to inform MOC (KUL) for further action.
      - 2.3 MOC (KUL) to inform the next line station engineering
  - c) On receipt of a signal notifying of the continuance of flight of an aircraft with a Performance Penalty item the CS or LAE are responsible to liaise with the Station's Operation to ensure that the relief Captain is briefed on the nature of the defect, thus allowing determination of acceptance for further flight.

### Operations Responsibility

The aircraft Captain will determine if the defect is acceptable for further flight. This decision is to be made with due consideration to the aircraft's operating pattern and crew workload.

2. For EDTO approved aircraft, the following details the responsibilities associated with the **EDTO related items [E]**:  
EDTO approved aircraft are maintained and operated to EDTO standards by default. Non-EDTO is the exception. As such, non-EDTO and re-graded EDTO status will have to be communicated.  
NOTE: MAB B737-800 MX-series and ML-series are EDTO-approved aircraft whereas MS-series are not EDTO-approved, and not affected by the above procedure.

Engineering Responsibilities:

Should failures occur and aircraft cannot operate EDTO but allowable for regraded or non EDTO per MEL, the MEL will require the deferred item to be recorded in AMOS with the phrase 'This aircraft is now regraded to XXX min EDTO/ Non-EDTO due to ...'. MOC will advise Flt. Control Centre, Operations Dispatch Centre and Operations Control Centre for this restriction on a daily basis.

Verification Flights

Defects in EDTO significant systems must be rectified, certified and verified before further EDTO flights. Intermittent defects and defects which appear only at certain altitudes, temperatures, Flight phases or Flight duration is verified in flight.

Verification Action

This includes:

- Specified ground checks
- Non-EDTO revenue flight
- EDTO revenue flight subject to system verification during the first 60 min. of flight before it leaves the 60 min. operational range. This is termed 'Verification Flight'.

Note: Verification Flight may be a revenue flight operated by line pilots

Verification Flight Types

Non- EDTO revenue flight

Non-revenue flight

The first 60 min. of an EDTO flight

Verification Flights Applicability

Verification flights are required for

1. Identical maintenance action on parallel EDTO significant systems by one LAE.
2. EDTO significant system defects which appear only at certain altitudes, temperatures, flight phases or flight duration.
3. EDTO significant system defects which are intermittent.

Procedure

- |             |   |
|-------------|---|
| LAE         | <ol style="list-style-type: none"><li>1. Refer EDTO Maintenance Manual for EDTO significant systems that are reported defective.</li><li>2. If positive rectification can be ascertained, verification flights are not required.</li><li>3. If verification flight is needed record need for verification flight in ATL Action column.<br/>Raise NTC as follows:<br/>The EDTO related rectification in ATL S/N XXXXX needs verification on the next flight. (Please monitor the parameters XXXXX). Please record in ATL, the defect status.</li></ol> |
| Arrival LAE | If verification flight is satisfactory, delete NTC. Inform MOC.   |

3. The following details the responsibilities associated with the **repetitive maintenance related item/s, [R]**:

Certain MEL items when deferred, requires repetitive maintenance tasks to be carried out at specific interval (e.g. every departure, first departure of the day, every day, every 3 days, et cetera) until the MEL defect has been rectified. The purpose of this procedure is to provide guidance on how to record MEL repetitive maintenance procedures in AMOS, as required by specific MEL items when it is invoked by Approval Holder (A/H) to defer a defect.

### Engineering Responsibilities & Procedures

#### A. Defect was raised and recorded in ATL:

A/H to notify MOC on the nature of the defect and penalty involved, and repetitive maintenance procedures requirement prior to deferment of the defect. This is to enable MOC to consider the effect of the MEL limitations on aircraft scheduled flights and further tracking of the deferred defect.

1. A/H had trouble shoot the defect and deferred the defect. In addition, A/H is to accomplish followings:

a. Record in the ATL:

- Box #10. ACTION TAKEN COLUMN:  
"DEFECT DEFERRED AS PER MEL XX-XX-XX. REPETITIVE MAINTENANCE PROCEDURES REQUIRED. REFER MEL.", and
- Box #22. DEFERRED DEFECT COLUMN:  
Complete the Deferred Defect details.

b. Manually record in the Status Report (SR) Table 3. DEFERRED ITEMS AS PER MEL: "DEFECT DEFERRED AS PER MEL XX-XX-XX. REPETITIVE MAINTENANCE PROCEDURES REQUIRED. REFER MEL."

c. Manually record in the SR Table 6. NOTES TO CREW AND MAINTENANCE: "TO PERFORM REPETITIVE MAINTENANCE PROCEDURE AS PER MEL XX-XX-XX. REFER MEL."

d. A/H is to enter the deferred defect into AMOS:

- In AMOS APN 1418 Workorder (W/O) TRANSFER wizard against ACTION TEXT column add the phrase: "REPETITIVE MAINTENANCE PROCEDURES REQUIRED. REFER MEL."
- In AMOS APN 1418 W/O RAISE Briefing Card (NTC): "AS PER DEFECT W/O XXXXXXXX (XXXXXXX refer item (d) above) TO PERFORM REPETITIVE MAINTENANCE PROCEDURE AS PER MEL XX-XX-XX. REFER MEL."

NOTE: MAINTENANCE TO CLOSE THIS NTC UPON DEFECT TERMINATION."

2. For Stations without AMOS access, an immediate notification is to be sent to MOC via email (to KULENMH@malaysiaairlines.com and KULELMH@malaysiaairlines.com). The notification shall consist of scan copy of respective Aircraft Tech Log page.

**B. Accomplishment of Repetitive Maintenance Procedures:**

Whenever A/H accomplished the subsequent maintenance task, A/H to action followings:

1. Subsequent repetitive inspection, record in NEW ATL DEFECT DESCRIPTION: "DEFECT WAS DEFERRED AS PER MEL XX-XX-XX. TO PERFORM REPETITIVE MAINTENANCE PROCEDURES. REFER MEL."
2. Maintenance action taken of this requirement and manually record:
  - ATL ACTION TAKEN COLUMN: Record the maintenance action taken, and
  - SR at the initial W/O DEFERRED LINE ACTION TAKEN COLUMN: Record the ATL Page Number or W/O, Date & Time.

**C. If Repetitive Maintenance Procedures IS NOT / CANNOT be performed:**

If the maintenance procedure is not/cannot be performed before each flight (for some reason) or others maintenance requirements as per respective MEL aircraft must be downgraded to non-EDTO (or other limitations such as RVSM, PBN, PBCS, AUTOLAND etc):

1. Advise MOC on the reason(s) the maintenance procedure could not be performed and advise MOC that EDTO (or other limitations as applicable) is not allowed.
2. Raise NEW ATL and manually record in the SR MEL DEFECT: "MAINTENANCE PROCEDURE NOT PERFORMED AS PER MEL XX-XX-XX. AIRCRAFT NOT APPROVED FOR EDTO (or other limitations as applicable)." Note: Termination of this DD shall be the remaining cycles/hours/days of the initial MEL defect W/O.
3. In AMOS APN 1418 W/O, Transfer as DD, against ACTION TEXT column add the phrase: "AIRCRAFT NOT APPROVED FOR EDTO (or other limitations as applicable). REFER MEL XX-XX-XX.".
- Note: a. Termination of this DD shall be the remaining cycles/hours/days of the initial MEL defect W/O.  
b. Manually select Aircraft Limitations to W/O Limitations.
4. MOC to advise FDC and OCC of this restriction on daily basis.

**D. Defect rectified:**

1. At an appropriate time, prior to the repair interval due date, Maintenance Planning shall call out the W/O to rectify the defect.
2. A/H accomplished the repair, print a hard copy of the W/O (both defect and NTC W/O) and certify the Action, Close and CRS portion of the hard copy W/O and in AMOS. In addition, A/H is to accomplish followings:
  - a. Close the Deferred Items as per MEL in the Status Report, and
  - b. Delete the NTC in the Status Report.

**E. MISCELLANEOUS****1. Flight Data System (FDR & CVR)**

Reliability requirements prescribe that in order to ensure a reasonable probability that data be available for accident investigation purposes, it is required that, from an adequate and representative sample of all the evidence available from record read-out (i.e. read-out for maintenance and any other purposes) , including flights started with a known unserviceable flight data recorder, the airplane operator shall show to the satisfaction of the CAA that there is a 92% probability that data is being recorded to a standard which will not significantly degrade the type of analysis which would be carried out in the majority of cases of accident investigation. The 'Six Sectors' allowable is agreed on the basis that it will not degrade the overall system reliability. At periodic reviews of the MELs the operator shall take account of the foregoing reliability requirement.

**2. MEL REPAIR INTERVAL EXCEEDANCE AUTHORIZATION (MRIEA)**

The following is based on CAME PART 1-15-00 Issue No: 03 Rev : 00 dated 15th March 2019. In case of conflict, latest CAME will override this procedure.

**A. PURPOSE:**

To specify MEL repair interval escalation policy.

**B. FIELD OF APPLICATION**

This policy applies to all aircraft operated by Malaysia Airlines Berhad (MAB).

**C. POLICY**

MAB EMD does not hold any MEL repair interval escalation privileges. Any affected aircraft shall not be operated with deferred defects that have exceeded its MEL repair interval.

**D. CONCURRENT DOCUMENTS**

Civil Aviation Directive – 6 Part 1 – Commercial Air Transport (CAD 6 Part 1 – CAT) para 6.1.3 MINIMUM Equipment List.

### 3. APPROVAL OF FLIGHT CONDITIONS FOR A PERMIT TO FLY

#### A. PURPOSE:

The procedure describes the process for DOA to technically determine, approve and issue a Flight Conditions (FCs) in compliance with CAA Civil Aviation Directive (CAD) 8305 as a basis for aircraft flying under Permit to Fly (PtF).

#### B. FIELD OF APPLICATION:

- (1) Permit to Fly (PTF) is issued when a certificate of airworthiness (CoA) is temporarily invalid, or when a CoA cannot be granted, but the aircraft is nevertheless capable of performing a safe flight under the defined conditions. PTF will be issued for the purpose of flying aircraft to a base where maintenance, repairs or changes in type design can be performed.
- (2) The scope of this approval is limited to an aircraft that do not meet, or have not been shown to meet, applicable airworthiness requirements but are capable of safe flight under defined conditions for following purposes:
  - a) **Maintenance Check Flight** resulting from manufacturer's Maintenance requirements or operator Maintenance Schedule requirement. This includes, but not limited to the following:
    - \* *Elevator/Aileron/Rudder Power Off Test Flight.*
    - \* *Double or Multiple Engine Change Test Flight.*
    - \* *HMV or Airworthiness Test Flight.*
    - \* *Double Propeller Change Test Flight.*
  - b) Flying an aircraft to a location where maintenance, repairs or airworthiness review are to be performed, or to a place of storage.
  - c) Flight Test required by STC installation.
- (3) Whenever FCs is related to the safety of the design, an application and approval shall be made as per para 4 of the CAD 8305 to the CAA Malaysia.

#### 4. MEL APPLICABILITY

After Engine Start and before Takeoff, the associated non-normal checklist as per FCOM/QRH is done if a non-normal situation is identified. After completion of the checklist and prior to Takeoff, the MEL (Minimum Equipment List) should be consulted to determine if dispatch relief is available for continued operation with system faults displayed.

The pilot in command should communicate with dispatch and maintenance, if required, to review the situation and determine whether the flight should:

- Return to the blocks for repairs (even if the failed equipment is a “ GO” item), or
- Return to the blocks to accomplish an (m) procedure specified in the MEL before continuing the flight, or
- Continue using the alternate procedure (abnormal procedure) for operating with that failed item.

The flight may continue if the pilot in command determines that the flight can be operated safely using the alternate procedure under the conditions of the dispatch release, without communicating with dispatch and maintenance.

Note that if as in other cases, the conditions for a flight are changed to the extent that the original dispatch or flight release is no longer valid, then a new dispatch or flight release or an amended release is required.

#### 5. LOOSE AND EMERGENCY EQUIPMENT LISTING

The following listing is meant to be a quick reference for aircraft loose and emergency equipment. In case of conflict, the approved source documents (LOPA, LEEL, MEL or other approved listing / drawing) always take precedence.

EQUIPMENT	INSTALLED	REQUIRED	REMARKS
Radio Beacon Portable	1	1	See MEL 23-12-01.
Crash Axe	1	0	Not required by Malaysia Regulations.
Life Jacket - Crew	9	One required per crewmember	See MEL 25-18-01.
Life Jacket - Infant	12	One required per infant onboard	See MEL 25-18-01.
Life Jacket - Spare	8	0	See MEL 25-18-02. Not required by Malaysian Regulations.
Life Raft	4 (if installed)	4 required only for EDTO and extended overwater operations	See MEL 25-18-03.

Section 1:  
Introduction

BOEING B737-800  
MINIMUM EQUIPMENT LIST



EQUIPMENT	INSTALLED	REQUIRED	REMARKS
Restraint Pack (Plastic Handcuff)	1 (if installed)	0 (1 required for Australian destinations)	See MEL 25-63. Not required by Malaysian Regulations. Required for Australian destinations.
Megaphone	2	2	See MEL 25-01.
Fire extinguisher, portable	Cockpit: 1 Cabin: 4	Cockpit: 1 Cabin: 3	See MEL 26-03.
Escape Rope	4	0	Not required by Malaysian Regulations.
Demo Equipment	3	0	Not required by Malaysian Regulations.
Protective Breathing Equipment (PBE)	Cockpit: 1 Cabin: 6	Cockpit: 1 Cabin: 5	See MEL 35-06.
Smoke goggles	Aircraft with two observer seats: 4 Aircraft with one observer seat: 3	1 required per flight deck occupant	
Flashlight	Cockpit: 2 Cabin: 6	Cockpit: 2 Cabin: 4	See MEL 25-12.
Bassinet	2	0	Not required by Malaysian Regulations.
Seat Belt - Spare	8	0	Not required Malaysian Regulations.
Seat Belt - Extension	4	0	Not mandatory unless required for passengers.
Seat Belt - Child	10	0	Not mandatory unless required for children.
Asbestos Gloves (Fireproof Gloves)	1	0	Not required by Malaysian Regulations. See MEL 25-61.
Oxygen Bottle, Portable C/W Disposable Mask	Refer LEEL	4	See MEL 35-04.
Resuscitator	1	0	Not required by Malaysian Regulations.
First Aid Kit - Mandatory	3	2	See MEL 25-80.
Physician Kit	1	0	See MEL 25-34.

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- 21-01 Air Conditioning Packs**
- 21-01-01 All Passenger Configuration (All Models)
  - 21-01-01-01 -800 Without PATS Auxiliary Fuel Tanks (one pack inop)
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21-19-02-01 MOVED [-800 (Associated Temperature Control System Checked to Operate Normally Before Takeoff)]

21-19-02-02 -800

21-19-02-02A Trim Air PRSOV Remains CLOSED  
21-19-02-02B Trim Air Modulating Valve Deactivated CLOSED  
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21-21-02 Primary / Back-up Modes

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21-21-02-02 Both Inoperative

21-21-02-02A Trim Air PRSOV Remains CLOSED

21-21-02-02B Trim Air Modulating Valve Deactivated CLOSED

**21-26 Ground Preconditioned Air Connection Check Valve**

21-26-02 Digital Control System (-800)

21-26-02-03 -800

**21-27 Electrical/Electronic Equipment Cooling Blowers**

21-27-03 CDS (-800)

**21-31 Recirculation Fan(s)**

21-31-04 -800/-900

21-31-04A Left Recirc Fan Inoperative

21-31-04B Right Recirc Fan Inoperative

21-31-04C Both Fans Inoperative

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21-33A Pack Temperature Control Valve(s) Inoperative Closed

21-33B Pack Temperature Control Valve(s) Deactivate Closed

21-33C Associated Pack Not Used

**21-34 Standby Pack Temperature Control Valves (-800)**



BOEING B737-800  
MINIMUM EQUIPMENT LIST

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Air Conditioning

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21-34B	Associated Pack Not Used
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21-35-01	-800
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21-36-01	-800
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<b>21-42</b>	<b>Equipment Cooling Low Flow Detector Systems (-800)</b>
<b>21-43</b>	<b>Equipment Cooling Air Filter (-600/-700/-800/-900)</b>
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21-44A	<i>Airport OAT Below 80 Deg F (27 Deg C)</i>
21-44B	<i>Associated Pack Inoperative</i>
21-44C	<i>One Inoperative, Opposite Pack Operates Normally</i>
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<b>21-50</b>	<b>Flight Deck Foot and Shoulder Heater Systems</b>

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- 21-01 Air Conditioning Packs**  
**21-01-01 All Passenger Configuration (All Models)**  
**21-01-01-01 -800 Without PATS Auxiliary Fuel Tanks (one pack inop)**

Interval	Installed	Required	Procedure
C	2	1	(O) (M) [E] [P]

Except for EDTO operations, one may be inoperative provided flight altitude remains at or below FL 250.

NOTE: All MH B738 fleet is without PATS Auxiliary Fuel Tanks

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### **MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

### **OPERATIONS (O)**

*For -800:*

1. When dispatching with one operating pack supplied by engine bleed air on takeoff:
  - A. Determine V1(MCG) based on engine bleed for packs OFF.
  - B. Determine takeoff performance based on packs AUTO.
2. Limit altitude to FL 250.
3. For galley 4B or 4C food cart chiller installed, use only one chiller inflight.
4. Position the associated PACK switch to OFF.
5. Position the ISOLATION VALVE switch to CLOSE after starting engines.
6. If desired, for increased air flow when the flaps are extended (takeoff and landing), use the APU to supply bleed air to the operating pack.
  - A. Right pack inoperative
    - 1) Do the Supplementary Procedure - Air Systems "No Engine Bleed Takeoff and Landing" (Refer to the Flight Crew Operations Manual).  
 NOTE: Keep the pack switch for the right (inoperative) pack in the OFF position and the ISOLATION VALVE switch in the CLOSE position.
  - B. Left pack inoperative - PRIOR to takeoff or landing
    - 1) Engine No. 1 BLEED air switch to OFF
    - 2) R PACK switch to AUTO
    - 3) L PACK switch to OFF
    - 4) ISOLATION VALVE switch to OPEN
    - 5) Engine No. 2 BLEED air switch to OFF
    - 6) APU BLEED air switch to ON.
  - C. Left pack inoperative - AFTER takeoff or landing
    - 1) APU BLEED air switch to OFF
    - 2) Engine No. 2 BLEED air switch to ON.
    - 3) ISOLATION VALVE switch to CLOSE
    - 4) Engine No. 1 BLEED air switch to ON

**21-01 Air Conditioning Packs****21-01-01 All Passenger Configuration (All Models)****21-01-01-06 -800 (both packs inop)**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [E] [P]

Except for EDTO operations, both may be inoperative only for non-revenue flights provided:

- a. Flight is conducted in an unpressurized configuration.
- b. Recirculation fan(s) operates normally.
- c. Both E/E equipment cooling exhaust fans operate normally.
- d. Procedures are established and used to ensure lower cargo compartments remain empty or are verified to contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), and/or Fly Away Kits.
- e. Airplanes with Auxiliary tanks installed, auxiliary tanks remain empty or auxiliary fuel is included as part of zero fuel weight [Not applicable to MH aircraft].

NOTE: MAB approved in Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

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**MAINTENANCE (M)**

Configure airplane for unpressurized flight (AMM 21-00-00/901).

1. Manually position the outflow valve in the full open position.
  - A. Position the Pressurization Mode selector to MAN.
  - B. Hold the VALVE toggle switch in the OPEN position until valve position indicator indicates full open.
2. Deactivate (locked closed) the flow control and shutoff valve for the associated pack:
  - A. For the left flow control and shutoff valve, disconnect and stow the D488 or D15830 electrical connector.
  - B. For the right flow control and shutoff valve, disconnect and stow the D492 or D15834 electrical connector.
  - C. Do these steps to lock the flow control and shutoff valve in the closed position:
    - 1) Pull out the manual control shaft.
    - 2) Push in the manual control shaft.
3. Open and collar the P6-4 Panel circuit breaker A/C OVERBOARD EXH VALVE RECONFIG CONT.
4. Position one of the PACK switches in HIGH and placard.
5. For passenger cabin telecommunications system installed, open and collar P6-1 Panel circuit breaker ENTERTAINMENT PASS TEL CTU.
6. Advise MOC/FDC/OCC that performance is affected.

**OPERATIONS (O)**

1. Limit altitude to 10,000 ft. for flights with personnel in passenger cabin.
2. Non-passenger flights above 10,000 ft. require flight crew to be on oxygen.
3. Except for ditching, keep the outflow valve in the full open position.
4. Limit climb and descent rates to 500 FPM. to avoid personnel discomfort.
5. Position the ISOLATION VALVE switch to CLOSE after starting engines.
6. To improve passenger cabin and crew compartment temperatures:
  - A. If possible, pre-condition the cabin to a low temperature prior to dispatch. A low initial cabin temperature will result in a lower peak temperature.
  - B. Maintain the highest allowable flight altitude.
  - C. Minimize cabin heat by pulling the shades down and turning off unnecessary lights.
  - D. Position RECIRC FAN switch(es) to AUTO.
  - E. Estimated stabilized temperatures at the end of 30 minutes of flight are shown in this table:

NOTE 1: Limit number of personnel to 45.

NOTE 2: Prolonged operation at TAT below 10 degrees C / 50 degrees F can cause freezing of unheated water systems located in the aft lower lobe.

NOTE 3: Operation at TAT above 32 degrees C / 90 degrees F is not recommended due to the resulting high temperatures in the passenger and crew cabins.

TAT Degrees C	No. of Personnel	Passenger Cabin Temperature		Crew Cabin Temperature	
		Degrees F	Degrees C	Degrees F	Degrees C
-1	0	50	10	70	21
-1	45	70	21	75	24
10	0	70	21	90	32
10	45	80	27	95	35
21	0	90	32	110	43
21	45	95	35	110	43
32	0				
32	45				

7. Verify that the lower cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs) or fly away kits.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

**21-02 Pack Airflow / Shutoff Valves**

Interval	Installed	Required	Procedure
C	2	0	(M)(O)[P]

May be inoperative deactivated closed.

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**MAINTENANCE (M)**

NOTE: For a pack airflow shutoff valve deactivated closed, the associated pack is considered inoperative. The airplane must also be dispatched using MEL item 21-01.

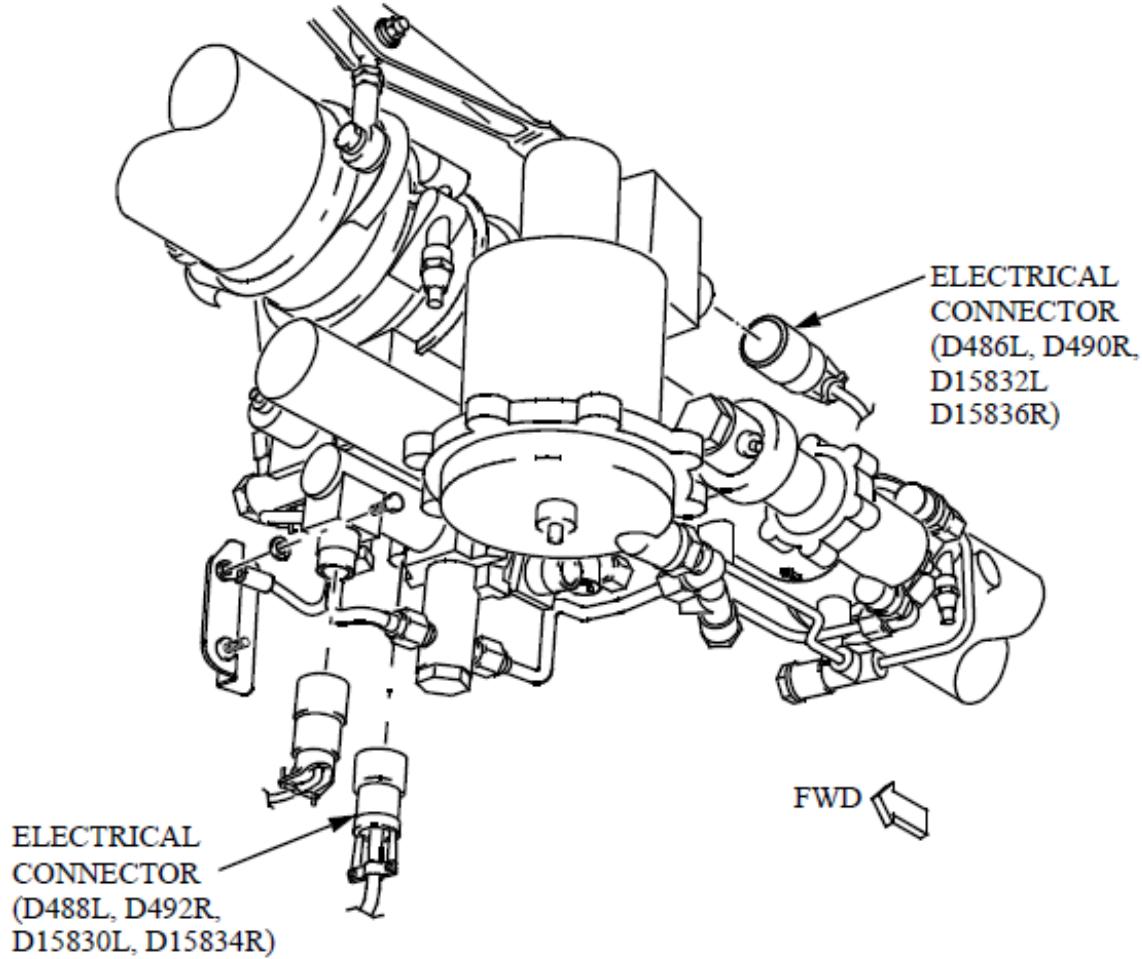
**For -800:**

Deactivate and close the associated flow control and shutoff valve(s) (AMM 21-00-00/901):

1. Remove pressure from the pneumatic system.
2. Gain access to the inoperative flow control and shutoff valve located in the air conditioning bay.
3. For the left flow control and shutoff valve, disconnect, cap and stow the D488 or D15830 electrical connector.
4. For the right flow control and shutoff valve, disconnect, cap and stow the D492 or D15834 electrical connector.
5. If the left flow control and shutoff valve limit switch has failed in the OPEN position:
  - A. Disconnect the electrical connector D486 or D15832.
  - B. Insert a jumper between pins 1 and 3.
  - C. Make sure there is continuity to airplane ground at pin 3.
  - D. Cap and stow connector D486 or D15832.
6. If the right flow control and shutoff valve limit switch has failed in the OPEN position:
  - A. Disconnect the electrical connector D490 or D15836.
  - B. Insert a jumper between pins 1 and 3.
  - C. Make sure there is continuity to airplane ground at pin 3.
  - D. Cap and stow connector D490 or D15836.
7. Push in the manual control shaft. If already in, pull out and push back in to verify that the plunger is in.
8. If both flow control and shutoff valves are inoperative:
  - A. Manually position the outflow valve in the full open position:
    - 1) Position the Pressurization Mode selector to MAN.
    - 2) Hold the VALVE toggle switch in the OPEN position until valve position indicator indicates full open.
  - B. Open and collar the P6-4 Panel circuit breaker A/C OVERBOARD EXH VALVE RECONFIG CONT.
  - C. Position one of the PACK switches in HIGH.
  - D. For passenger cabin telecommunications system installed, open and collar P6-1 Panel circuit breaker ENTERTAINMENT PASS TEL CTU.

**OPERATIONS (O)**

- For a pack airflow shutoff valve deactivated closed, the associated pack is considered inoperative. The airplane must also be dispatched using MEL item 21-01.



**PACK AIRFLOW/SHUT-OFF VALVE (TYPICAL)**

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**21-02      Pack Airflow / Shutoff Valves**

**21-02-01    High Flow Mode (-800)**

Interval	Installed	Required	Procedure
C	2	0	

**21-02 Pack Airflow / Shutoff Valves****21-02-02 APU High Flow Mode**

Interval	Installed	Required	Procedure
C	2	0	

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**21-02 Pack Airflow / Shutoff Valves****21-02-03 Electronic Flow Control (-800)**

Interval	Installed	Required	Procedure
C	2	0	

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**21-02 Pack Airflow / Shutoff Valves****21-02-04 Position Indicator Switch Discrete Signal (Flow Control Valve P/N 396608-1)****21-02-04A Failed Open**

Interval	Installed	Required	Procedure
C	2	1	

May be inoperative failed open provided both air conditioning packs operate normally.

---

**OPERATIONS NOTE**

1. Normal takeoff, engine BLEED air switches ON:
  - A. Discrete failed open (pack ON signaled to EEC/FMC):
    - 1) Normal engine bleed on takeoff N1 target displayed.
    - 2) Airplane performance dispatch is calculated assuming packs ON.
2. No engine bleed takeoff:
  - A. Discrete failed open (pack ON signaled to EEC/FMC):
    - 1) No engine bleed takeoff N1 target displayed.
    - 2) Airplane performance dispatch is calculated assuming packs OFF.
3. In-Flight:
  - A. Discrete failed open (pack ON signaled to EEC/FMC):
    - 1) Normal engine bleed on N1 target displayed.

- 
- 21-02**      **Pack Airflow / Shutoff Valves**  
**21-02-04**    **Position Indicator Switch Discrete Signal (Flow Control Valve P/N 396608-1)**  
**21-02-04B**   **Failed Closed**

Interval	Installed	Required	Procedure
C	2	1	

**May be inoperative failed closed provided both air conditioning packs operate normally.**

-----

### **OPERATIONS NOTE**

1. Normal takeoff, engine BLEED air switches ON:
  - A. Discrete failed closed (pack OFF signaled to EEC/FMC):
    - 1) FMC target will be too high, resulting in engine overboost and increased likelihood of EGT or N2 exceedance.
      - a. Do not use autothrottle.
      - b. Manually calculate and set takeoff N1 based on engine bleeds on.
      - c. Airplane performance dispatch is calculated assuming packs ON.
2. No engine bleed takeoff:
  - A. Discrete failed closed (pack OFF signaled to EEC/FMC):
    - 1) A no engine bleed or APU-to-pack takeoff is not allowed.
3. In-Flight:
  - A. Discrete failed closed (pack OFF signaled to EEC/FMC):
    - 1) FMC target will be too high, resulting in engine overboost and increased likelihood of EGT or N2 exceedance.
      - a. Do not use autothrottle.
      - b. Manually calculate and set N1 based on engine bleeds on.
      - c. Observe normal engine bleed on for en-route climb and go-around AFM performance limits.

- 
- 21-02**      **Pack Airflow / Shutoff Valves**  
**21-02-05**    **Pack Flow Control Sensors**

Interval	Installed	Required	Procedure
C	2	0	

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**21-03 Pack Trip Warning Systems**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative provided associated pack is not used.

NOTE 1:MEL Item 21-01 restrictions for inoperative pack(s) must be observed.

**MAINTENANCE (M)**

Use MEL item 21-01 (M) procedure for one or two packs inoperative, as applicable.

**OPERATIONS (O)**

Use MEL item 21-01 (O) procedure for one or two packs inoperative, as applicable.

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**21-05 Pack Ram Air Systems**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative in FLIGHT OPEN position provided:

- a. Operations are not conducted on runways covered with slush or on gravel runways.
  - b. Associated pack is not operated during takeoff or landing on wet runways or runways with standing water.
- - - - -

**MAINTENANCE (M)**
**For -800 without Smart Ram Air Door Actuator (SRADA):**

Deactivate the ram air modulating system in the flight open position (AMM 21-00-00/901).

1. Open and collar the associated circuit breakers:
  - A. AIR CONDITIONING RAM AIR MOD LEFT(RIGHT)
  - B. AIR CONDITIONING RAM AIR MOD CONT L(R)
2. Open the associated ram air actuator panel.
3. Disconnect and stow the electrical connector.
4. Remove bolt connecting the actuator rod end to the bellcrank.
5. Separate actuator rod from bellcrank and reinstall and secure bolt in the bellcrank.
6. Rotate the bellcrank to align the rigging pin holes on the shaft assembly with the holes on the bearing housing support.
7. Install a bolt (BACB30UU3P36D or equivalent) through the rigging pin holes.
8. Install a nut (BACN10JD3 or equivalent) and cotter pin (BACP18BC01D06P or equivalent) on the bolt.
9. Use safety wire to secure the actuator rod end to the attach bolt in the bellcrank.
10. Close the ram air actuator panel.
11. Close the associated circuit breakers:
  - A. AIR CONDITIONING RAM AIR MOD LEFT(RIGHT)
  - B. AIR CONDITIONING RAM AIR MOD CONT L(R)
12. Advise MOC/FDC/OCC that performance is affected. Refer Operations (O) procedure.

**For -800 with Smart Ram Air Door Actuator (SRADA):**

Deactivate the ram air inlet modulating system in the flight open position and the ram air exit modulating in the open position:

(AMM 21-00-00/901)

1. Open and collar the associated circuit breakers:
  - A. AIR CONDITIONING RAM AIR MOD LEFT (RIGHT)
  - B. AIR CONDITIONING RAM AIR MOD CONT LEFT (RIGHT)
  - C. AIR CONDITIONING PACK CONTROL LEFT DC (RIGHT DC)
  - D. AIR CONDITIONING PACK CONTROL LEFT AC (RIGHT AC)
2. Open the associated ram air inlet and exit actuator panels.

3. Deactivate the ram air inlet modulating system.
  - A. Disconnect and stow the two electrical connector.
  - B. Remove bolt, washers, and nut that connect the actuator rod end to the bellcrank.
  - C. Disconnect the actuator rod end from the bellcrank and reinstall and tighten the bolt, washer, and nut in the bellcrank.
  - D. Rotate the bellcrank to align the rigging pin holes on the shaft assembly with the holes on the bearing housing support.
  - E. Install a bolt (BACB30UU3P36D or equivalent) with a 0.1875 inch (4.7625 mm) shank diameter and 2.2 inch (55.88 mm) shank length through the rigging pin holes. The shank end must be drilled for a cotter pin.
  - F. Install a nut (BACN10JD3 or equivalent) and cotter pin (BACP18BC01D06P or equivalent) with a 0.047 inch (1.193 mm) diameter and a 0.75 inch (19.05 mm) length on the bolt.
  - G. Use lockwire to safety the actuator rod end to the attach bolt in the bellcrank.
  - H. Close the associated ram air inlet actuator panel.
4. Deactivate the ram air exit modulating system using one (A or B) of the following procedures.
  - A. With Actuator Removal
    - 1) Disconnect and stow the two electrical connectors.
    - 2) Remove bonding jumper from the structure attached to SRADA.
    - 3) Remove actuator and mounting hardware. Reinstall mounting hardware without actuator. Retain hardware for remounting the replacement actuator.
    - 4) Remove bolt (BACB30PW4-9), nut (BACN10YR3CM), and washers (NAS1149E0463P and NAS1149E0316R) from the forward most drive link (213A3338-5/-6).
    - 5) Once free, open the exit louvers until the forward most hole in the link assembly lines up with the hole in the forward most drive link arm.
    - 6) Reinstall the hardware removed in step 4.D in the same order it was uninstalled.
    - 7) The louvers should be open approximately 56 degrees relative to the airplane skin.
    - 8) Close the associated ram air exit actuator panel.
  - B. Without Actuator Removal (using SRADA stowage link, part number C21009)
    - 1) Disconnect and stow the two electrical connectors.
    - 2) Disconnect the actuator rod end from the actuator drive arm.
    - 3) Remove bolt (BACB30PW4-9), nut (BACN10YR3CM), and washers (NAS1149E0463P and NAS1149E0316R) from the forward most drive link (213A3338-5/-6).
    - 4) Once free, open the exit louvers until the forward most hole in the link assembly lines up with the hole in the forward most drive link arm.
    - 5) Reinstall the hardware removed in step 4B.3 in the same order it was uninstalled.
    - 6) The louvers should be open approximately 56 degrees relative to the airplane skin.

- 7) Connect one end of the SRADA stowage link to the actuator drive arm using the hardware removed in step 4B.2.
  - 8) Connect the other end of the SRADA stowage link to the actuator rod end using bolt (BACB30LM4U12), washer (BACW10BP4ACU) under the head of the bolt, washer (BACW10BP4APU) under the nut, and the nut (BACN10YR4CM).
  - 9) Close the associated ram air exit actuator panel.
5. Close the associated circuit breakers:
- A. AIR CONDITIONING RAM AIR MODE LEFT(RIGHT)
  - B. AIR CONDITIONING RAM AIR MOD CONT L(R)
  - C. AIR CONDITIONING PACK CONTROL LEFT DC (RIGHT DC)
  - D. AIR CONDITIONING PACK CONTROL LEFT AC (RIGHT AC)
6. Advise MOC/FDC/OCC that performance is affected. Refer Operations (O) procedure.

## **OPERATIONS (O)**

### For -800

NOTE: With the ram air modulating deactivated ,the AIR COND light and the associated PACK light may or may not illuminate during Master Caution recall. If illuminated, the AIR COND and associated PACK light will extinguish when reset.

### For All Models:

1. During takeoff and landing when operating on wet runways or on runways with standing water.
  - A. Position associated PACK switch(es) to OFF
  - B. Position the ISOLATION VALVE switch to CLOSE.

### For -800:

2. When dispatching with one operating pack supplied by engine bleed air on takeoff:
  - A. Determine V1(MCG) based on engine bleed for packs OFF.
  - B. Determine takeoff performance based on packs AUTO.
3. For each inoperative Pack Ram Air System, use these performance penalties to account for the increased drag with the ram air inlet door inoperative in the FLIGHT OPEN position:

NOTE: For -800 airplanes with the Smart Ram Air Door Actuator (SRADA), the performance penalties are the same as airplanes without the SRADA.

MODEL	ENROUTE CLIMB	FUEL MILEAGE
-800	141 lb (64 kg)	0.4%

NOTE: Enroute climb penalties are based on single engine operating speeds that approximate maximum lift-to-drag ratio speed. To account for the difference in level off altitude when operating at other speeds, multiply the enroute climb weight penalty listed above by the appropriate factor listed in MEL Section 3, Enroute Diversion Speed Effects.

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**21-07 RAM DOOR FULL OPEN Indicating Lights**

Interval	Installed	Required	Procedure
C	2	0	

**21-10 Cabin Rate of Climb Indicator****21-10-02 Digital Control System (-800)****21-10-02-00 -800 (pressurized flight)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided AUTO and ALTN control modes operate normally.

**21-10 Cabin Rate of Climb Indicator****21-10-02 Digital Control System (-800)****21-10-02-03 -800 (unpressurized flight)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- Flight is conducted in an unpressurized configuration.
- Procedures are established and used to ensure lower forward 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.
- Outflow valve is positioned to 25% open position.
- Recirculation fan(s) operate normally.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

**MAINTENANCE (M)**

Configure the airplane for unpressurized flight (AMM 21-00-00/901).

- Manually position the outflow valve in the 25% open position:
  - Position the Pressurization Mode selector to MAN.
  - Hold the VALVE toggle switch in the OPEN position until valve position indicator indicates 25% open.
- Open and collar P6-4 Panel circuit breaker A/C OVERBOARD EXH VALVE RECONFIG CONT.
- Advise MOC/FDC/OCC that performance is affected.

**OPERATIONS (O)**

- Limit altitude to 10,000 ft. for passenger flights.
- Non-passenger flights above 10,000 ft. require flight crew to be on oxygen.
- Except for ditching, keep the outflow valve in the 25% open position.
- Use only one pack inflight.

5. When dispatching with one operating pack supplied by engine bleed air on takeoff:
  - A. Determine V1(MCG) based on engine bleed for packs OFF.
  - B. Determine takeoff performance based on packs AUTO.
6. For galley 4B food cart chiller installed, use only one chiller inflight.
7. Limit climb and descent rates to 500 FPM to avoid passenger discomfort.
8. Verify that the lower forward cargo compartment remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs) or fly away kits.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of “non-combustible materials” such as metal tools/cable/containers, iron or steel bars/sheets etc.

**21-11 Cabin Altitude Warning System**

Interval	Installed	Required	Procedure
C	1	0	(M) [P]

May be inoperative provided flight altitude remains at or below 10,000 feet MSL.

**MAINTENANCE**

Advise MOC/FDC/OCC that performance is affected.

**21-11 Cabin Altitude Warning System****21-11-01 High Altitude Warning System**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided procedures do not require its use.

**21-11 Cabin Altitude Warning System****21-11-02 CABIN ALTITUDE Light****21-11-02-03 -800**

Interval	Installed	Required	Procedure
C	2	1	(O)

May be inoperative provided associated TAKEOFF CONFIG warning light operates normally and flight crew performs a briefing on cabin altitude warning indications and procedures before engine start for the first flight of the day or following any change of either flight crew member.

**OPERATIONS (O)**

Cabin altitude warning indications and procedures must be included in the takeoff briefing conducted by the flight crew before engine start. This briefing must include the following :

Whenever the intermittent warning horn sounds in flight at an airplane flight altitude above 10,000 MSL:

1. Immediately don oxygen masks and set regulator to 100%.
2. Establish Crew communications.
3. Do the Cabin Altitude Warning or rapid Depressurization non-normal checklist.

Both pilots must verify on the overhead Cabin Altitude panel that the cabin altitude is stabilized below 10,000 feet before removing oxygen masks.

Whenever the intermittent warning horn sounds on the ground, confirm the airplane is properly configured for takeoff.



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- 
- 21-12      Cabin Altitude Indicator**  
**21-12-02    Digital Control System (-800)**  
**21-12-02-00 -800 (Pressurized Flight)**
- 

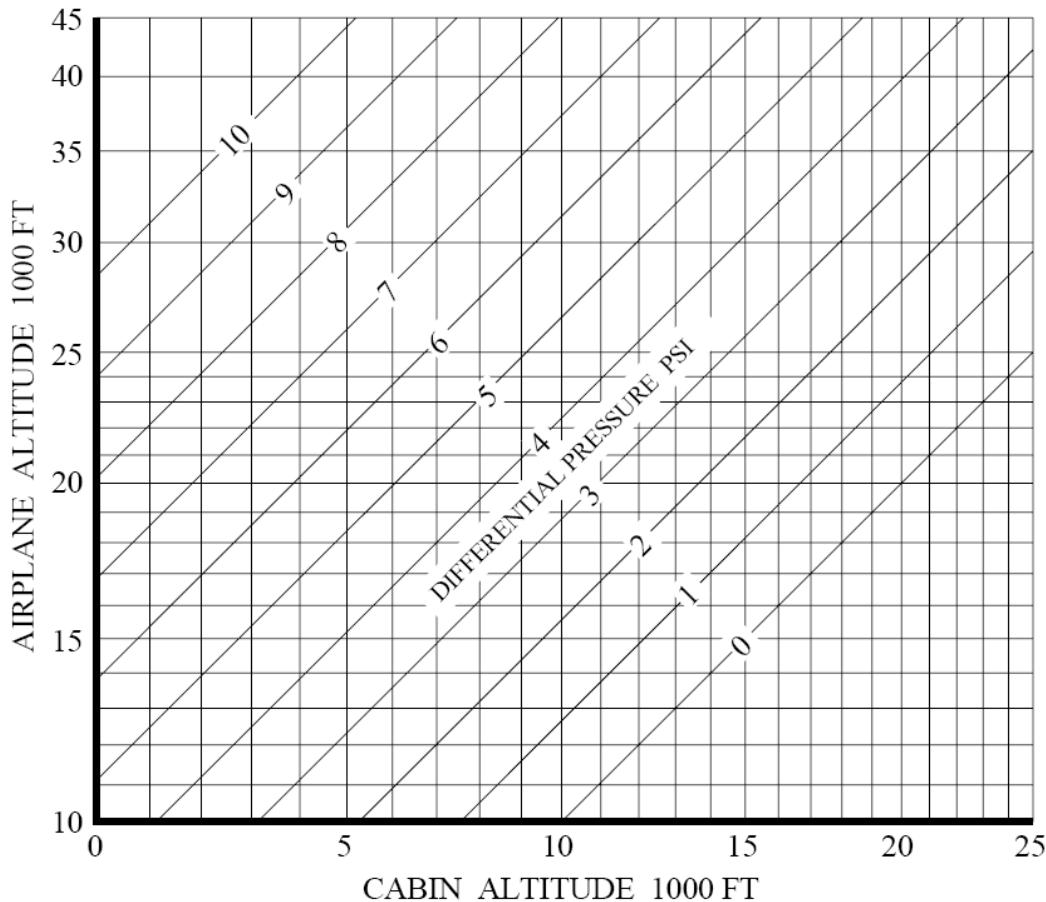
Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- a. Cabin differential pressure indicator operates normally.
  - b. A chart is provided to crew to convert differential pressure to cabin altitude.
- - - - -

### **OPERATIONS NOTE**

This chart can be used to convert differential pressure to cabin altitude:



- 21-12 Cabin Altitude Indicator**  
**21-12-02 Digital Control System (-800)**  
**21-12-02-03 -800 (Unpressurized Flight)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. Flight is conducted in an unpressurized configuration.
- b. Procedures are established and used to ensure lower forward 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.
- c. Outflow valve is positioned to 25% open position.
- d. Recirculation fan(s) operate normally.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

### **MAINTENANCE (M)**

1. Use MEL item 21-10-02-03 (M) procedure.
2. Advise MOC/FDC/OCC that performance is affected.

### **OPERATIONS (O)**

Use MEL item 21-10-02-03 (O) procedure.

**21-13 Cabin Differential Pressure Indicator****21-13-02 Digital Control System (-800)****21-13-02-00 -800 (pressurized flight)**

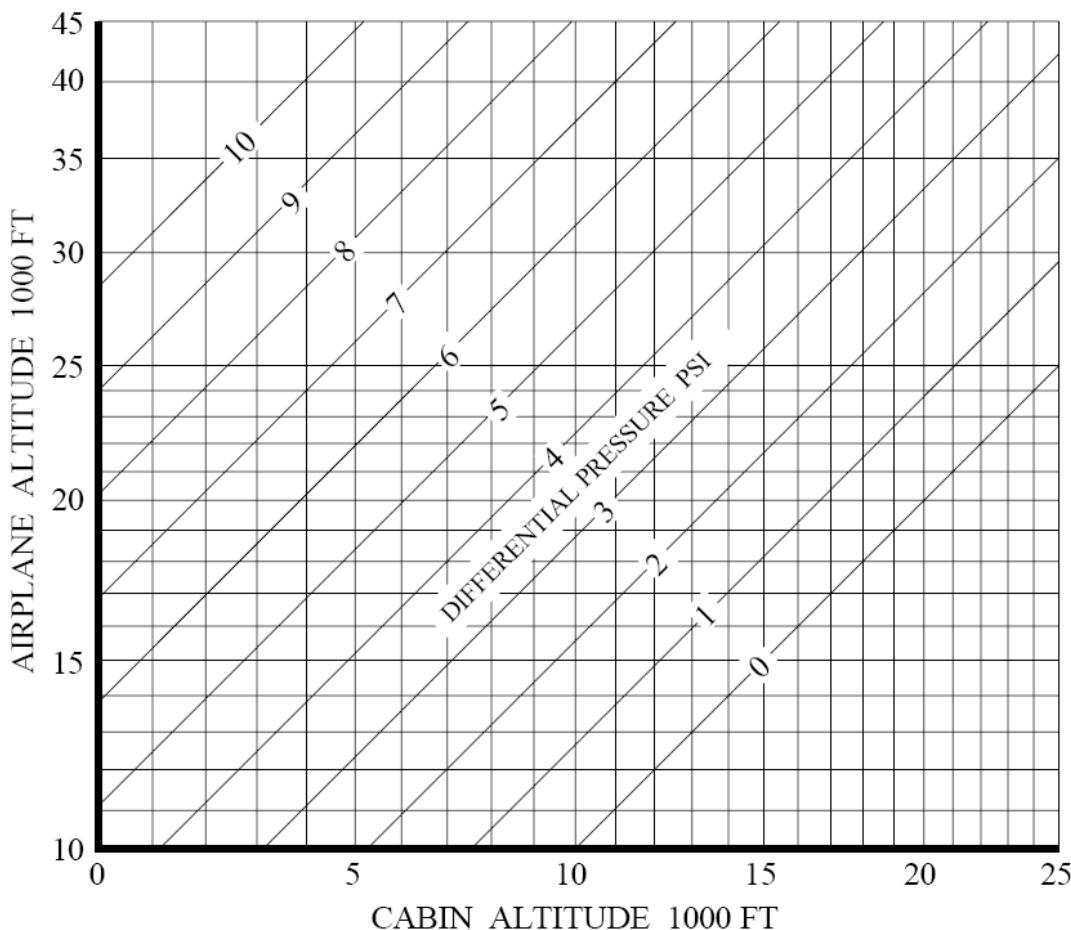
Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- Cabin altitude indicator operates normally.
- A chart is provided to crew to convert cabin altitude to differential pressure.

**OPERATIONS NOTE**

This chart can be used to convert cabin altitude to differential pressure.



- 21-13 Cabin Differential Pressure Indicator**  
**21-13-02 Digital Control System (-800)**  
**21-13-02-03 -800 (unpressurized flight)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. Flight is conducted in an unpressurized configuration.
- b. Procedures are established and used to ensure lower forward 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.
- c. Outflow valve is positioned to 25% open position.
- d. Recirculation fan(s) operate normally.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

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### **MAINTENANCE (M)**

1. Use MEL item 21-10-02-03 (M) procedure.
2. Advise MOC/FDC/OCC that performance is affected.

### **OPERATIONS (O)**

Use MEL item 21-10-02-03 (O) procedure.

- 
- 21-14 Cabin Pressure Control System**  
**21-14-03 Digital Control System Automatic Modes (-800)**  
**21-14-03-00 -800 (Pressurized Flight)**

Interval	Installed	Required	Procedure
C	2	1	(M) (O)

One may be inoperative provided:

- a. Manual mode operates normally.
  - b. Inoperative controller is deactivated.
  - c. For airplanes with auxiliary fuel bleed air pressurization system installed is verified to be operational before each departure, if the auxiliary fuel tank system is required for flight [Not applicable to MH aircraft].
- - - - -

**NOTE:** Some DCPCS faults indicated by an AUTO FAIL Light are recoverable.

Momentarily re-position the Pressurization Mode Selector to MAN and then back to AUTO. If the AUTO FAIL light remains extinguished with the Pressurization Mode Selector in AUTO, the fault has been corrected and the controller is operating normally.

### **MAINTENANCE (M)**

Model 737-800 airplanes modified with the PATS BBJ auxiliary fuel tank

Installation, verify that the forward auxiliary fuel tank bleed air pressurization system is operating per the PATS Auxiliary Fuel System Maintenance Manual before each departure if the auxiliary fuel tank system is required for flight.

#### For -800:

Deactivate the inoperative cabin pressure controller (AMM 21-00-00/901):

1. Open and collar the associated P6-4 panel circuit breaker  
PRESSURIZATION CONTROL-AUTO 1 or AUTO 2.

### **OPERATIONS (O)**

1. Normal operation of manual mode may be confirmed as follows:
  - A. Position the Pressurization Mode Selector to MAN.
  - B. Use the VALVE toggle switch to observe that the outflow valve position indicator moves to full open, to full closed and then back to full open.
2. Position the Pressurization Mode Selector to ALTN prior to dispatch.  
 NOTE: Subsequent illumination of the AUTO FAIL light during flight requires positioning the Pressurization Mode Selector to MAN for manual mode operation

- 
- 21-14 Cabin Pressure Control System**  
**21-14-03 Digital Control System Automatic Modes (-800)**  
**21-14-03-03 -800 (unpressurized flight)**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative for unpressurized flight provided:

- a. Outflow valve is deactivated in 25% open position or removed.
- b. Recirculation fan(s) operate normally.
- c. Extended overwater flight is prohibited.
- d. Airplanes with auxiliary tanks installed, auxiliary tanks remain empty or auxiliary fuel is included as part of zero fuel weight [Not applicable to MH aircraft].

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

NOTE: Some DCPCS faults indicated by an AUTO FAIL Light are recoverable. Momentarily re-position the Pressurization Mode Selector to MAN and then back to AUTO. If the AUTO FAIL light remains extinguished with the Pressurization Mode Selector in AUTO, the fault has been corrected and the controller is operating normally.

### **MAINTENANCE (M)**

1. Configure airplane for unpressurized flight (AMM 21-00-00/901):
  - A. Manually position the outflow valve in the 25% open position:
    - 1) Position the Pressurization Mode selector to MAN.
    - 2) Hold the VALVE toggle switch in the OPEN position until valve position indicator indicates 25% open.
  - B. If the outflow valve cannot be positioned to the 25% open position, remove the outflow valve (AMM 21-31-03/401). Stow electrical connectors.
  - C. Open and collar these P-6 Panel circuit breakers:
    - 1) PRESSURIZATION CONTROL MANUAL
    - 2) PRESSURIZATION CONTROL AUTO 1
    - 3) PRESSURIZATION CONTROL AUTO 2
    - 4) PRESSURIZATION CONTROL IND
    - 5) PRESSURIZATION CONTROL LCD LTG
    - 6) A/C OVERBOARD EXH VALVE RECONFIG CONT.
2. Advise MOC/FDC/OCC that performance is affected, and that aircraft is not qualified for extended overwater flight.

**OPERATIONS (O)**

1. Limit altitude to 10,000 ft. for passenger flights.
2. Non-passenger flights above 10,000 ft. require flight crew to be on oxygen.
3. Extended overwater flight is prohibited.
4. Use only one pack inflight.
5. When dispatching with one operating pack supplied by engine bleed air on takeoff:
  - A. Determine V1(MCG) based on engine bleed for packs OFF.
  - B. Determine takeoff performance based on packs AUTO.
6. For galley 4B food cart chiller installed, use only one chiller inflight.
7. Limit climb and descent rates to 500 FPM to avoid passenger discomfort.
8. Verify that the lower forward cargo compartment remains empty or contains only ballast empty cargo handling equipment (ballast may be loaded in ULDs) or fly away kits.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

**21-14            Cabin Pressure Control System**  
**21-14-04        Digital Control System Manual Mode (-800)**  
**21-14-04-03      -800**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative for unpressurized flight provided:

- a. Procedures are established and used to ensure lower forward 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.
- b. Outflow valve is deactivated in 25% open position or removed.
- c. Recirculation fan(s) operate normally.
- d. Extended overwater flight is prohibited.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

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NOTE: Some DCPCS faults indicated by an AUTO FAIL Light are recoverable. Momentarily re-position the Pressurization Mode Selector to MAN and then back to AUTO. If the AUTO FAIL light remains extinguished with the Pressurization Mode Selector in AUTO, the fault has been corrected and the controller is operating normally.

**MAINTENANCE (M)**

Configure airplane for unpressurized flight (AMM 21-00-00/901)

1. Position the outflow valve in the 25% open position:
  - A. Set parking brake.
  - B. Start both engines (AMM 71-00-00/201).
  - C. Run the engines for two minutes to allow them to stabilize.
  - D. Advance thrust levers as necessary to make sure that N1 is greater than 60% and N2 is greater than 89%.
  - E. Monitor the outflow valve position indicator as it goes to the closed position.
  - F. When the outflow valve is in the 25% position, open and collar these P6-4 circuit breakers:
    - 1) PRESSURIZATION CONTROL AUTO 1
    - 2) PRESSURIZATION CONTROL AUTO 2.
  - G. Retard thrust levers and shut down both engines.
2. If the outflow valve can not be positioned to the 25% open position, remove the outflow valve (AMM 21-31-03/401). Stow electrical connectors.
3. Open and collar these P6-4 Panel circuit breakers:
  - A. PRESSURIZATION CONTROL MANUAL
  - B. PRESSURIZATION CONTROL AUTO 1
  - C. PRESSURIZATION CONTROL AUTO 2
  - D. PRESSURIZATION CONTROL IND
  - E. PRESSURIZATION CONTROL LCD LTG
  - F. A/C OVERBOARD EXH VALVE RECONFIG CONT.
4. Advise MOC/FDC/OCC that performance is affected, and that aircraft is not qualified for extended overwater flight.

**OPERATIONS (O)**

1. Limit altitude to 10,000 ft. for passenger flights.
  2. Non-passenger flights above 10,000 ft. require flight crew to be on oxygen.
  3. Extended overwater flight is prohibited.
  4. Use only one pack inflight.
  5. When dispatching with one operating pack supplied by engine bleed air on takeoff:
    - A. Determine V1(MCG) based on engine bleed for packs OFF.
    - B. Determine takeoff performance based on packs AUTO.
  6. For galley 4B food cart chiller installed, use only one chiller inflight.
  7. Limit climb and descent rates to 500 FPM to avoid passenger discomfort.
  8. Verify that the lower forward cargo compartment remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs) or fly away kits.
- NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools / cable / containers, iron or steel bars/sheets etc.

- 
- 21-15 Main Outflow Valve**  
**21-15-02 Digital Control System Outflow Valve Automatic Mode Actuators (-800)**  
**21-15-02-02 -800 (one inop, pressurized flight)**

Interval	Installed	Required	Procedure
C	2	1	(M) (O)

One may be inoperative provided manual mode actuator operates normally.

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### **MAINTENANCE (M) & OPERATIONS (O)**

Select ALTN on the Pressurization Mode Selector.

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- 21-15 Main Outflow Valve**  
**21-15-02 Digital Control System Outflow Valve Automatic Mode Actuators (-800)**  
**21-15-02-04 -800 (both inop, unpressurized flight)**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative for unpressurized flight provided:

- Procedures are established and used to ensure lower forward 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.
- Outflow valve is deactivated in 25% open position or removed.
- Recirculation fan(s) operate normally.
- Extended overwater flight is prohibited.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

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### **MAINTENANCE (M)**

- Use MEL item 21-14-03-03 (M) procedure.
- Advise MOC/FDC/OCC that performance is affected, and that aircraft is not qualified for extended overwater flight.

### **OPERATIONS (O)**

Use MEL item 21-14-03-03 (O) procedure.

**21-15 Main Outflow Valve**

**21-15-03 Digital Control System Outflow Valve Manual Mode  
Actuator (-800)**

**21-15-03-03 -800**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative for unpressurized flight provided:

- a. Procedures are established and used to ensure lower forward 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.
- b. Outflow valve is deactivated in 25% open position or removed.
- c. Recirculation fan(s) operate normally.
- d. Extended overwater flight is prohibited.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of “non-combustible materials” such as metal tools/cable/containers, iron or steel bars/sheets etc.

### **MAINTENANCE (M)**

1. Use MEL item 21-14-04-03 (M) procedure.
2. Advise MOC/FDC/OCC that performance is affected, and that aircraft is not qualified for extended overwater flight.

### **OPERATIONS (O)**

Use MEL item 21-14-04-03 (O) procedure.

**21-16 Pressure Relief Valves****21-16-02 Digital Control System (-800)****21-16-02-00 -800 (pressurized flight)**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative closed for pressurized flight.

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**MAINTENANCE (M)***For -800:*

Install a blanking plate in place of the inoperative pressure relief valve (AMM 21-00-00/901):

1. Remove the aft bulkhead liner in the aft cargo compartment.
2. Remove the pressure relief valve (AMM 21-32-01/401).
3. Retain the clamp and the gasket.
4. Using the gasket as a template, Make a blanking plate from 0.125 - 0.1875 inch (3.17 - 4.76 mm) 2024 T3 aluminum to seal the pedestal. Make sure holes are drilled through the blanking plate to accept locating pins and ambient sense tube.
5. Apply lubricant to both sides of the gasket.
6. Install the gasket, blanking plate, and clamp on the pedestal.
7. Put an airtight cap on the ambient sense tube.
8. Install the aft bulkhead liner in the aft cargo compartment.

- 21-16 Pressure Relief Valves**  
**21-16-02 Digital Control System (-800)**  
**21-16-02-03 -800 (unpressurized flight)**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative provided:

- a. Flight is conducted in an unpressurized configuration.
- b. Procedures are established and used to ensure lower forward 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.
- c. Outflow valve is positioned to 25% open position.
- d. Recirculation fan(s) operate normally.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

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### **MAINTENANCE (M)**

1. Use MEL item 21-10-02-03 (M) procedure.
2. Advise MOC/FDC/OCC that performance is affected.

### **OPERATIONS (O)**

Use MEL item 21-10-02-03 (O) procedure.

---

**21-17      Temperature Indicators**  
**21-17-02    Supply Duct**

Interval	Installed	Required	Procedure
C	3	0	

May be inoperative provided associated ZONE TEMP light operates normally.

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**21-17      Temperature Indicators**  
**21-17-03    Pass Cabin**

Interval	Installed	Required	Procedure
C	-	0	

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**21-17      Temperature Indicators**  
**21-17-04    Pack (-800)**

Interval	Installed	Required	Procedure
C	2	0	



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**21-18 Duct Overheat Warning Lights**

**21-18-02 ZONE TEMP**

Interval	Installed	Required	Procedure
C	3	0	

May be inoperative provided associated supply duct temperature indicator operates normally.

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- 
- 21-19 Passenger Cabin Temperature Control System**  
**21-19-02 FWD / AFT**  
**21-19-02-01 MOVED [-800 (Associated Temperature Control System  
Checked to Operate Normally Before Takeoff)]**

Interval	Installed	Required	Procedure

Moved to MEL 21-19-02-02C.

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- 21-19 Passenger Cabin Temperature Control System**  
**21-19-02 FWD / AFT**  
**21-19-02-02 -800**  
**21-19-02-02A Trim Air PRSOV Remains CLOSED**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided Trim Air Pressure Regulating and Shutoff Valve remains CLOSED.

---

#### **MAINTENANCE (M)**

Position the TRIM AIR switch to OFF.

#### **OPERATIONS (O)**

1. Operate with TRIM AIR switch OFF.
2. Use normal procedures to operate the temperature selectors.

- 
- 21-19 Passenger Cabin Temperature Control System**  
**21-19-02 FWD / AFT**  
**21-19-02-02 -800**  
**21-19-02-02B Trim Air Modulating Valve Deactivated CLOSED**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided associated Trim Air Modulating Valve is deactivated CLOSED.

---

#### **MAINTENANCE (M)**

For -800:

Deactivate trim air modulating valve(s) (locked closed) (AMM 21-00-00/901):

For All Models:

1. Position the FWD CAB and/or AFT CAB Temperature Selector to OFF.
2. Locate the associated trim air modulating valve(s) in the right ECS bay.

3. Turn the manual override until the visual position indicator shows the full closed position.
4. Disconnect and stow the electrical connector from the valve(s).
5. Position the associated Temperature Selector(s) to the normal temperature range.

### **OPERATIONS (O)**

Use normal procedures to operate the temperature selectors.

With a trim a modulating valve deactivated, the associated FWD CAB or AFT CAB ZONE TEMP light will illuminate during Master Caution recall and will extinguish when Master Caution is reset.

---

**21-19 Passenger Cabin Temperature Control System**

**21-19-02 FWD / AFT**

**21-19-02-02 -800**

**21-19-02-02C Associated Temperature Control System**

**Checked to Operate Normally Before Takeoff**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be dispatched with faults indicated by ZONE TEMP Light(s) during Master Caution recall provided associated temperature control system is checked to operate normally before each takeoff.

-----

### **OPERATIONS (O)**

Check normal operation of the associated temperature control system before each takeoff:

1. Make sure that the passenger cabin temperature is stabilized between 70 - 80 degrees F (21 - 27 degrees C).
2. Position the AIR TEMP source selector to SUPPLY DUCT - FWD or SUPPLY DUCT - AFT.
3. Rotate the associated temperature selector fully clockwise (W).
4. Observe the Air Temperature indicator and check that the temperature increases.
5. Rotate the associated temperature selector fully counter clockwise (C).
6. Observe the Air Temperature indicator and check that the temperature decreases.

**21-20 MOVED (Cabin Temperature Indicator)**

Interval	Installed	Required	Procedure

Incorporated into item 21-17, DDG Revision 34a.

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**21-21 Flight Deck Temperature Control System**
**21-21-02 Primary / Back-up Modes**
**21-21-02-01 -800 (One Inoperative)**

Interval	Installed	Required	Procedure
C	2	1	(O)

One may be inoperative provided remaining temperature control is verified to operate normally.

-----

**OPERATIONS (O)**

For initial dispatch with one flight deck temperature control system inoperative, verify normal operation of the remaining flight deck temperature control system (Primary or Back-up):

1. Push the left or right system annunciator panel on the glare shield and observe that these lights illuminate:
  - A. ZONE TEMP for the CONT CAB Temperature Selector
  - B. AIR COND
  - C. MASTER CAUTION.
2. Push the left or right MASTER CAUTION light and observe that these lights extinguish:
  - A. ZONE TEMP for the CONT CAB Temperature Selector
  - B. AIR COND
  - C. MASTER CAUTION.
3. Verify that the flight deck supply duct temperature responds to the Temperature Selector:
  - A. Position the AIR TEMP source selector to SUPPLY DUCT - CONT CAB.
  - B. Rotate the CONT CAB Temperature Selector to the full clockwise position (full warm).
  - C. Observe the Air Temperature indicator and check that the temperature increases.
  - D. Rotate the CONT CAB Temperature Selector to the full counter clockwise position (full cold).
  - E. Observe the Air Temperature indicator and check that the temperature decreases.
4. Use normal procedures to operate the temperature selectors.

**21-21 Flight Deck Temperature Control System****21-21-02 Primary / Back-up Modes****21-21-02-02 -800 (Both Inoperative)****21-21-02-02A Trim Air PRSOV Remains CLOSED**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided Trim Air Pressure Regulating and Shutoff Valve remains CLOSED.

-----

**MAINTENANCE (M)**

Position the TRIM AIR switch to OFF.

**OPERATIONS (O)**

1. Operate with TRIM AIR switch OFF.
2. Use normal procedures to operate the temperature selectors. If a comfortable flight deck temperature cannot be maintained with the CONT CAB zone temperature selector in the normal range, position the CONT CAB zone temperature selector to OFF.

**21-21 Flight Deck Temperature Control System****21-21-02 Primary / Back-up Modes****21-21-02-02 -800 (Both Inoperative)****21-21-02-02B Trim Air Modulating Valve Deactivated CLOSED**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided associated Trim Air Modulating Valve is deactivated CLOSED.

-----

**MAINTENANCE (M)**

For -800:

Deactivate trim air modulating valve(s) (locked closed) (AMM 21-00-00/901):

For All Models:

1. Position the CONT CAB Temperature Selector to OFF.
2. Locate the flight deck trim air modulating valve in the left ECS bay.
3. Turn the manual override until the visual position indicator shows the full closed position.
4. Disconnect and stow the electrical connector from the valve.
5. Position the CONT CAB Temperature Selector to the normal temperature range.

**OPERATIONS (O)**

Use normal procedures to operate the temperature selectors.

If a comfortable flight deck temperature cannot be maintained with the CONT CAB zone temperature selector in the normal range, position the CONT CAB zone temperature selector to OFF.

With the flight deck trim air modulating valve deactivated, the associated CONT CAB ZONE TEMP light will illuminate during Master Caution recall and will extinguish when Master Caution is reset.

**21-26 Ground Preconditioned Air Connection Check Valve**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative closed.

- - - - -

**21-26 Ground Preconditioned Air Connection Check Valve****21-26-02 Digital Control System (-800)****21-26-02-03 -800**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. Flight is conducted in an unpressurized configuration.
- b. Procedures are established and used to ensure lower forward 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.
- c. Outflow valve is positioned to 25% open position.
- d. Recirculation fan(s) operate normally.

NOTE: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

- - - - -

**MAINTENANCE (M)**

1. Use MEL item 21-10-02-03 (M) procedure.
2. Advise MOC/FDC/OCC that performance is affected.

**OPERATIONS (O)**

Use MEL item 21-10-02-03 (O) procedure.

---

**21-27                    Electrical/Electronic Equipment Cooling Blowers**  
**21-27-03                CDS (-800)**


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Interval	Installed	Required	Procedure
<b>B</b>	<b>4</b>	<b>3</b>	<b>(M)</b>

One fan may be inoperative provided:

- a. All remaining fans are verified to operate normally.
  - b. Both low flow detectors are verified to operate normally.
- 

### **MAINTENANCE (M)**

Verify the remaining fans and the two low flow detectors operate normally (AMM21-00-00/901):

1. Make sure the low-flow detector and the remaining fan operate normally for the supply system or exhaust system (with the inoperative fan):
  - A. Position the associated EQUIP COOLING SUPPLY or EXHAUST switch to the operative fan position (NORM or ALTN).
  - B. Make sure the associated equipment cooling supply or exhaust OFF light extinguishes.
2. Verify the fans and the low-flow detector of the supply or exhaust system with the two fans operative, operate normally:
  - A. Do these steps when the supply system has both fans operative:
    - 1) Position the EQUIP COOLING SUPPLY switch to NORM.
    - 2) Open P6-4 panel circuit breaker EQPT COOLING SUPPLY FAN CONT-NORMAL.
    - 3) Make sure the equipment cooling supply OFF light illuminates.
    - 4) Position the EQUIP COOLING SUPPLY switch to ALTN.
    - 5) Make sure the equipment cooling supply OFF light extinguishes.
    - 6) Open P6-4 panel circuit breaker EQPT COOLING SUPPLY FAN CONTROL-ALTN.
    - 7) Make sure the equipment cooling supply OFF light illuminates.
    - 8) Close the two P6-4 panel circuit breakers.
    - 9) Make sure that the equipment cooling supply OFF light extinguishes.
    - 10) Position the EQUIP COOLING SUPPLY switch to NORM.
  - B. Do these steps when the exhaust system has both fans operative:
    - 1) Position the EQUIP COOLING EXHAUST switch to NORM.
    - 2) Open P6-4 panel circuit breaker EQPT COOLING EXH FAN CONT-NORMAL.
    - 3) Make sure the equipment cooling exhaust OFF light illuminates.
    - 4) Position the EQUIP COOLING EXHAUST switch to ALTN.
    - 5) Make sure the equipment cooling exhaust OFF light extinguishes.
    - 6) Open P6-4 panel circuit breaker EQPT COOLING EXH FAN

**CONTROL-ALTN.**

- 7) Make sure the equipment cooling exhaust OFF light illuminates.
- 8) Close the two P6-4 panel circuit breakers.
- 9) Make sure that the equipment cooling exhaust OFF light extinguishes.
- 10) Position the EQUIP COOLING EXHAUST switch to NORM.

**OPERATIONS NOTE**

1. If the equipment cooling supply OFF light illuminates during flight (both supply fans inoperative), continued flight beyond 30 minutes can result in loss of the Captain's Display Units (DU) and the lower center DU.
2. If the equipment cooling exhaust OFF light illuminates during flight (both exhaust fans inoperative), continued flight beyond 30 minutes can result in loss of the First Officer's Display Units (DU) and the upper center DU.

- 21-31            Recirculation Fan(s)**  
**21-31-04       -800**  
**21-31-04A      Left Recirc Fan Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

Left fan may be inoperative provided left pack is operating when OAT is above 100 degrees F (38 degrees C).

#### **MAINTENANCE NOTE**

Position the L RECIRC FAN switch to OFF.

- 21-31            Recirculation Fan(s)**  
**21-31-04       -800**  
**21-31-04B      Right Recirc Fan Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

Right fan may be inoperative provided:

- Left pack is operating when OAT is above 100 degrees F (38 degrees C).
- Flight is conducted pressurized.

#### **MAINTENANCE NOTE**

Position the R RECIRC FAN switch to OFF.

- 21-31            Recirculation Fan(s)**  
**21-31-04       -800**  
**21-31-04C      Both Fans Inoperative**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided:

- OAT remains below 100 degrees F (38 degrees C).
- Flight is conducted pressurized.

#### **MAINTENANCE NOTE**

Position associated RECIRC FAN switch(es) to OFF.

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**21-32      Pack Temperature Control System(s) (Electronic Pack/ Zone Controller) (-800)**

Interval	Installed	Required	Procedure
C	4	2	(O)

One system (primary or standby) on each pack may be inoperative provided remaining system on associated pack is checked to operate normally.

-----

**OPERATIONS (O)**

For initial dispatch, do these steps to check normal operation of one of the temperature control systems (Primary or Standby):

1. To recall, push the left or right system annunciator panel on the glareshield and observe that these lights illuminate:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK light.
2. To reset, push a MASTER CAUTION light on the glareshield and observe that these lights extinguish:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK light.

**21-33 Pack Temperature Control Valves (-800)****21-33A Pack Temperature Control Valve(s) Inoperative Closed**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative in fully closed position provided associated Standby Pack Temperature Control Valve(s) is verified to operate normally.

**MAINTENANCE (M)**

Verify the defective Pack Temperature Control Valve (TCV) is in fully closed position to allow the associated pack to be used without restriction.

**OPERATIONS (O)**

For initial dispatch, check normal operation of the standby temperature control system for the associated pack.

1. To recall, push the left or right system annunciator panel on the glareshield and observe that these lights illuminate:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK light.
2. To reset, push a MASTER CAUTION light on the glareshield and observe that these lights extinguish:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK light.

**21-33 Pack Temperature Control Valves (-800)****21-33B Pack Temperature Control Valve Deactivated Closed**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided:

- a. Associated Temperature Control Valve (TCV) is deactivated closed.
- b. Associated Standby Pack Temperature Control Valve(s) is verified to operate normally.

**MAINTENANCE (M)**

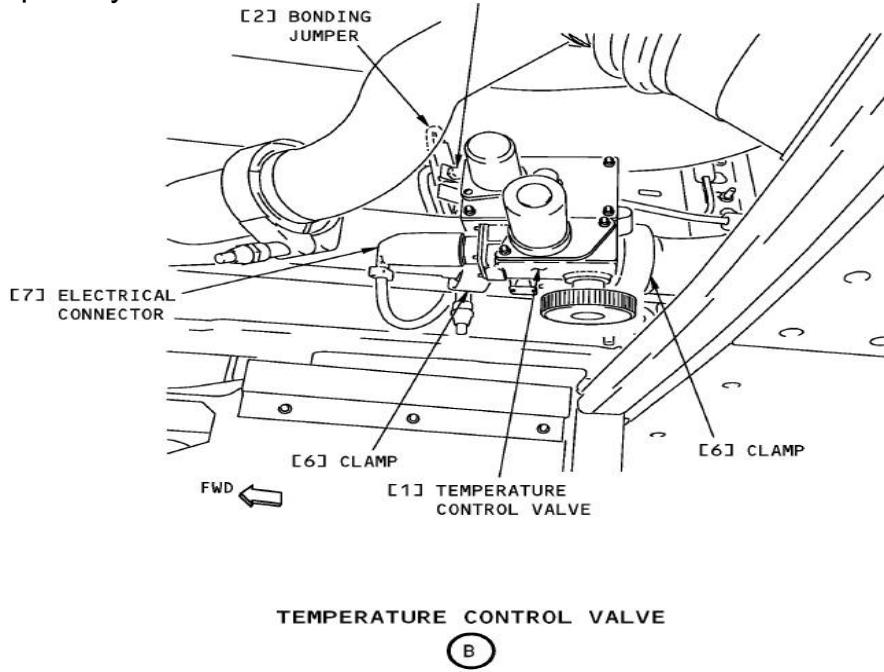
1. The Master Caution (MC) recall and reset are pushed to verify all associated lights illuminate and then extinguish.

2. Deactivate and lock the associated Pack Temperature Control Valve closed.

NOTE: The associated inoperative temperature control valve could be stuck in the open position. To help prevent excess hot air from entering into the

air distribution system resulting in a hot cabin temperature, the associated temperature control valve can be manually closed.

3. Disconnect and stow the electrical connector (Item 7 as per AMM Figure 401 (Sheet 2 of 2)/21-51-10-990-801 as illustrated below) from the associated Pack Temperature Control Valve.
4. Turn the manual override on the associated Pack Temperature Control Valve until the visual position indicator shows the full closed position.
5. Appropriately record in ATL and AMOS.



TEMPERATURE CONTROL VALVE  
 B

Temperature Control Valve Installation  
 Figure 401 (Sheet 2 of 2)/21-51-10-990-801

## OPERATIONS (O)

For initial dispatch, check normal operation of the standby temperature control system for the associated pack.

1. To recall, push the left or right system annunciator panel on the glareshield and observe that these lights illuminate:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK light.
2. To reset, push a MASTER CAUTION light on the glareshield and observe that these lights extinguish:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK light.

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**21-33            Pack Temperature Control Valves (-800)**

**21-33C          Associated Pack Not Used**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided associated pack is considered inoperative.

-----

**MAINTENANCE (M)**

Use MEL item 21-01 (M) procedure for one or two packs inoperative, as applicable.

**OPERATIONS (O)**

Use MEL item 21-01 (O) procedure for one or two packs inoperative, as applicable.

**21-34 Standby Pack Temperature Control Valves (-800)**
**21-34A Pack Temperature Control Valve(s) Operate Normally**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided associated Pack Temperature Control Valve(s) is checked to operate normally.

-----

**OPERATIONS (O)**

For initial dispatch, check normal operation of the primary temperature control system for the associated pack.

1. To recall, push the left or right system annunciator panel on the glareshield and observe that these lights illuminate:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK.
2. To reset, push a MASTER CAUTION light on the glareshield and observe that these lights extinguish:
  - A. AIR COND
  - B. MASTER CAUTION
  - C. Associated PACK.

**21-34 Standby Pack Temperature Control Valves (-800)**
**21-34B Associated Pack Not Used**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided associated pack is not used.

-----

**MAINTENANCE (M)**

Use MEL item 21-01 (M) procedure for one or two packs inoperative, as applicable.

**OPERATIONS (O)**

Use MEL item 21-01 (O) procedure for one or two packs inoperative, as applicable

**21-35 Trim Air Pressure Regulating and Shutoff Valve  
21-35-01 -800**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative secured closed.

-----

**MAINTENANCE (M)****For -800:**

Secure the trim air pressure regulating and shutoff valve closed (AMM21-00-00/901).

**For All Models:**

1. Position the TRIM AIR switch to OFF.
2. Get access to the trim air pressure regulating and shutoff valve in the right ECS bay (next to the keel beam, inboard of the air cycle machine).
3. Turn the manual override hex on the shutoff valve until the visual position indicator shows the full closed position.
4. Open and collar P6-4 panel circuit breaker AIR CONDITIONING TRIM AIR PRESS.

**21-36 Trim Air Modulating Valves**
**21-36-01 -800**
**21-36-01A Inoperative Closed**

Interval	Installed	Required	Procedure
C	3	0	(M) (O)

May be inoperative closed.

**MAINTENANCE (M)**
For -800:

Secure the trim air modulating valve(s) closed (AMM 21-00-00/901).

For All Models:

1. Position the associated CONT CAB, FWD CAB or AFT CAB temperature selector to OFF.
2. Disconnect and stow the electrical connector from the inoperative valve.  
NOTE: The valve for the flight deck is in the left ECS bay. The valves for the forward and aft passenger cabin are in the right ECS bay.
3. Turn the manual override on the associated Trim Air Modulating valve until the visual position indicator shows the full closed position.
4. Position the associated temperature selector back to the normal operating range.

**OPERATIONS (O)**

Use normal procedures to operate the temperature selectors.

With a trim air modulating valve closed, the associated CONT CAB, FWD CAB or AFT CAB ZONE TEMP light will illuminate during Master Caution recall and will extinguish when Master Caution is reset.

**21-36 Trim Air Modulating Valves**
**21-36-01 -800**
**21-36-01B Inoperative In Any Position**

Interval	Installed	Required	Procedure
C	3	0	(O)

May be inoperative in any position provided Trim Air Pressure Regulating and Shutoff Valve remains closed.

**OPERATIONS (O)**

1. Operate with TRIM AIR switch OFF.
2. Use normal procedures to operate the temperature selectors.

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**21-38 Outflow Valve Position Indicator**

Interval	Installed	Required	Procedure
C	1	0	(M) (O)

May be inoperative provided valve is verified to be operating normally.

**MAINTENANCE (M)**
**For -800:**

Check normal operation of the outflow valve actuators (AMM21-00-00/901):

1. Supply electrical power (AMM 24-22-00)
2. Make sure that these P6-4 panel circuit breakers are closed:
  - A. PRESSURIZATION CONTROL LCD LTG
  - B. PRESSURIZATION CONTROL AUTO 1
  - C. PRESSURIZATION CONTROL AUTO 2
  - D. PRESSURIZATION CONTROL MANUAL
  - E. PRESSURIZATION CONTROL IND
3. Verify visually that the outflow valve is in the fully opened position.
4. Operate Outflow Valve in Manual Mode:
  - A. Position the Pressurization Mode selector to MAN.
  - B. Make sure that the MANUAL light illuminates.
  - C. Hold the Outflow Valve switch in the CLOSE position for approximately 30 seconds.
  - D. Visually verify the outflow valve moves to the fully closed position.
  - E. Position the Pressurization Mode selector to AUTO.
  - F. Make sure that the MANUAL light extinguishes.
  - G. Visually verify that the outflow moved to the fully opened position.

**OPERATIONS (O)**

If procedures call for the outflow valve to be positioned in the full open or closed position, hold the Outflow Valve switch to OPEN or CLOSE for approximately 40 seconds.

**21-39 Trim Air Check Valves  
21-39-01 -800**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative provided associated valve is deactivated closed.

-----

**MAINTENANCE (M)****For -800:**

Configure inoperative valve in the closed position (AMM21-00-00/901):

**For All Models:**

1. Do one of the following:
  - A. Obtain Blank-Off Plate, Trim Air Check Valve (part number A21015-8).
  - B. Fabricate a blanking plate with the following specifications:
    - 1) Materials:
      - a. Titanium 6AL-4V per MIL-T-9046 Type 3 Comp C
      - b. Inconel 718 per AMS 5596.
      - c. 301 CRES per MIL-S-5059 ½, ¾, or Fullhard
    - 2) Dimensions:
      - a. Diameter – 3.00 (+0.10 or -0.00) inches.
      - b. Thickness – 0.040 inch.
  2. Supply electrical power to the airplane (AMM 24-22-00/201).

**WARNING: REMOVE THE PRESSURE FROM THE PNEUMATIC SYSTEM. PRESSURE IN THE PNEUMATIC SYSTEM CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.**

3. Remove the pressure from the pneumatic system (-800 per AMM 36-00-00/201).
4. Position these switches on the P5-10 Air Conditioning panel to OFF and attach DO-NO-OPERATE tags:
  - A. BLEED 1
  - B. BLEED 2
  - C. BLEED APU.
5. Gain access to the inoperative trim air check valve.
6. Modify the Ducting
  - A. Loosen clamp on forward side of the inoperative trim air check valve.
  - B. Move clamp forward on to duct.
  - C. Install the blanking plate between the duct assembly and the inoperative trim air check valve.

NOTE: Install on the downstream side of the inoperative trim air check valve.

  - D. Move clamp backward on to check valve.
  - E. Tighten the nut on the clamp to 55 pound-inches (6.2 newton-meters).

NOTE: The clamp must be evenly located on the valve and duct flanges.

## 7. Perform a Leakage Test:

- A. Remove the DO-NO-OPERATE tags from the BLEED 1, BLEED 2 and BLEED APU switches. Put the switches in their usual positions.
- B. Supply pneumatic power (-800 per AMM 36-00-00/201).
- C. Position the associated PACK switch to AUTO.
- D. Position the TRIM AIR switch to OFF.
- E. Check valve flange for leakage.
  - 1) Diffused leakage is acceptable.
  - 2) Jet blast leakage must be repaired by joint or clamp realignment.

## 8. Put the airplane back to its usual condition:

- A. Close the access panel(s).
- B. Remove pneumatic power (-800 per AMM 36-00-00/201).
- C. Remove electrical power (AMM 24-22-00/201).

**OPERATIONS NOTE**

A blanking plate installed on one of the two trim air check valves does not affect normal pack operation.

- 
- 21-40              Equipment Cooling Automatic Flow Control Valve / Overboard Exhaust Valve**  
**21-40-02          Digital Control System**  
**21-40-02-03       -800 (valve inop open, unpressurized flight)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative in open position provided:

- a. Flight is conducted in an unpressurized configuration.
- b. Procedures are established and used to ensure lower forward 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.
- c. Outflow valve is positioned to 25% open position.
- d. Recirculation fan(s) operate normally.

NOTE1:MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

NOTE2:Consider also MEL 21-40-02-05 for valve inop in Smoke position.

---

### **MAINTENANCE (M)**

1. Use MEL item 21-10-02-03 (M) procedure.
2. Advise MOC/FDC/OCC that performance is affected.

### **OPERATIONS (O)**

Use MEL item 21-10-02-03 (O) procedure.

- 
- 21-40              Equipment Cooling Automatic Flow Control Valve / Overboard Exhaust Valve**  
**21-40-02          Digital Control System**  
**21-40-02-05       -800 (valve inop in Smoke position, non-EDTO)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative provided:

- a. Actuator is verified to be in smoke position.
- b. Both packs operate normally.

NOTE: Consider also MEL 21-40-02-03 for valve inop open.

---

### **MAINTENANCE (M)**

Verify that the Overboard Exhaust valve is in the SMOKE position. If the valve has not failed in the SMOKE position, use this procedure to position and deactivate the valve in the SMOKE position (AMM 21-00-00/901):

1. Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU) (AMM 32-09-00).

2. Position one of the PACK switches to HIGH.

*For -800:*

3. Position the R RECIRC FAN to OFF.
4. After 10 seconds, open and collar P6-4 Panel circuit breaker A/C OVERBOARD EXH VALVE RECONFIG CONT.
5. Disconnect, cap and stow electrical connector D11880 on the Overboard Exhaust valve.
6. Verify that the valve is in the SMOKE position.
7. Close P6-4 Panel circuit breaker A/C OVERBOARD EXH VALVE RECONFIG CONT.

### **OPERATIONS (O)**

Both air conditioning packs are required to maintain pressurization when the valve is failed with actuator in the smoke position. Descent may be required if an air conditioning pack fails enroute.

**21-41      Door Area Heater Systems****21-41-02    Entry Door Area and Overwing Emergency Exit Hatch  
Area Heater Systems (-800)**

Interval	Installed	Required	Procedure
D	4	0	(M)

May be inoperative deactivated.

- - - - -

**MAINTENANCE (M)**

Deactivate the entry door area and overwing emergency exit hatch area heater systems (AMM 21-00-00/901):

1. To deactivate the inoperative forward entry door and overwing emergency exit hatch area heater systems, open and collar the FWD DOOR AREA HEATER (C1280) circuit breaker on the P91 Power Distribution Panel.  
NOTE: Opening circuit breaker C1280 deactivates both the forward entry door area heater and all overwing exit hatch heaters.
2. To deactivate the inoperative aft entry door area heater system, open and collar the AFT DOOR AREA HEATER (C1279) circuit breaker on the P91 Power Distribution Panel.

**21-42 Equipment Cooling Low Flow Detector Systems (-800)**

Interval	Installed	Required	Procedure
B	2	1	(M) (O)

One may be inoperative provided associated fans (supply or exhaust) are verified to operate normally.

-----

**MAINTENANCE (M)**

Verify associated fan operates normally (AMM 21-00-00/901).

1. Verify normal operation of the cooling system fans with the inoperative detector.
  - A. Supply system low flow detector inoperative
    - 1) Make sure the normal supply fan operates by feeling the selected fan motor for vibration.
    - 2) Select the alternate supply fan and repeat.
  - B. Exhaust system low flow detector inoperative
    - 1) Make sure the normal exhaust fan operates by feeling for air exiting the overboard exhaust vent at the bottom of the airplane near the centerline at STA 370.
    - 2) Select the alternate exhaust fan and repeat.
2. Confirm that the remaining detector system operates normally.
  - A. Supply Cooling System
    - 1) Open P6-4 panel circuit breaker EQUIPMENT COOLING - SUPPLY FAN - CONTROL - NORMAL.
    - 2) Make sure the equipment cooling supply OFF light illuminates.
    - 3) Position the EQUIP COOLING SUPPLY switch to ALTN.
    - 4) Make sure the equipment cooling supply OFF light extinguishes.
    - 5) Open P6-4 panel circuit breaker EQUIPMENT COOLING - SUPPLY FAN - CONTROL - ALTN.
    - 6) Make sure the equipment cooling supply OFF light illuminates.
    - 7) Close the two P6-4 panel circuit breakers.
    - 8) Make sure the equipment cooling supply OFF light extinguishes.
    - 9) Position the EQUIP COOLING SUPPLY switch to NORM.
  - B. Exhaust Cooling System
    - 1) Open P6-4 panel circuit breaker EQUIPMENT COOLING - EXHAUST FAN - CONTROL - NORMAL.
    - 2) Make sure the equipment cooling exhaust OFF light illuminates.
    - 3) Position the EQUIP COOLING EXHAUST switch to ALTN.
    - 4) Make sure the equipment cooling exhaust OFF light extinguishes.
    - 5) Open P6-4 panel circuit breaker EQUIPMENT COOLING -

**EXHAUST FAN - CONTROL - ALTN.**

- 6) Make sure the equipment cooling exhaust OFF light illuminates.
- 7) Close the two P6-4 panel circuit breakers.
- 8) Make sure the equipment cooling exhaust OFF light extinguishes.
- 9) Position the EQUIP COOLING EXHAUST switch to NORM.

To prevent the equipment cooling ground crew call horn from sounding on the ground with a low flow detector system inoperative, the associated Equipment Cooling Low Flow Detect Exhaust/Supply circuit breaker on the P18-3 panel may be opened and collared. Refer to MEL Item 34-35 when dispatching in this configuration.

**OPERATIONS (O)**

If both inboard and outboard display units on one side fail, try to restore displays by selecting the other cooling fan in the system with the inoperative detector. The captain's displays are cooled by the supply fans. The first officer's displays are cooled by the exhaust fans.

**21-43 Equipment Cooling Air Filter (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M)

Equipment cooling system may be operated with filter removed.

-----

**MAINTENANCE (M)**

The equipment cooling system may be operated with the air filter removed (AMM 21-00-00/901).

1. Remove electrical power from the airplane.
2. Remove the equipment cooling air filter (AMM 21-27-01).
3. Re-install the forward right bulkhead liner.

---

**21-44            Fan Bypass Check Valves (-800)**  
**21-44A          Airport OAT Below 80 Deg F (27 Deg C)**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative open/missing provided airport ambient temperature remains below 80 degrees F (27 degrees C).

---

**21-44            Fan Bypass Check Valves (-800)**  
**21-44B          Associated Pack Inoperative**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative open/missing for an associated inoperative pack.

---

**21-44            Fan Bypass Check Valves (-800)**  
**21-44C          One Inoperative, Opposite Pack Operates Normally**

Interval	Installed	Required	Procedure
D	2	1	

One may be inoperative open/missing provided pack associated with remaining fan bypass check valve operates normally.

---

**21-49      Return Air Grille (-800)**

Interval	Installed	Required	Procedure
C	92	0	(M)

One may be broken or missing provided:

- a. Broken or missing grille is located within a designated area as defined by Boeing.
- b. Grille is removed and replaced with a blanking plate.

**MAINTENANCE (M)**

Evaluate to what extent minor damage, cracks and cosmetic conditions affect return air grilles in performing their intended function.

Only ONE return air grille may be blocked at any one time. Grille must be replaced by a panel that completely blocks the area. Some locations may not have return air grilles due to the placement of doors or monuments. For a damaged return air grille not located in one of the listed locations, it is acceptable to replace the damaged return air grille with one in the allowed location if the two return air grill assemblies are the same part number.

The following are designated locations within which a return air grille may be broken or missing:

For -800:

Station 887-907

---

**21-50 Flight Deck Foot and Shoulder Heater Systems**

---

Interval	Installed	Required	Procedure
C	4	0	

May be inoperative provided flight deck temperature is acceptable to flight crew.

---

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**22-01            Autopilot Systems**  
**22-01A        One Autopilot System Required**

Interval	Installed	Required	Procedure
C	2	1	(M)

May be inoperative provided approach minimums do not require its use.

NOTE 1: Every effort should be made to repair autopilot early in the repair interval, as provided by this relief statement, in consideration of such factors as weather, traffic density, and effect of other inoperative systems.

NOTE 2: Any mode which functions normally may be used.

NOTE 3: Both autopilots must be operative ex-KUL for RNP 10, RNP 4, RNP 2 and Autoland operations.

NOTE 4: For RNP AR operations,

- i. One Autopilot system and two Flight Director systems (see MEL 34-12) must be operative for RNP0.15 (or greater) operations.
- ii. Two Autopilot systems and two Flight Director systems (see MEL 34-12) must be operative for less than RNP0.15 operations.

-----  
 NOTE 1: Failures in one or both FCC's could affect these systems: Mach Trim (see MEL Item 22-05), Control Surface Position Indicating system (see MEL item 27-18), Flight Director (see MEL Item 34-12), and Altitude Alerting (see MEL item 34-25).

NOTE 2: Failure in FCC A may affect the autothrottles (MEL item 22-4) on airplanes without an autothrottle computer.

**MAINTENANCE (M)**

For RNP 10, RNP 4, RNP 2 and Autoland operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP 10, RNP 4, RNP 2 and Autoland operations."

**22-01      Autopilot Systems**  
**22-01B    All Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M) [E]

Except ex-KUL, both Autopilot systems may be inoperative provided:

- a. Approach minimums do not require their use.
- b. Enroute operations do not require autopilot use.
- c. Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.
- d. Aircraft is not operated for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations.

NOTE 1: Every effort should be made to repair autopilot early in the repair interval, as provided by this relief statement, in consideration of such factors as weather, traffic density, and effect of other inoperative systems.

NOTE 2: Any mode which functions normally may be used provided this does not conflict with any other active MEL Item. If CWS is inoperative, do not use other modes (pitch or roll).

NOTE 3: For RNP AR operations,

- i. One Autopilot system and two Flight Director systems (see MEL 34-12) must be operative for RNP0.15 (or greater) operations
- ii. Two Autopilot systems and two Flight Director systems (see MEL 34-12) must be operative for less than RNP 0.15 operations.

NOTE 1: Failures in one or both FCC's could affect these systems: Mach Trim (see MEL Item 22-05), Control Surface Position Indicating system (see MEL item 27-18), Flight Director (see MEL Item 34-12), and Altitude Alerting (see MEL item 34-25).

NOTE 2: Failure in FCC A may affect the autothrottles (MEL item 22-4) on airplanes without an autothrottle computer.

### **MAINTENANCE (M)**

For EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations."

**22-01 Autopilot Systems**
**22-01-01 Control Wheel Autopilot Disconnect Switches**
**22-01-01-02 -800**
**22-01-01-02A One Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided:

- a. Mode Control Panel autopilot DISENGAGE bar operates normally.
  - b. Autopilot is not used below 1500 feet AGL.
  - c. Approach minimums do not require use of autopilot.
- 

**22-01 Autopilot Systems**
**22-01-01 Control Wheel Autopilot Disconnect Switches**
**22-01-01-02 -800**
**22-01-01-02B Both Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M) [E]

Except ex-KUL both may be inoperative provided:

- a. Autopilots are not used.
- b. Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.
- c. Aircraft is not operated for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations (where autopilot is required for these operations).

NOTE: Operational requirements in MEL 22-01 must be complied. The note in MEL 22-01B, which allows any functional autopilot mode to be used, is not applicable.

**MAINTENANCE (M)**

For EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations. DO NOT USE AUTOPILOT"

**22-01 Autopilot Systems**
**22-01-02 Autopilot DISENGAGE Bar**

Interval	Installed	Required	Procedure
C	1	0	

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---

**22-02 Autopilot Disengaged Warning System**
**22-02-01 Lights**
**22-02-01A One Inoperative, Aural Warning Operative**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided autopilot disengage aural warning system operates normally.

---

**22-02 Autopilot Disengaged Warning System**
**22-02-01 Lights**
**22-02-01B One Inoperative, Aural Warning Inoperative or Not Installed**

Interval	Installed	Required	Procedure
B	2	1	(M) [E]

One may be inoperative provided:

- Autopilots are not used.
  - Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.
  - Aircraft is not operated for EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR, and Autoland operations (where autopilot is required for these operations).
- 

NOTE: Operational requirements in MEL 22-01 must be complied. The note in MEL 22-01B, which allows any functional autopilot mode to be used, is not applicable.

### **MAINTENANCE (M)**

For EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

- Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
  - In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR and Autoland operations. DO NOT USE AUTOPILOT"
- 

**22-02 Autopilot Disengaged Warning System**
**22-02-01 Lights**
**22-02-01C Both Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M) [E]

Both may be inoperative provided:

- Autopilots are not used.
- Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.

- c. Aircraft is not operated for EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR, and Autoland operations (where autopilot is required for these operations).
- - - - -

NOTE: Operational requirements in MEL 22-01 must be complied. The note in MEL 22-01B, which allows any functional autopilot mode to be used, is not applicable.

### **MAINTENANCE (M)**

For EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR and Autoland operations. DO NOT USE AUTOPILOT"

---

#### **22-02 Autopilot Disengaged Warning System**

##### **22-02-02 Aural Warning**

Interval	Installed	Required	Procedure
B	1	0	

May be inoperative provided:

- a. Autopilots are not used.
  - b. Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.
  - c. Aircraft is not operated for EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR, and Autoland operations (where autopilot is required for these operations).
- - - - -

NOTE: Operational requirements in MEL 22-01 must be complied. The note in MEL 22-01B, which allows any functional autopilot mode to be used, is not applicable.

### **MAINTENANCE (M)**

For EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP APCH LNAV/VNAV, RNP AR and Autoland operations. DO NOT USE AUTOPILOT"

**22-03 Yaw Damper  
22-03-02 -800**

Interval	Installed	Required	Procedure
C	1	0	(M) (O)

May be inoperative provided

- a. Yaw damper switch remains OFF.
  - b. Sector to be operated is less than 1 hour.
- 

**MAINTENANCE (M)**

1. Advise MOC, FDC and OCC on sector time restriction.
2. Position the YAW DAMPER switch to OFF.

**OPERATIONS (O)**

1. Avoid areas of predicted moderate or severe turbulence.
2. Reduce airspeed and/or descend to a lower altitude if turbulence is encountered and passenger comfort is affected.
3. Do not exceed flaps 30.

**22-03 Yaw Damper  
22-03-03 Yaw Damper Indicator**

Interval	Installed	Required	Procedure
C	1	0	

-----

**22-04 Autothrottle System**

Interval	Installed	Required	Procedure
B	1	0	[P] (M)

May be inoperative provided approach minimums do not require its use.

**MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

**MAINTENANCE NOTE**

This procedure can be used to deactivate the autothrottle system (applicable only to airplanes with a separate Smiths autothrottle installation)

Note 1: B737NG have either a separate Smith autothrottle computer or the autothrottle function is in the flight control computer A (FCC A).

Note 2: To determine the type of autothrottle installed on B737NG, refer to AMM SDS 22-31-00.

*For -800 with autothrottle function built-in the flight control computer A (FCC A):*

Refer to AMM 22-00-00/901.

*For -800 with separate Smith autothrottle computer:*

Use the table below to reconfigure the M1994 AUTOTHROTTLE Dip

Switch positions (E/E Bay/E1-1 Shelf left side) to allow only the ground

BITE to function.

A. No winglets are installed:

SWITCH NO.	DIP SWITCH POSITION				
	737-600	737-700	737-700C	737-800	737-900
2	OFF (0)	OFF (0)	OFF (0)	OFF (0)	OFF (0)
3	OFF (0)	OFF (0)	OFF (0)	OFF (0)	OFF (0)
12	OFF (0)	OFF (0)	ON (1)	ON (1)	ON (1)

B. Winglets are installed:

SWITCH NO.	DIP SWITCH POSITION		
	737-700	737-800	737-900
2	OFF (0)	OFF (0)	OFF (0)
3	OFF (0)	OFF (0)	OFF (0)
12	ON (1)	OFF (0)	OFF (0)

NOTE: (Deleted)

**22-05            Mach Trim Systems**  
**22-05-00        Both inoperative**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative provided:

- a. AFM limitations are observed.
  - b. Mach trim actuator is verified to be in null/uncommanded elevator position.
- 

**MAINTENANCE (M)**

1. Advise MOC/FDC/OCC that performance is affected.

For -800:

2. Verify that the elevator trailing edge is in the correct position (AMM 22-00-00/901).

NOTE 1:A mach trim actuator and mach trim system are required to position the elevator trailing edge if it is out of alignment. An actuator or accessory box that does not operate must be replaced.

NOTE 2:Dispatch with both mach trim systems inoperative is not allowed if the elevator trailing edge is not aligned with the index mark on the fuselage.

- A. Supply electrical power
- B. Supply hydraulic power.
- C. Position the flaps to UP.
- D. Put the stabilizer to 4 units of trim.
- E. Move the control column to put the elevators in the detent position.
- F. Visually check that the elevator trailing edge is aligned within 0.06 inches (1.5 mm) of the index mark on the fuselage.
- G. Open and collar the MACH TRIM AC and DC circuit breakers (P6-2 / P18-1 Panels).

**OPERATIONS (O)**

For -800:

Do not exceed 280 KIAS/ .82M.

NOTE: With both mach trim systems deactivated, fail operational equipped airplanes are affected. NO AUTOLAND will be annunciated. The airplane must also be dispatched using MEL item 22-20.

**22-05      Mach Trim Systems**  
**22-05-01    One inoperative**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative deactivated provided:

- Remaining Mach trim system is verified to operate normally.
- Mach trim fail light operates normally.

**MAINTENANCE (M)****For -800:**

Deactivate the inoperative mach trim system and verify the remaining mach trim system is operating normally (AMM 22-00-00/901).

**For All Models:**

- Open and collar the associated MACH TRIM AC and MACH TRIM DC circuit breakers on the P18-1 panel (channel A) or P6-2 panel (channel B), as appropriate.
- Perform the DFCS BITE library test No. 33, Mach Trim, for the remaining system (channel A or channel B), and verify that the test passes.

**For -800:****OPERATION NOTE**

With one mach trim system deactivated, fail operational equipped airplanes are affected. NO AUTOLAND will be annunciated. The airplane must also be dispatched using MEL item 22-20.

**22-08            Autothrottle Disengage Lights**
**22-08A          One Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative when autothrottle is used provided approach minimums do not require their use.

**OPERATIONS NOTE**

The autothrottle can be used with one Autothrottle (A/T) Disengage light inoperative except when needed for landing minimums.

**22-08            Autothrottle Disengage Lights**
**22-08B          Both Inoperative**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided autothrottle is not used.

**OPERATIONS NOTE**

Do not use the autothrottle with both Autothrottle (A/T) Disengage lights inoperative.

**22-09 [DELETED] Speed Trim Fail Light System**

Interval	Installed	Required	Procedure

DELETED IN MAB REV NO: 08.

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BOEING B737-800  
MINIMUM EQUIPMENT LIST

Section 2: ATA 22  
Auto Flight

**22-10 [DELETED] Speed Trim System (-800)**

Interval	Installed	Required	Procedure

DELETED IN MAB REV NO: 08.

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**22-11 STAB OUT OF TRIM Light**

Interval	Installed	Required	Procedure
B	1	0	(M) (O) [E]

May be inoperative provided:

- a. Autopilots are not used.
  - b. Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.
  - c. Aircraft is not operated for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations.
- - - - -

**MAINTENANCE (M)**

For EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations. DO NOT USE AUTOPILOT"

**OPERATIONS (O)**

Do not use autopilot. Refer to MEL item 22-01.

**22-14 Mode Control Panel Selectors****22-14-01 V/S Selector (DOWN, UP)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided procedures do not require its use.

-----

**22-14 Mode Control Panel Selectors****22-14-02 Bank Angle Selector (10, 15, 20, 25, 30)**

Interval	Installed	Required	Procedure
C	1	0	

-----

**22-15 Mode Control Panel Switches / Paddles**  
**22-15-01 A/P CWS Engage Switches**

Interval	Installed	Required	Procedure
C	2	0	

**22-15 Mode Control Panel Switches / Paddles**  
**22-15-02 A/P CMD Engage Switches**  
**22-15-02A One Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

May be inoperative provided approach minimums do not require its use.

**22-15 Mode Control Panel Switches / Paddles**  
**22-15-02 A/P CMD Engage Switches**  
**22-15-02B Both Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M) (O) [E]

May be inoperative provided:

- a. Autopilots are not used.
- b. Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.
- c. Aircraft is not operated for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV, and Autoland operations.

**MAINTENANCE (M)**

For EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations. DO NOT USE AUTOPILOT"

**OPERATIONS (O)**

Operational requirements in MEL 22-01 must be complied. The note in MEL 22-01B, which allows any functional autopilot mode to be used, is not applicable.

- 
- 22-15 Mode Control Panel Switches / Paddles**  
**22-15-03 Autothrottle Arm Switch**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided approach minimums do not require autothrottle use.

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**MAINTENANCE NOTE**

The autothrottle system can be deactivated per MEL Item 22-04 Maintenance Note.

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- 22-15 Mode Control Panel Switches / Paddles**  
**22-15-04 A/T SPEED Switch**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided approach minimums do not require autothrottle use.

---

- 22-15 Mode Control Panel Switches / Paddles**  
**22-15-05 F/D Switches**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided approach minimums do not require flight director use.

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- 22-15 Mode Control Panel Switches / Paddles**  
**22-15-06 IAS/MACH Change Over Switch**

Interval	Installed	Required	Procedure
C	1	0	

- 
- 22-15 Mode Control Panel Switches / Paddles**  
**22-15-07 APP Switch**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided approach minimums do not require autopilot or flight director use.

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- 
- 22-15 Mode Control Panel Switches / Paddles**  
**22-15-08 EPR/N1, LNAV, VNAV, LVL CHG, V/S, HDG SEL, ALT HOLD and VOR/LOC Switches**

Interval	Installed	Required	Procedure
C	11	0	

May be inoperative provided enroute operations do not require their use.

NOTE: ALT HOLD capability is required for RVSM operations. Refer to OPERATIONS NOTE for clarification on ALT HOLD capability.

- - - - -

#### **OPERATIONS NOTE**

For RVSM enroute operations, any one of the following autopilot modes will provide acceptable altitude hold capability:

1. Altitude Hold (ALT HOLD)
2. Vertical Navigation (V NAV) with FMC flight plan.

- 
- 22-15 Mode Control Panel Switches / Paddles**  
**22-15-09 SPD INTV, PDC and ALT INTV Switches**

Interval	Installed	Required	Procedure
C	3	0	

**22-16 Mode Control Panel Windows**
**22-16-01 MOVED [Vertical Speed (VERT SPEED) (-800)]**

Interval	Installed	Required	Procedure

Moved to MEL 22-16-02-03 and/or 22-16-02-04 as appropriate.

**22-16 Mode Control Panel Windows**
**22-16-02 (EFIS/PFD/ND)**

(Includes STC ST03355AT)

**22-16-02-01 Airspeed (IAS/MACH)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative and associated selector used provided selected airspeed indications operate normally.

**22-16 Mode Control Panel Windows**
**22-16-02 (EFIS/PFD/ND)**

(Includes STC ST03355AT)

**22-16-02-02 Heading (HEADING)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative and associated selector used provided selected heading indications operate normally.

**22-16 Mode Control Panel Windows**
**22-16-02 (EFIS/PFD/ND)**

(Includes STC ST03355AT)

**22-16-02-03 Vertical Speed (VERT SPEED) (-800)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided procedures do not require its use.

NOTE: For -800 only, MEL 22-16-02-04 can be used as alternative to this item.

- 
- 22-16 Mode Control Panel Windows**  
**22-16-02 (EFIS/PFD/ND)**  
**(Includes STC ST03355AT)**  
**22-16-02-04 Vertical Speed (VERT SPEED) (-800)**

Interval	Installed	Required	Procedure
C	1	0	

For -800 only, may be inoperative and associated selector used provided selected vertical speed indications operate normally.

NOTE: MEL 22-16-02-03 can be used as alternative to this item.

- - - - -

- 
- 22-16 Mode Control Panel Windows**  
**22-16-02 (EFIS/PFD/ND)**  
**(Includes STC ST03355AT)**  
**22-16-02-05 Altitude (ALTITUDE) (-800)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative and associated selector used provided selected altitude indications operate normally.

- - - - -

- 
- 22-16 Mode Control Panel Windows**  
**22-16-02 (EFIS/PFD/ND)**  
**(Includes STC ST03355AT)**  
**22-16-02-06 Course (COURSE)**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative and associated selector used provided selected course indications operate normally.

- - - - -



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**22-16 Mode Control Panel Windows**

**22-16-02 (EFIS/PFD/ND)**

**(Includes STC ST03355AT)**

**22-16-02-07 Window Lighting**

Interval	Installed	Required	Procedure
B	1	0	

May be inoperative provided:

- a. Selected airspeed indications operate normally.
  - b. Selected heading indications operate normally.
  - c. Selected vertical speed indications operate normally.
  - d. Selected altitude indications operate normally.
  - e. Selected course indications operate normally.
-

---

**22-17            Takeoff/Go-Around (TO/GA) Switches**  
**22-17A        One Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided approach minimum do not require its use.

---

---

**22-17            Takeoff/Go-Around (TO/GA) Switches**  
**22-17B        Both Inoperative**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided:

- a. Both thrust levers are operated manually for takeoff.
- b. Autopilot and Flight Director are not used below Minimum Descent Altitude or 500 feet, whichever is higher.

NOTE: Flight director go-around and windshear guidance are not available with both TO/GA switches inoperative.

---

- 
- 22-18 Mode Control Panel Switch Lights**  
**22-18-01 Autopilot Engage Switch Lights**  
**22-18-01-01 CWS**

Interval	Installed	Required	Procedure
C	2	0	

---

- 22-18 Mode Control Panel Switch Lights**  
**22-18-01 Autopilot Engage Switch Lights**  
**22-18-01-02 CMD**  
**22-18-01-02A One Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

---

- 22-18 Mode Control Panel Switch Lights**  
**22-18-01 Autopilot Engage Switch Lights**  
**22-18-01-02 CMD**  
**22-18-01-02B Both Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M) (O) [E]

May be inoperative provided:

- a. Autopilots are not used.
  - b. Flight segments are limited to a maximum of two sectors per set of flight crews, each sector not exceeding two hours.
  - c. Aircraft is not operated for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations.
- 

### **MAINTENANCE (M)**

For EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations are not allowed, and there are sector/flight duration/flight crew restrictions:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
  2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations. DO NOT USE AUTOPILOT"
- 

### **OPERATIONS (O)**

Operational requirements in MEL 22-01 must be complied. The note in MEL 22-01B, which allows any functional autopilot mode to be used, is not applicable.

---

**22-18 Mode Control Panel Switch Lights**  
**22-18-02 Mode Selector Switch Lights**

Interval	Installed	Required	Procedure
C	1	0	

---

**22-18 Mode Control Panel Switch Lights**  
**22-18-03 A/T ARM Switch Light**

Interval	Installed	Required	Procedure
C	1	0	

---



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**22-19 Thrust Mode Annunciator/Thrust Mode Display (-800)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided thrust mode limits are observed.

-----

---

**22-20      Automatic Landing System**  
**22-20-01    Fail Passive**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided approach minimums do not require its use.

---

**22-20      Automatic Landing System**  
**22-20-03    AUTOLAND Light**  
**22-20-03A   Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided alternate procedures are established and used.

---

**OPERATIONS (O)**

Each operator must establish alternate procedures to be used when dispatching with one or both AUTOLAND lights inoperative.

---

**22-20      Automatic Landing System**  
**22-20-03    AUTOLAND Light**  
**22-20-03B   Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	2	0	

May be inoperative provided procedures do not require its use.

---

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Intentionally Blank

- 23-01 Flight Deck Speakers**  
**23-01-01 Airplanes with Audio Accessory Unit (AAU)**  
**23-01-01A TCAS, GPWS Aural Alert Voices Considered Inoperative**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided:

- a. Headset earphones or headphones associated with inoperative speaker(s) are installed and operate normally.
- b. TCAS audio is considered inoperative.
- c. TAWS (GPWS) advisory callouts are considered inoperative.

-----  
**NOTE:** The airplane must be also dispatched using **MEL** 34-26 (GPWS advisory callouts) and **MEL** 34-40 (TCAS audio)

#### **MAINTENANCE NOTE**

Some 737 airplanes are equipped with a switch on the Remote Electronics Unit (REU) which activates muting of the aural warning signal in the headset earphones or headphones. With this switch placed in the vertical position, muting will be turned off.

Some 737 airplanes with a REU have a grounded Pin F15 (on the A section of the REU rear connector). With this pin grounded, the switch on the front of the REU will not turn the muting off.

- 23-01 Flight Deck Speakers**  
**23-01-01 Airplanes with Audio Accessory Unit (AAU)**  
**23-01-01B TCAS, GPWS Aural Alert Voices Operate Normally**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided:

- a. Procedures do not require its use.
- b. Headset earphones or headphones associated with inoperative speaker(s) are installed and operate normally.
- c. Aural alert voices, TCAS, TAWS (GWPS) are verified to operate normally.

#### **MAINTENANCE NOTE**

Some 737 airplanes are equipped with a switch on the Remote Electronics Unit (REU) which activates muting of the aural warning signal in the headset earphones or headphones. With this switch placed in the vertical position, muting will be turned off.

Some 737 airplanes with a REU have a grounded Pin F15 (on the A section of the REU rear connector). With this pin grounded, the switch on the front of the REU will not turn the muting off.

**OPERATION (O)**

Verify TCAS and GPWS aural alerts operate normally.

1. Perform TCAS Supplementary Procedure SP.11.1. An aural annunciation at the completion of the test is heard
2. Perform GPWS Supplementary Procedure SP.15.1. GPWS Aural alerts are heard.

**23-01 Flight Deck Speakers****23-01-02 Airplanes with Remote Electronics Unit (REU)****23-01-02A TCAS, GPWS, Aural Alert Voices and Altitude Alert Tone  
Considered Inoperative**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided:

- a. Headset earphones or headphones associated with inoperative speaker(s) are installed and operate normally.
- b. TCAS audio is considered inoperative.
- c. TAWS (GPWS) advisory callouts are considered inoperative.
- d. Altitude alert tone is considered inoperative.

NOTE: The airplane must also be dispatched using MEL 34-26 (GPWS advisory callouts), MEL 34-40 (TCAS audio) and MEL 34-25 (Altitude Alerting System - Aural Alert).

**MAINTENANCE NOTE**

Some 737 airplanes are equipped with a switch on the Remote Electronics Unit (REU) which activates muting of the aural warning signal in the headset earphones or headphones. With this switch placed in the vertical position, muting will be turned off.

Some 737 airplanes with a REU have a grounded Pin F15 (on the A section of the REU rear connector). With this pin grounded, the switch on the front of the REU will not turn the muting off.

**23-01 Flight Deck Speaker System****23-01-02 Airplanes with Remote Electronics Unit (REU)****23-01-02B TCAS, GPWS Aural Alert Voices and Altitude Alert Tone  
Operate Normally**

Interval	Installed	Required	Procedure
C	2	0	(M)(O)

May be inoperative provided:

- a. Procedures do not require its use.
- b. Headset earphones or headphones associated with inoperative speaker(s) are installed and operate normally.



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- c. Aural alert voices, TCAS, TAWS (GPWS), Altitude Alert are verified to operate normally.
- 

## **MAINTENANCE**

NOTE 1: Some 737 airplanes are equipped with a switch on the Remote Electronics Unit (REU) which activates muting of the aural warning signal in the headset earphones or headphones. With this switch placed in the vertical position, muting will be turned off.

NOTE 2: Some 737 airplanes with a REU have a grounded Pin F15 (on the A section of the REU rear connector). With this pin grounded, the switch on the front of the REU will not turn the muting off.

Verify Altitude aural Alert operates normally.

1. Perform Altitude Alert test under the CURRENT STATUS item on the DFCS BITE TEST FAULT REVIEW menu from the Control Display Unit (CDU).

## **OPERATION (O)**

Verify TCAS and GPWS aural alerts operate normally.

1. Perform TCAS Supplementary Procedure SP.11.1. An aural annunciation at the completion of the test is heard.
2. Perform GPWS Supplementary Procedure SP.15.1. GPWS Aural alerts are heard.

---

**23-02 Passenger Address System (Includes STC ST10238SC)**  
**23-02-01 Passenger Configuration**

Interval	Installed	Required	Procedure
B	1	1	(O)

May be inoperative provided:

- a. Flight deck PA function is operative.
  - b. At least one cabin attendant station PA function is operative.
  - c. For returning to base, the public address function from the cabin side may be inoperative provided the interphone system between the flight deck and cabin is serviceable and arrangement is made for the pilot to do the P/A announcement. (Also see MEL item 33-03).
- 

### **OPERATIONS (O)**

If passenger address system is rendered inoperative; Prior to flight, the pilot in command must establish and brief Cabin Crew on using the flight deck PA for briefings and relay crash landing or ditching instruction by use of megaphone. Must be serviceable between flight deck and forward cabin attendant station at all time for all flights. For detailed explanation, refer SEP manual Part 6.

---

**23-02 Passenger Address System (Includes STC ST10238SC)**
**23-02-01 Passenger Configuration**
**23-02-01-01 Lavatory Speakers**

Interval	Installed	Required	Procedure
C	3	0	(O)

May be inoperative provided alternate procedures are established and used.

Note: Each lavatory PSU is installed with a speaker.

---

### **OPERATIONS (O)**

If lavatory speakers are rendered inoperative; Ensure "return to seat" light in the lavatory is operating normally. Brief and establish communication with passenger to respond when required by crew prior to using the lavatory. For detailed explanation, refer SEP manual Part 3 and Part 6



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- 23-02 Passenger Address System (Includes STC#  
ST10238SC)  
23-02-01 Passenger Configuration  
23-02-01-02 Cabin Speakers

Interval	Installed	Required	Procedure
C	56	-	

May be inoperative provided inoperative speakers are not adjacent to each other.

-----

**23-03 Communication Systems (VHF, UHF and HF)****23-03-00 Very High Frequency (VHF) Communication Systems**

Interval	Installed	Required	Procedure
D	3	1	(M)

1. No.1 VHF must be serviceable.
2. Two VHF must be serviceable ex-KUL.

**ADDITIONAL NOTE**

For airplanes with ACARS installed that do not have the optional Voice Mode Protection (VMP) or ACARS over AVLC (Aviation VHF Link Control), VHF-3 cannot be used for ATC voice communications when ACARS is operational. For these airplanes, the following applies: If VHF-3 can be tuned with ACARS deactivated, it may be used for dispatch credit if ACARS is deactivated. If VHF-3 cannot be tuned with ACARS deactivated, VHF-3 must be switched with an inoperative VHF-1 or VHF-2 transceiver to be used for dispatch credit. Dispatch is allowed with ACARS inoperative per MEL item 23-09.

**MAINTENANCE (M)**

1. If necessary, ACARS may be deactivated by opening and collaring the ACARS AC and DC circuit breakers.
2. Notify MOC that VHF-2 (or 3) is inoperative, and at least 2 VHF must be serviceable ex-KUL.

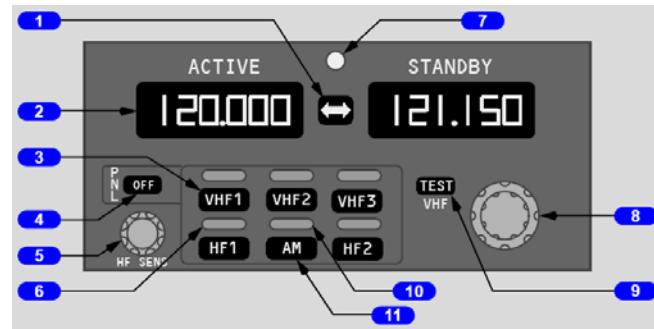
**23-03 Communication Systems (VHF, UHF and HF)****23-03-02 Radio Tuning Panels**

Interval	Installed	Required	Procedure
C	3	2	

One may be inoperative provided:

- a. Left radio tuning panel operates normally.
- b. Inoperative radio tuning panel remains OFF.

NOTE: Radio Tuning Panel is not to be confused with VHF Communication Panel and HF Communication Panel. Radio Tuning Panel is only installed on some of MAB B737-800.



---

**23-03 Communication Systems (VHF, UHF and HF)**

**23-03-02 Radio Tuning Panels**

**23-03-02-01 Off-Side Tuning Light**

Interval	Installed	Required	Procedure
C	3	0	

---

**23-03 Communication Systems (VHF, UHF and HF)**

**23-03-03 High Frequency (HF) Communication System**

**23-03-03A Operations Not Requiring Two LRCS  
(Non-EDTO and Not Extended Overwater flights)**

Interval	Installed	Required	Procedure
D	2	Refer below	(M) [E]

1. Both HF must be serviceable ex-KUL for sector(s) where HF is the only means of communication.
2. For other sectors where HF is the only means of communication, one HF must be serviceable.
3. Both may be inoperative for sectors with VHF as primary means of communications.
4. One or more frequencies may be inoperative provided that they are not required for the route to be flown.

NOTE 1: Aircraft with less than two serviceable HF may be subject to route restrictions. Consult MOC/FDC for details.

NOTE 2: Operations that require two long range communications systems are EDTO (more than 60 minutes from adequate airports) and/or Extended Overwater flights (90 minutes or more over water). Refer to MEL Preamble for full definition of EDTO and Extended Overwater flights.

---

### **MAINTENANCE (M)**

Notify MOC, FDC and OCC that HF-1 (or HF-2, or both) is unserviceable, and that aircraft is not qualified for EDTO (if applicable) or Extended Overwater flights.

- 23-03 Communication Systems (VHF, UHF and HF)**  
**23-03-03 High Frequency (HF) Communication System**  
**23-03-03B Operations Requiring Two LRCS  
(EDTO and/or Extended Overwater flights)**

Interval	Installed	Required	Procedure
C	2	1	(O) (M)

May be inoperative while conducting operations that require two LRCS provided:

- a. SATCOM Voice or Data Link is installed and operates normally.
- b. Alternate procedures are established and used.
- c. SATCOM coverage is available over intended route of flight.
- d. If Inmarsat Codes are not available while using SATCOM voice, prior coordination with appropriate ATS facility is required.

**NOTE 1:** SATCOM is to be used only as a backup to normal HF communications unless otherwise authorized by appropriate ATS facility.

**NOTE 2:** Aircraft with less than two serviceable HF may be subject to route restrictions. Consult MOC/FDC for details.

**NOTE 3:** Operations that require two long range communications systems are EDTO (more than 60 minutes from adequate airports) and/or Extended Overwater flights (90 minutes or more over water). Refer to MEL Preamble for full definition of EDTO and Extended Overwater flights.

### **MAINTENANCE (M)**

Notify MOC, FDC and OCC that HF-1 (or HF-2, as appropriate) is unserviceable.

### **OPERATIONS (O)**

1. (Deleted).
2. For operations that require two long range communications systems with one HF communication system operating ensure SATCOM Voice or Data Link is installed and available over the intended route of flight.

- 23-04 Crewmember Interphone System**  
**23-04-01 Flight Deck to Cabin / Cabin to Flight Deck / Cabin to Cabin Station(s)**

Interval	Installed	Required	Procedure
B	6	3	(O)

May be inoperative provided:

- a. Flight deck to cabin and cabin to flight deck interphone functions operate normally on at least 50% of cabin handsets.
  - b. Operative flight attendant station has an operative flight attendant seat.
  - c. Alternate communication procedures are established and used.
- NOTE: Any station function(s) that operate normally may be used.
- 

### **OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Cabin Crew are to enter flight deck when chime is audible or when call light illuminates. PA may be used by Flight Crew / Cabin Crew as means of attracting Cabin Crew's attention. Flight Crew are to respond when chime is audible. Forward cabin attendant interphone must be serviceable. For detailed explanation, refer SEP manual Part 6.

- 23-04 Crewmember Interphone System**  
**23-04-02 Flight Deck to Ground**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate communication procedures are established and used.

-----

### **OPERATIONS (O)**

If communications cannot be established, Flight Crew are to use ICAO standard hand signals. Refer to FOPM for details.

- 23-04 Crewmember Interphone System**  
**23-04-03 Audio Visual Alerting Systems**  
**23-04-03-01 Flight Deck Call Light**

Interval	Installed	Required	Procedure
B	1	0	

May be inoperative provided:

- a. The flight deck chime operates normally.
- b. The flight deck chime differentiates between normal and emergency calls.

NOTE: The flight deck chime must always be operative.

**23-04 Crewmember Interphone System****23-04-03 Audio Visual Alerting Systems****23-04-03-02 Flight Deck Chime**

Interval	Installed	Required	Procedure
	1	1	

Must be operative.

**23-04 Crewmember Interphone System****23-04-03 Audio Visual Alerting Systems****23-04-03-03 Cabin Attendant Call Light****23-04-03-03A PA System Operates Normally**

Interval	Installed	Required	Procedure
B	2	0	(O)

May be inoperative provided:

- a. PA system operates normally.
- b. Affected light is not used for lavatory smoke detector alerting.
- c. Alternate procedures for contacting flight attendants are established and used.

NOTE 1: Passenger to Attendant Call System is considered a Nonessential Equipment and Furnishing (NEF).

NOTE 2: Any visual alerting system function(s) that operate normally may be used,

**OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Cabin Crew are to communicate with Flight Crew through interphone prior to entering flight deck when chime is audible. PA may be used by Flight Crew as means of attracting Cabin Crew's attention. Double Chime could be used as an alternate.

**23-04 Crewmember Interphone System****23-04-03 Audio Visual Alerting Systems****23-04-03-03 Cabin Attendant Call Light****23-04-03-03B Cabin Attendant Chime Operates Normally**

Interval	Installed	Required	Procedure
B	2	0	(O)

May be inoperative provided:

- a. Cabin attendant chime operates normally.
- b. Cabin attendant chime differentiates between normal and emergency calls.
- c. Affected light is not used for lavatory smoke detector alerting.
- d. Alternate procedures for contacting flight attendants are established and used.

**NOTE 1:** Passenger to Attendant Call System is considered a Nonessential Equipment and Furnishing (NEF).

**NOTE 2:** Any visual alerting system function(s) that operate normally may be used.

### **OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Cabin Crew are to communicate with Flight Crew through interphone prior to entering flight deck when chime is audible. PA may be used by Flight Crew as means of attracting Cabin Crew's attention. Double Chime could be used as an alternate.

---

**23-04 Crewmember Interphone System**

**23-04-03 Audio Visual Alerting Systems**

**23-04-03-04 Cabin Attendant Chime**

**23-04-03-04A PA System Operates Normally**

Interval	Installed	Required	Procedure
B	2	0	(O)

May be inoperative provided:

- PA system operates normally.
- Affected chime is not used for lavatory smoke detector alerting.
- Alternate procedures for contacting flight attendants are established and used.

**NOTE 1:** Passenger to Attendant Call System is considered Nonessential

Equipment and Furnishing (NEF).

**NOTE 2:** Any audio alerting system function(s) that operate normally may be used.

### **OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Monitor cabin call light. Cabin Crew are to communicate with Flight Crew through interphone prior to entering flight deck when call light illuminates. PA may be used by Flight Crew as means of attracting Cabin Crew's attention.

---

**23-04 Crewmember Interphone System**

**23-04-03 Audio Visual Alerting Systems**

**23-04-03-04 Cabin Attendant Chime**

**23-04-03-04B Cabin Attendant Call Light Operates Normally**

Interval	Installed	Required	Procedure
B	2	0	(O)

May be inoperative provided:

- Cabin attendant call light operates normally.
- Cabin attendant call light differentiates between normal and emergency calls.

c. Affected chime is not used for lavatory smoke detector alerting.

d. Alternate procedures for contacting flight attendants are established and used.

NOTE 1: Passenger to Attendant Call System is considered Nonessential Equipment and Furnishing (NEF).

NOTE 2: Any visual alerting system function(s) that operate normally may be used,

**OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Monitor cabin call light. Cabin Crew are to communicate with Flight Crew through interphone prior to entering flight deck when call light illuminates. PA may be used by Flight Crew as means of attracting Cabin Crew's attention.

**23-04 Crewmember Interphone System****23-04-04 Handset Systems****23-04-04-01 Flight Deck Handset****23-04-04-01A Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

a. Flight deck to cabin communication operates normally.

b. Alternate procedures are established and used.

**OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Flight Crew are to use the service / flight interphone selector switch on the audio control / selector panel to communicate with cabin crew.

**23-04 Crewmember Interphone System****23-04-04 Handset Systems****23-04-04-01 Flight Deck Handset****23-04-04-01B Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

**23-04                  Crewmember Interphone System****23-04-04              Handset Systems****23-04-04-02           Cabin Handsets**

Interval	Installed	Required	Procedure
B	4	2	(O)

May be inoperative provided:

- a. Fifty percent of cabin handsets operate normally.
- b. Operative handset(s) is located at an operative flight attendant seat.
- c. Alternate communication procedures between the affected flight attendant station(s) are established and used.

**OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Monitor cabin call light and cabin attendant chime. Cabin Crew are to communicate with flight crew through remaining interphone prior to entering flight deck when call light illuminates or cabin attendant chime is audible. PA may be used by flight deck crew as means of attracting Cabin Crew's attention. Megaphones are to be used during emergency. Forward attendant cabin handset must be serviceable

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**23-05 MOVED (Cabin Attendant(s) Inter-Cabin Phone System)**

Interval	Installed	Required	Procedure

Deleted prior to Revision 27, relief incorporated into Item 23-04.

-----

**23-06 Selective Call System (SELCAL)****23-06A Alternate procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate procedures are established and used.

- - - - -

**OPERATIONS (O)**

SELCAL may be inoperative provided continuous radio watch is maintained throughout the period required.

**23-06 Selective Call System (SELCAL)****23-06B Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

- - - - -

**23-06 Selective Call System (SELCAL)****23-06-01 Channels****23-06-01-01A Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided alternate procedures are established and used.

- - - - -

**OPERATIONS (O)**

SELCAL may be inoperative provided continuous radio watch is maintained throughout the period required

**23-06 Selective Call System (SELCAL)****23-06-01 Channels****23-06-01-01B Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	2	0	

May be inoperative provided procedures do not require its use.

- - - - -



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**23-07            Flight Interphone System**

**23-07-01        MOVED (Flight Deck Intercom)**

Interval	Installed	Required	Procedure

Deleted by Revision 33, relief incorporated into Item 25-11.

- - - - -

---

**23-07            Flight Interphone System**

**23-07-02        MOVED (Flight Deck to Ground)**

Interval	Installed	Required	Procedure

Deleted by Revision 45, relief incorporated into Item 23-04.

- - - - -



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23-08      **MOVED [Forward Observer's Audio Selector Panel]**

Interval	Installed	Required	Procedure

Deleted revision 33, relief incorporated into Item 25-11.

-----

**23-09 ACARS System**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided that:

1. Other communication channels (VHF and HF) are available.
2. Other flight monitoring equipment (ADS-B Out or SATCOM) is available and capable to cover the entire area of operation. Refer to FDC for coverage area.

Note: Any portion of system that operates normally may be used.

-----

*For -800 with CVR Datalink:*

**MAINTENANCE NOTE**

With CVR Datalink enabled, an inoperative ACARS could cause a CVR fault.

If Datalink is inoperative refer to MEL 23-27. If CVR and/or RIPS is inoperative refer to MEL 23-10.

**NOTE:** CVR which records the Datalink messages from the ACARS System is installed in all MAB B738 aircrafts except 9M-MLE thru MLI only.

**MAINTENANCE (M)**

Inform MOC immediately and MOC to advice FDC and OCC.

**23-09 ACARS System****23-09-01 ACARS Printer**

Interval	Installed	Required	Procedure
D	1	0	(M)

-----

**MAINTENANCE (M)**

Inform MOC immediately and MOC to advice FDC and AO.

**23-09 ACARS System****23-09-02 FMC Interface Function****23-09-02A Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided alternate procedures are established and used.

NOTE: Any portion of system that operates normally may be used.

-----

**OPERATIONS (O)**

ACARS is the primary flight monitoring equipment. ADS-B Out and Satcom can be used as alternate means of complying with flight monitoring requirement.



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- 23-09            ACARS System**  
**23-09-02       FMC Interface Function**  
**23-09-02B      Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

NOTE: Any portion of system that operates normally may be used.

-----

**23-10 Cockpit Voice Recorder System (CVR)****23-10-01 Aircraft without Recorder Independent Power Supply (RIPS)**

Interval	Installed	Required	Procedure
A	1	0	

For dispatch with the cockpit voice recorder inoperative, the flight data recorder must be serviceable.

NOTE 1 : Cockpit voice recorder must be serviceable for Test Flight and Base Training.

NOTE 2 : Applicable for six sectors only.

NOTE 3 : With CVR Datalink enabled, an inoperative ACARS could cause a CVR fault, refer to MEL 23-09.

**23-10 Cockpit Voice Recorder System (CVR)****23-10-02 Aircraft with Recorder Independent Power Supply (RIPS) (-800)**

Interval	Installed	Required	Procedure
A	1	0	(M)

May be inoperative provided:

- a. Flight Data Recorder (FDR) operates normally.
- b. RIPS circuit breaker is pulled and collared
- c. A 15 minute interval after pulling the c/b is achieved before departure.
- d. Repairs are made within three flight days.

NOTE 1: CVR is inoperative with the RIPS c/b pulled and collared.

NOTE 2: With CVR Datalink enabled, an inoperative ACARS could cause a CVR fault, refer to MEL 23-09.

NOTE 3: RIPS is installed in all MAB B738 except 9M-MXA thru MXC and 9M-MLD thru MLJ.

**MAINTENANCE (M)**

Deactivate RIPS (AMM 23-00-00/901):

1. Open and collar RIPS circuit breaker.

**23-10 Cockpit Voice Recorder System (CVR)****23-10-02 Aircraft with Recorder Independent Power Supply (RIPS) (-800)****23-10-02-01 Recorder Independent Power Supply (RIPS)****23-10-02-01A CVR Operates Normally**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided:

- a. CVR operates normally.
- b. RIPS battery is removed.



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**NOTE: RIPS is installed in all MAB B738 except 9M-MXA thru MXC and 9M-MLD thru MLJ.**

**MAINTENANCE (M)**

Removed RIPS battery (AMM 23-00-00/901):

1. Removed battery from RIPS.
2. Cover battery pack connector on the RIPS charger assembly with an electrical connector cap.
3. Secure electrical connector cap to charger assembly with tape.

---

**23-10            Cockpit Voice Recorder System (CVR)**

**23-10-02       Aircraft with Recorder Independent Power Supply (RIPS) (-800)**

**23-10-02-01     Recorder Independent Power Supply (RIPS)**

**23-10-02-01B    FDR Operates Normally**

Interval	Installed	Required	Procedure
<b>A</b>	<b>1</b>	<b>0</b>	<b>(M)</b>

May be inoperative provided:

- a. Flight Data Recorder (FDR) operates normally.
- b. RIPS battery is removed.
- c. Repairs made within three flight days.

**NOTE: RIPS is installed in all MAB B738 except 9M-MXA thru MXC and 9M-MLD thru MLJ.**

**MAINTENANCE (M)**

Removed RIPS battery (AMM 23-00-00/901):

1. Removed battery from RIPS.
2. Cover battery pack connector on the RIPS charger assembly with an electrical connector cap.
3. Secure electrical connector cap to charger assembly with tape.

---

**23-11            MOVED [High Frequency (HF) Communication System  
(Includes STC's ST02959AT and ST01837LA)]**

Interval	Installed	Required	Procedure

Moved into MEL item 23-03 (together with VHF and UHF communication systems).

---



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**23-12              Emergency Locator Transmitter (ELT)**  
**23-12-01          Survival Type ELTs**

---

Interval	Installed	Required	Procedure
	<b>1</b>	<b>1</b>	

Must be operative.

-----

---

**23-12              Emergency Locator Transmitter (ELT)**  
**23-12-02          Fixed ELTs**

---

Interval	Installed	Required	Procedure
	<b>1</b>	<b>1</b>	

Must be operative.

-----

**23-13            Flight Crew Audio Selector/Control Panels**

Interval	Installed	Required	Procedure
	2	2	(O)

Must be operative

**23-14 Flight Deck Headsets Earphones/Headphones and Boom**
**Microphones**
**23-14-00 Headsets/Headphones**

Interval	Installed	Required	Procedure
D	3	2	

Any in excess of those required by Civil Aviation Directive – 6 Part 1 – Commercial Air Transport (CAD 6 Part 1 - CAT) may be inoperative or missing.

NOTE: Civil Aviation Directive – 6 Part 1 – Commercial Air Transport (CAD 6 Part 1 - CAT) only requires headsets/headphones for flight crew, so all other types of headsets/headphones (including observer headsets) may be deferred under this item. For flight crew headset/headphones, see MEL item 23-14-01 for boom mike and/or MEL item 23-14-02 for earphones.

**23-14 Flight Deck Headsets Earphones/Headphones and Boom**
**Microphones**
**23-14-01 Headset Boom Microphones**

Interval	Installed	Required	Procedure
	2	2	

Must be operative for flightcrew.

NOTE: For non-flightcrew headsets, refer main item 23-14.

**23-14 Flight Deck Headsets Earphones/Headphones and Boom**
**Microphones**
**23-14-02 Headset Earphones/Headphones**

Interval	Installed	Required	Procedure
C	2	1	

Either Captain's or First Officer's headset earphones/headphones may be inoperative provided associated flight deck speaker operates normally.

NOTE: For non-flightcrew headsets, refer main item 23-14.

**23-14            Flight Deck Headsets Earphones/Headphones and Boom  
                  Microphones**

**23-14-03       Active Noise Canceling/Reduction Function**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided normal audio function of headset is operative.

-----



---

**23-15            Pre-recorded Passenger Announcement System**  
**23-15A        Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate procedures are established and used.

- - - - -

**OPERATIONS (O)**

Prior to flight, the pilot in command must establish and brief Cabin Crew on communication options. Crew is advisable to make the pre-recorded announcement manually when time permits. During an emergency, if time is not permitting, shout "MASK ON, FASTEN SEATBELT". Manual announcement is to be conducted when Commanders announce Emergency Descent over the PA.

---

**23-15            Pre-recorded Passenger Announcement System**  
**23-15B        Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

- - - - -

**23-16 Push-To-Talk (PTT) Switches****23-16-01 Control Wheel PTT Switches**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative provided:

- a. Associated audio selector panel PTT switch operates normally.
- b. Affected switch is either verified failed open or is deactivated.

**MAINTENANCE (M)****For -800:**

Verify the inoperative control wheel PTT switch is failed open. If the switch has not failed open, deactivate the switch (AMM 23-00-00/901).

1. To verify the switch has electrically failed open listen for sidetone during a trial transmission, but do not use the associated PTT switch.  
NOTE: If there is sidetone, the PTT switch has failed in the closed position.
2. To deactivate the inoperative switch, disconnect, cap and stow the ground wire of the control wheel PTT switch (AMM 23-00-00/901).
3. Use the audio selector panel PTT switch to verify R/T and/or I/C communications.

**23-16 Push-To-Talk (PTT) Switches****23-16-02 Flight Crew Audio Selector Panel PTT Switches**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative provided:

- a. Associated control wheel PTT switch operates normally.
- b. Affected switch is verified failed open.

**MAINTENANCE (M)****For -800:**

Verify the inoperative Flight Crew Audio Selector Panel PTT switch is failed open (AMM 23-00-00/901):

**For All Models:**

1. To verify the switch has electrically failed open listen for sidetone during a trial transmission, but do not use the associated PTT switch.  
NOTE: If there is sidetone, the PTT switch has failed in the closed position.
2. Use the control wheel PTT switch to verify communications can be established.

- 
- 23-16 Push-To-Talk (PTT) Switches**  
**23-16-03 Glareshield Panel PTT Switch(es)**  
**23-16-03A Required By Procedures**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided affected switch is either verified failed open or is deactivated.

---

### **MAINTENANCE (M)**

#### **For -800:**

Verify the inoperative Glareshield Panel PTT switch(es) is failed open. If the switch(es) has not failed open, deactivate the switch(es). (AMM 23-00-00/901).

#### **For All Models:**

1. To verify the switch has electrically failed open listen for sidetone during a trial transmission, but do not use the associated PTT switch.  
 NOTE: If there is sidetone, the PTT switch has failed in the closed position.
  2. To deactivate the inoperative switch, disconnect, cap and stow the ground wire of the glareshield panel PTT switch.
- 

- 23-16 Push-To-Talk (PTT) Switches**  
**23-16-03 Glareshield Panel PTT Switch(es)**  
**23-16-03B Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	2	0	(M)

May be inoperative provided:

- a. Affected switch is either verified failed open or is deactivated.
  - b. Procedures do not require its use.
- 

### **MAINTENANCE (M)**

#### **For -800:**

Verify the inoperative Glareshield Panel PTT switch(es) is failed open. If the switch(es) has not failed open, deactivate the switch(es). (AMM 23-00-00/901).

#### **For All Model:**

1. To verify the switch has electrically failed open listen for sidetone during a trial transmission, but do not use the associated PTT switch.  
 NOTE: If there is sidetone, the PTT switch has failed in the closed position.
2. To deactivate the inoperative switch, disconnect, cap and stow the ground wire of the glareshield panel PTT switch.

---

**23-17            Flight Deck Hand Microphones**  
**23-17A        Boom Microphone Operates Normally**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative or missing provided associated boom microphone operates normally.

---

**23-17            Flight Deck Hand Microphones**  
**23-17B        Excess Flight Deck Hand Microphones**

Interval	Installed	Required	Procedure
D	2	0	

Any in excess of those required for each person on flight deck duty may be inoperative or missing.

---

**23-18            Satellite Communication System (SATCOM)**  
**23-18A        Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O) (M)

Except for RNP 4 operation, may be inoperative provided that:

1. Other communication channels (HF and VHF voice) are available,
  2. Other flight monitoring equipment (ADS-B Out or ACARS) is available and capable to cover the entire area of operation. Refer to FDC for coverage area.
- 

**OPERATIONS (O)**

SATCOM is not required for EDTO 180 minutes or below. Use HF or VHF voice as appropriate when required. SATCOM system must be operative for routing where Controller Pilot Data Link Communications (CPDLC) operations are mandatory.

**MAINTENANCE (M)**

For RNP4 operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP 4 operation."

**23-18            Satellite Communication System (SATCOM)**  
**23-18B        Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

-----

**23-19            MOVED (Alerting System (Audio/Visual))**

Interval	Installed	Required	Procedure

Alerting System (Audio/Visual) has been incorporated into MEL 23-04.

-----



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**23-20            MOVED (Handset Systems)**

Interval	Installed	Required	Procedure

Handset Systems has been incorporated into MEL 23-04.

-----

**23-21      Electronic Visual Surveillance Systems (All Installed Systems)**  
**23-21A    Alternate Procedures Required**

Interval	Installed	Required	Procedure
A	1	0	(M) (O)

May be inoperative and components may be missing provided:

- a. An alternative means of viewing area on cabin side of flight crew compartment is available and functional.
- b. Alternate procedures are established and used for ensuring security of area outside flightcrew compartment door.
- c. Repairs are made within three flight days.

NOTE: Any portion of the system which operates normally may be used.

-----

**MAINTENANCE (M)**

Deactivate the system by tripping appropriate circuit breakers. Refer AMM.

**OPERATIONS (O)**

Cabin Crew is to establish communication with flight deck crew through the interphone prior to entry. Flight Crew is to positively indentify Cabin Crew through the peephole prior to granting access. For detailed explanation, refer SEP manual Part 6.

**23-21      Electronic Visual Surveillance Systems (All Installed Systems)**  
**23-21B    Flight Deck Door Viewing Port Operates Normally**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative and components may be missing provided:

- a. The flight deck door viewing port is installed and operates normally.
- b. Alternate procedures are established and used.

NOTE: Any portion of the system which operates normally may be used.

-----

**OPERATIONS (O)**

Cabin Crew is to establish communication with flight deck crew through the interphone prior to entry. Flight Crew is to positively indentify Cabin Crew through the peephole prior to granting access. For detailed explanation, refer SEP manual Part 6.



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**23-21      Electronic Visual Surveillance Systems (All Installed Systems)**  
**23-21C     Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative and components may be missing provided procedures do not require its use.

-----

---

**23-27 Data Link Communications System**

**23-27A Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate procedures are established and used.

NOTE: Any portion of system that operates normally may be used.

---

**OPERATIONS (O)**

Alternate procedures must be established and used.

---

**23-27 Data Link Communications System**

**23-27B Procedure Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

NOTE: Any portion of system that operates normally may be used.

---



- 23-28 FWD and AFT Attendant Control Panel LCD Touch Screen Display, Display Processor and Display Processor Over-Temperature LED Light, Boeing Sky Interior (BSI) (-800)**

Interval	Installed	Required	Procedure
C	6	0	(O)

May be inoperative provided alternate procedure are established and used.

NOTE: Any portion of the system that operates normally may be used.

-----

### **OPERATIONS (O)**

Alternate procedures must be established and used.

NOTE: The BSI ceiling and sidewall lighting defaults to a 30% white lighting state (medium white) for any loss of communication from the FWD Attendant Control Panel. For initial charge or first flight of the day, the photoluminescent strips may be illuminated for 15 minutes with bin doors closed and minimum activity in the cabin with the lighting in this 30% state to supply 7 hours of photoluminescent charge. Additionally, the photoluminescent strips will not lose charge if the cabin lights are operated continually in this 30% state during normal operations once the initial charge is achieved.

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**24-01                  Engine Driven Generator Systems**  
**24-01-02            -800**


---

Interval	Installed	Required	Procedure
B	2	1	(M) (O) [E] [P]

Except for EDTO & LVO operations, may be inoperative provided APU generator operates normally and is used throughout flight.

---

**MAINTENANCE (M)**

**CAUTION: IF THE ENGINE OPERATES WITH THE IDG DISCONNECTED FOR MORE THAN 50 HOURS, THE IDG INPUT SHAFT BALL BEARING ASSEMBLY SHOULD BE REMOVED AND SHOP INSPECTED FOR WEAR.**

1. Advise MOC/FDC/OCC that performance and EDTO (if applicable) is affected.  
Advise MOC to monitor IDG disconnected time limit.
2. Disconnect the engine driven generator (AMM 24-00-00/901):
  - A. Check the oil level of the inoperative IDG (AMM 12-13-21/301).  
NOTE: The IDG can be operated without oil for up to 50 hours in the disconnected mode.
  - B. Supply external power.
  - C. Start the associated engine (AMM 71-00-00/201).
  - D. Position the AC Meters Selector on the AC and DC Metering panel to the applicable GEN position.
  - E. Lift the DISCONNECT switch guard.
  - F. Push the DISCONNECT switch to the DISCONNECT position when the engine is at or above idle speed.
  - G. Verify the DRIVE light illuminates.
  - H. Verify these AC Meter indications on the P-5 panel:
    - 1) Verify the AC VOLTS indication shows 0 volts.
    - 2) Verify the CPS FREQ indication shows blank.
  - I. Stop the engine (AMM 71-00-00).
3. Remove the lamp from these associated lights:
  - A. Generator DRIVE light on Generator Drive and Standby Power Panel.
  - B. GEN OFF BUS light on Ground Power Panel and Bus Switching Panel.

**OPERATIONS (O)**

Use the APU generator to power the bus associated with the inoperative engine driven generator system.

Note: For APU operation during flight, refer to the Boeing Flight Planning and Performance Manual (FPPM) for additional fuel flow allowance

With the generator disconnect, the ELEC light will illuminate during Master Caution recall and will extinguish when reset

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**24-02 APU Generator System**

Interval	Installed	Required	Procedure
C	1	0	(M) [E]

Except for EDTO operations, may be inoperative.

-----

**MAINTENANCE (M)**

1. Advise MOC/FDC/OCC that EDTO (if applicable) is affected.
2. Advise MOC that APU Generator is inop (may affect engine start and dispatch from certain stations).

---

**24-03            Engine Driven Generator LOW OIL PRESSURE/DRIVE**

**Lights**

**24-03-02        -800**

Interval	Installed	Required	Procedure
C	2	0	

DRIVE lights and associated generator low oil pressure switches may be inoperative.

---



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**24-07 Frequency Meter**

Interval	Installed	Required	Procedure
C	1	0	

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2.24-07.1  
Internal Use Only

**24-08 AC Volts Indication**

Interval	Installed	Required	Procedure
B	1	0	(O)

May be inoperative except in STBY PWR position provided Standby Power Test is accomplished.

- - - - -

**OPERATIONS (O)**

Verify normal operation of the AC Voltmeter indication when the AC Meter Selector is in the STBY PWR position:

Do the Supplementary Procedures - Electrical - Standby Power Test (refer to the Boeing Flight Crew Operations Manual).



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Section 2: ATA 24  
Electrical Power

**24-09 AC Ammeters**

Interval	Installed	Required	Procedure
C	-	0	

May be inoperative provided associated generator off bus lights operate normally.

-----

---

**24-11            External Power System**

Interval	Installed	Required	Procedure
C	1	0	

NOTE: Any portion of system which operates normally may be used.

---

**24-11            External Power System**

**24-11-01        DC Receptacle**

Interval	Installed	Required	Procedure
D	1	0	

**24-12 GEN OFF BUS Lights**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided associated generator AC ammeter operates normally.

- - - - -

**OPERATIONS NOTE**

The associated AC Ammeter can be used to determine when the generator does not supply power to the generator bus.

**24-14 BAT DISCHARGE Light**

Interval	Installed	Required	Procedure
C	1	0	

**OPERATIONS NOTE**

These steps can be performed to verify that the batteries are not discharging:

1. Position the DC Meters Selector to BAT.
2. Verify that the DC AMPS indication is not negative.
3. If an APU (or AUX) battery is installed, position the DC Meters Selector to APU (or AUX) BAT.
4. Verify that the DC AMPS indication is not negative.

**24-15 TR UNIT Light**

Interval	Installed	Required	Procedure
C	1	0	

---

**OPERATIONS NOTE**

This test can be performed to verify normal operation of the TR's:

1. Position the DC Meters Selector to TR 1.
2. Verify that the DC AMPS indication is greater than 5 amps.
3. Position the DC Meters Selector to TR 2.
4. Verify that the DC AMPS indication is greater than 5 amps.
5. Position the DC Meters Selector to the TR 3.
6. Verify that the DC VOLTS indication is  $28 \pm 6$  volts.

**24-16            ELEC Light  
24-16-02        -800**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- a. Standby Power Test is accomplished once each flight day.
  - b. Battery Charger is verified to operate normally.
- 

**OPERATIONS (O)**

1. All models with dual batteries installed:
  - A. Do the Supplementary Procedures - Electrical - Standby Power Test (refer to the Boeing Flight Crew Operations Manual).
  - B. Position the DC Meters selector to APU (or AUX) BAT.
  - C. Position the STANDBY POWER switch to BAT.
  - D. Wait for 5 seconds.
  - E. Position the STANDBY POWER switch to AUTO.
  - F. Verify that the DC AMPS indication is greater than or equal to 10 Amps.
  - G. Position the DC Meters selector to BAT.
  - H. Verify that the DC AMPS indication is greater than or equal to 10 Amps.
  - I. If the DC AMPS indication is less than 10 Amps, position the STANDBY POWER switch to BAT.
    - 1) Wait for 5 seconds.
    - 2) Position the STANDBY POWER switch to AUTO.
    - 3) Verify that the DC AMPS indication is greater than or equal to 10 Amps.
  - J. Return the DC Meters selector to normal position.
2. All models with single battery and 40AH or 48AH battery charger installed:
  - A. Do the Supplementary Procedures - Electrical - Standby Power Test (refer to the Boeing Flight Crew Operations Manual).
  - B. Position the DC Meter selector to BAT.
  - C. Position the STANDBY POWER switch to BAT.
  - D. Wait for 5 seconds
  - E. Position the STANDBY POWER switch to AUTO.
  - F. Verify that the DC AMPS indication is greater than or equal to 10 Amps.
  - G. Return the DC Meters selector to normal position.
3. All models with single battery and the 36AH battery charger installed:
  - A. Establish AC electrical power on the airplane.
  - B. Do the Supplementary Procedures - Electrical - Standby Power Test (refer to the Boeing Flight Crew Operations Manual).

- C. Position the DC Meters selector to BAT.
- D. If APU generator is on-line, position the BUS TRANSFER switch to OFF.
- E. Position the APU GEN No. 2 switch or GRD PWR switch to OFF.
- F. Wait for 5 seconds.
- G. Position the APU GEN No. 2 switch or GRD PWR switch to ON.
  - 1) Verify the DC AMPS indication is greater than 5 Amps.
  - 2) Verify the DC VOLTS indication is greater than 26Vdc.
- H. Position the BUS TRANSFER switch to AUTO.
- I. Return the DC Meters selector to normal position.

**24-17 DC Ammeter Indication**

Interval	Installed	Required	Procedure
B	1	0	(O)

May be inoperative provided:

- a. BAT position operates normally.
  - b. Standby Power Test is accomplished.
  - c. Procedures do not require its use.
- 

**OPERATIONS (O)**

1. Do the Supplementary Procedures - Electrical - Standby Power Test (refer to the Boeing Flight Crew Operations Manual).
2. Verify normal operation of the DC Ammeter indication in the BAT position.
3. If DC Ammeter has no indication in TR positions, monitoring the TRs is not possible for availability for a dual autopilot approach prior to engagement (isolated sources).

**24-18 DC Volts Indication**

Interval	Installed	Required	Procedure
B	1	0	(O)

May be inoperative except in STBY PWR position provided Standby Power Test is accomplished.

- - - - -

**OPERATIONS (O)**

Do the Supplementary Procedures - Electrical - Standby Power Test (refer to the Boeing Flight Crew Operations Manual).

**24-19 APU GEN OFF BUS Light**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- a. APU frequency meter operates normally.
  - b. APU ammeter operates normally.
- - - - -

**OPERATIONS NOTE**

1. With the AC Meter Selector in APU GEN, the frequency meter can be used to confirm proper APU generator rotational speed.
2. With the APU GEN selected ON, the appropriate generator AC ammeter can be used to confirm that the APU generator is supplying a generator bus.

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25-80-01 One missing or incomplete

25-80-02 More than one missing or incomplete; sufficient items available in Dressing Kit to meet requirement for 2 first aid kits

25-80-03 More than one missing or incomplete; replacement items available to meet requirement for 2 first aid kits

25-80-04 More than one missing or incomplete; Unable to meet requirement for 2 first aid kits

**25-90 Medical Communicable Disease Kits (MCD)**

25-90-01 -800



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Section 2: ATA 25  
Eqpt & Furnishings

**25-01 Megaphones**

Interval	Installed	Required	Procedure
	2	2	

Must be serviceable.

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**25-02                  MOVED (Crewmember Shoulder Harness (Flight Deck))**

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Interval	Installed	Required	Procedure

Deleted Revision 33, relief incorporated into Item 25-11.

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**25-03**      **Flight Attendant Seat Assembly (Single or Dual Position)**  
**25-03-01**    **Required Flight Attendant Seats**

Interval	Installed	Required	Procedure
B	6	-	(M) (O)

Note: Each flight attendant seat assembly (dual position) consists of a pull-down double seat and 2 restraint systems (4 points seat belt).

One seat position or assembly (dual position) may be inoperative provided:

- a. Affected seat is not occupied.
  - b. Flight attendant(s) displaced by inoperative seat(s) occupies either an adjacent flight attendant seat or passenger seat which is most accessible to inoperative seat(s), so as to most effectively perform assigned duties.
  - c. Alternate procedures are established and used as published in crewmember manuals.
  - d. Folding type seat stows automatically or is secured in retracted position.
  - e. Passenger seat assigned to flight attendant is placarded "FOR FLIGHT ATTENDANT USE ONLY".

**NOTE 1:** An automatic folding seat that will not stow automatically is considered inoperative.

**NOTE 2:** A seat position with an inoperative or missing restraint system is considered inoperative.

### **NOTE 3: (Deleted)**

**NOTE 4:** If one side of a dual seat assembly is inoperative and a flight attendant is displaced to adjacent seat, adjacent seat must operate normally.

## MAINTENANCE (M)

For -800:

1. For automatic stowing inoperative, remove or secure the inoperative seat in the stowed position (AMM 25-00-00/901).
  2. Determine which passenger seat(s) is closest to the inoperative attendant seat. Refer OPERATIONS (O).
  3. Advise MAB MOC. Specify which passenger seat(s) must be blocked for attendant use.

## **OPERATIONS (O)**

The flight attendant assigned to the affected seat must occupy a passenger seat as close to, or closer than, the nearest seated passenger to the associated exit. The flight attendant must be able to reach the assigned emergency exit in essentially the same time as from the normally assigned seat, i.e., a 2 or 3 seconds time difference is considered “essentially the same time”. **For detailed explanation, refer SEP manual Part 6.**

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**25-04            MOVED [Cabin Window Shades]**

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Interval	Installed	Required	Procedure

This item was only for cabin window shades on freighter/combi aircraft. Passenger Cabin Window Shades in compartments configured for passengers only are considered a passenger convenience item. Refer to MEL 25-10.

---

**25-05            Cargo Compartment Restraint Components****25-05A        Cargo Compartment Used**

Interval	Installed	Required	Procedure
A	Refer Note	-	(M)

**Note:** Cargo compartment restraint components installed include cargo nets, containers, pallets, devices which lock ULD's to the cargo compartment floor (if applicable) and any other devices which is used to restraint or otherwise prevent movement or shifting of the cargo during flight.

May be inoperative or missing provided:

- a. Acceptable cargo loading limits from an approved source, i.e. an approved Cargo Loading Manual, Cargo Handling Manual, or Weight and Balance Document are observed.
  - b. Repairs are made prior to the completion of the next heavy maintenance visit.
- 

**MAINTENANCE (M)**

1. Deactivation procedures for most cargo restraint or cargo guiding equipment are either obvious (e.g. inoperative container stop needs to be released to retracted position or removed to prevent interference with cargo loading) or unnecessary (e.g., a damaged end stop can be left as is). With the exception of the restrictions below, no other procedures are provided.
2. Refer to the Weight and Balance Manual for cargo loading limits when operating with restraint components missing or inoperative. If the number of inoperative or missing restraint components exceeds the allowance in the Weight and Balance Manual, inform Dispatch that the affected cargo compartment cannot be used.

**25-05            Cargo Compartment Restraint Components****25-05B        Cargo Compartment(s) Remains Empty**

Interval	Installed	Required	Procedure
B	-	0	

May be inoperative or missing provided associated cargo compartment remains empty.

---



## **25-05            Cargo Compartment Restraint Components**

## **25-05C          Affected Pallet Removed**

Interval	Installed	Required	Procedure
C	-	0	

May be inoperative or missing provided pallet with inoperative lock(s) is removed.

**25-06 Passenger Seat(s)**

Interval	Installed	Required	Procedure
C	166 / 160	0	(M)

May be inoperative provided:

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

NOTE 1: A seat with an inoperative seat belt is considered inoperative.

NOTE 2: Inoperative seat(s) do not affect required number of Flight Attendants.

NOTE 3: Affected seat(s) may include seat(s) behind and/or adjacent outboard seats.

NOTE 4: Certain defects still allow the seat to be occupied. Refer MEL sub-items 25-06-01 onwards for permitted defects.

NOTE 5: 166 passenger seats are installed in 9M-MLD thru MLL.

NOTE 6: 160 passenger seats are installed in 9M-FFF, 9M-MLM onwards, 9M-MXseries and 9M-MSseries.

**MAINTENANCE (M)**

Advise MOC, OCC and FDC. Specify which seats cannot be occupied.

**25-06 Passenger Seat(s)****25-06-01 Recline Mechanism****25-06-01A Seat Is Secured In Upright Position**

Interval	Installed	Required	Procedure
C	148 / 142 / 136	0	(M)

May be inoperative and seat occupied provided seat is secured in upright position.

NOTE 1: 148 passenger seats with recline mechanism are installed in 9M-MLD thru MLI and 9M-MLL.

NOTE 2: 142 passenger seats with recline mechanism are installed in 9M-MLJ thru MLK, 9M-MLM onwards, 9M-MXseries and 9M-MSseries.

NOTE 3: 136 passenger seats with recline mechanism are installed in 9M-FFF.

**MAINTENANCE (M)**

Refer to the seat manufacturer's information for securing seat in the upright position.

---

**25-06 Passenger Seat(s)**
**25-06-01 Recline Mechanism**
**25-06-01B Seat Back Is Immovable In Full Upright Position**

Interval	Installed	Required	Procedure
D	148 / 142 / 136	0	

NOTE 1: 148 passenger seats with recline mechanism are installed in 9M-MLD thru MLI and 9M-MLL.

NOTE 2: 142 passenger seats with recline mechanism are installed in 9M-MLJ thru MLK, 9M-MLM onwards, 9M-MXseries and 9M-MSseries.

NOTE 3: 136 passenger seats with recline mechanism are installed in 9M-FFF.

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

---

**25-06 Passenger Seat(s)**
**25-06-02 Arm Rests**
**25-06-02-01 Arm Rest With Recline Mechanism**

Interval	Installed	Required	Procedure
D	148 / 142 / 136	0	(M)

NOTE 1: 148 armrests with recline mechanism are installed in 9M-MLD thru MLI and 9M-MLL.

NOTE 2: 142 armrests with recline mechanism are installed in 9M-MLJ thru MLK, 9M-MLM onwards, 9M-MXseries and 9M-MSseries.

NOTE 3: 136 armrests with recline mechanism are installed in 9M-FFF.

May be inoperative or missing and seat occupied provided:

- a. Arm rest does not block an Emergency Exit.
  - b. Arm rest does not restrict any passenger from access to main aircraft aisle.
  - c. If armrest is missing, seat is secured in full upright position.
- 

### **MAINTENANCE (M)**

Refer to the seat manufacturer's information for securing seat in the upright position.

---

**25-06 Passenger Seat(s)**
**25-06-02 Arm Rests**
**25-06-02-02 Arm Rest Without Recline Mechanism**

Interval	Installed	Required	Procedure
D	58 / 56	0	

NOTE 1: 58 armrests without recline mechanism are installed in 9M-MLD thru MLL.

NOTE 2: 56 armrests without recline mechanism are installed in 9M-FFF, 9M-MLM onwards, 9M-MXseries and 9M-MSseries.

May be inoperative or missing and seat occupied provided:

- a. Arm rest does not block an Emergency Exit.
  - b. Arm rest does not restrict any passenger from access to main aircraft aisle.
- 

**25-06 Passenger Seat(s)****25-06-03 Underseat Baggage Restraining Bars**

Interval	Installed	Required	Procedure
C	58 / 56	0	(O)

NOTE 1: 58 underseat baggage restraining bars are installed in 9M-MLD thru MLL.

NOTE 2: 56 underseat baggage restraining bars are installed in 9M-FFF, 9M-MLM onwards, 9M-MXseries and 9M-MSseries.

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".
  - c. Procedures are established to alert Cabin Crew of inoperative restraining bar.
- 

**OPERATIONS (O)**

Ensure cabin crew is notified of the inoperative restraining bar and that baggage is not to be placed under the associated seat.

**25-06 Passenger Seat(s)****25-06-04 DELETED (Electrical/Electronic Systems/Components)**

Interval	Installed	Required	Procedure

DELETED REV. 49

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Section 2: ATA 25  
Eqpt & Furnishings

**25-07                  MOVED (Second Observer Seat)**

Interval	Installed	Required	Procedure

Moved to Item 25-11 prior to Revision 30.

-----

**25-08                  MOVED (Flight Deck Door Lock Solenoid)**

Interval	Installed	Required	Procedure

Moved to Item 52-08 prior to Revision 30.

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**25-09 "Fasten Seat Belts While Seated" Signs or Placards**

Interval	Installed	Required	Procedure
C	<b>166 / 160</b>	0	

**NOTE 1:** 166 passenger seats are installed in 9M-MLD thru MLL.

**NOTE 2:** 160 passenger seats are installed in 9M-FFF, 9M-MLM onwards, 9M-MXseries and 9M-MSseries.

One or more signs or placards may be illegible or missing provided a legible sign or placard is visible from each occupied passenger seat.

—*Leviathan*, by Thomas Hobbes, 1651; see also *Commonwealth*, by John Milton, 1649.

**25-10 Non-Essential Equipment and Furnishings (NEF)**

Interval	Installed	Required	Procedure
	-	0	

May be inoperative, damaged, or missing:

Passenger convenience items, as expressed in this MEL, are those related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ashtrays, stereo equipment, overhead reading lamps, etc. Items addressed elsewhere in this document shall not be included. (M) and (O) procedures may be required and included in air carrier's appropriate document.

"Non-essential Equipment and Furnishings" (NEF) in the context of MAB MEL includes Passenger Convenience Items, as well as non-airworthiness or non-safety-related items that are not covered by the MEL or CDL, and also not covered by serviceable limits (e.g. leak rate, wear limits) in the manufacturer's manuals or operator's approved maintenance program.

NOTE 1: Exterior lavatory door ashtrays are not considered passenger convenience/NEF items.

NOTE 2: (M) and (O) procedures may be required.

-----

**25-11      Observer Seat(s)**
**25-11-01    Primary Observer's Seat (Including Associated Equipment)**
**25-11-01A   Passenger Seat Available**

Interval	Installed	Required	Procedure
A	1	0	(M)

May be inoperative provided:

- a. A passenger seat in **the** passenger cabin is made available to an **occupant performing** official duties.
- b. Repairs are made within two flight days.

**NOTE 1:** Consider also sub-items 25-11-01B and C below (usually less restrictive).

**NOTE 2:** Associated equipment also includes observer's Audio Select Panel (ASP) but not headsets. Refer MEL item 23-14 instead for headsets.

**MAINTENANCE (M)**

Inform FDC (at KUL only) or Traffic Stations (elsewhere) that primary observer seat is inoperative, and a passenger seat must be blocked if necessary.

**25-11      Observer Seat(s)**
**25-11-01    Primary Observer's Seat (Including Associated Equipment)**
**25-11-01B   Second Observer Seat Available**

Interval	Installed	Required	Procedure
A	1	0	

May be inoperative provided:

- a. Second observer's seat is available to an **occupant performing** official duties.
- b. Repairs are made within two flight days.

**NOTE 1:** Consider also sub-item 25-11-01C below (usually less restrictive).

**NOTE 2:** Associated equipment also includes observer's Audio Select Panel (ASP) but not headsets. Refer MEL item 23-14 instead for headsets.

**25-11      Observer Seat(s)****25-11-01    Primary Observer's Seat (Including Associated Equipment)****25-11-01C   Associated Safety Equipment Acceptable**

Interval	Installed	Required	Procedure
A	1	0	

May be inoperative provided:

- a. Required minimum safety equipment (safety belt and oxygen) is available.
- b. Seat is acceptable to an **occupant performing** official duties.
- c. Repairs are made within two flight days.

NOTE 1: These provisos are intended to provide for occupancy of above seats by an **occupant performing official duties** when minimum safety equipment (oxygen and safety belt) is functional and **the conditions are** acceptable.

NOTE 2: Pilot-in-Command will determine if minimum safety equipment is functional for other persons authorized to occupy any observer seat(s).

NOTE 3: **Associated equipment also includes observer's Audio Select Panel (ASP) but not headsets. Refer MEL item 23-14 instead for headsets.**

**25-11      Observer Seat(s)****25-11-02    Second Observer's Seat (Including Associated Equipment)**

Interval	Installed	Required	Procedure
D	1	0	

NOTE: Pilot-in-Command will determine if minimum safety equipment is functional for other persons authorized to occupy any observer seat(s).

**25-11      Observer Seat(s)****25-11-03    Crotch Straps**

Interval	Installed	Required	Procedure
C	1	0	

**25-12              Emergency Flashlight Holders/Flashlights**  
**25-12-01          Cabin**

Interval	Installed	Required	Procedure
C	6	4	

Minimum 4 flashlights must be available. The location must be at each of the main exit doors.

NOTE 1: Overwing emergency exit doors are not considered as main exit door.

NOTE 2: If less than 4 flashlights are serviceable, alternative compliance based on Civil Aviation Directive – 6 Part 1 – Commercial Air Transport (CAD 6 Part 1-CAT) may be used. This requires every crew member to have one electric flashlight each. Extra electric flashlights (not necessary to be of an approved type) are to be issued to crew so that the total number of flashlights onboard (including any remaining serviceable emergency flashlights) is equal to the number of crew. If this alternative compliance is used, annotate this in ATL and AMOS, and raise NTC to highlight this to subsequent crews. Pilot-in-Command to verify suitable flashlights are available for each crewmember prior to departure.

**25-12              Emergency Flashlight Holders/Flashlights**  
**25-12-02          Flight Deck**

Interval	Installed	Required	Procedure
	2	2	

Both must be operative

---

**25-13            Emergency Evacuation Signal System**  
**25-13A        Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate procedures are established and used.

- - - - -

**OPERATIONS (O)**

Commander to order passenger evacuation through passenger address system. If Commander is incapacitated, crew are to ensure that evacuation order is given by Copilot or CCIC.

---

**25-13            Emergency Evacuation Signal System**  
**25-13B        Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

- - - - -



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Section 2: ATA 25  
Eqpt & Furnishings

**25-15 MOVED (Heating Blankets)**

Interval	Installed	Required	Procedure

Moved to Item 21-41 in Revision 33.

-----

**25-16 Lower Cargo Compartment Lining Panels and Floor Panels**

Interval	Installed	Required	Procedure
C	<b>54</b>	<b>0</b>	(M) (O)

May be damaged or missing provided procedures are established and used to ensure associated 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.

**NOTE:** MAB approved in Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

-----

**MAINTENANCE (M)**

Ensure that any items in the associated cargo compartment are properly secured to prevent damage to airplane system components exposed by the damaged or missing lining panel(s).

**OPERATIONS (O)**

Verify that the associated compartment remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

**Note:** MAB approved in Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

25-17        **(MOVED) Emergency Medical Equipment (Includes STC  
ST10238SC)**

Interval	Installed	Required	Procedure

Refer to table of contents for MAB emergency medical equipment MEL items (end of ATA 25).

-----

**25-18 Flotation Equipment (Crew and Passengers)****25-18-01 Crew, Infant and Passenger Life Jackets**

Interval	Installed	Required	Procedure
C	Refer Note 1	Refer Note 2	

NOTE 1: Refer to LEEL for number of crew, infant and passenger life jackets installed.

NOTE 2: One life jacket required for each crew and passenger on board. For infants, one infant life jacket required for each infant onboard.

**25-18 Flotation Equipment (Crew and Passengers)****25-18-02 Spare Life Jackets**

Interval	Installed	Required	Procedure
C	8	0	

One or more may be missing.

**25-18 Flotation Equipment (Crew and Passengers)****25-18-03 Life Rafts (-800)****25-18-03A Extended Overwater Flights Prohibited**

Interval	Installed	Required	Procedure
C	4	0	(M)

May be inoperative provided extended overwater flights is not conducted.

NOTE 1: For extended overwater flights (more than 120 minutes at cruising speed or 400NM, whichever is the lesser, from the nearest airport at which an emergency landing can be made), 4 life rafts are required.

NOTE 2: Consider also 25-18-03B where aircraft is qualified for extended overwater flights.

**MAINTENANCE (M)**

Advise MOC/FDC/OCC that the aircraft is not qualified for extended overwater flights.

**25-18 Flotation Equipment (Crew and Passengers)****25-18-03 Life Rafts (-800)****25-18-03B Number of Passengers Limited**

Interval	Installed	Required	Procedure
C	4	REFER NOTE 2	(M)

May be inoperative provided number of souls on board (including crew) is equal to/below the total rated capacity of the remaining life rafts (refer table below).



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NOTE 1: Consider also 25-18-03A where number of passenger is not limited.

NOTE 2: For B737-800, refer Table 1 (extracted from Zodiac CMM) shown below for the rated capacity of the life rafts.

No. of required life raft	Total rated capacity of required life rafts	
	FFF, MX-series, MLM onwards (with P/N 63800-103)	MLF-MLL (with P/N 64356-101)
4 (2 fwd 2 aft)	207	252
3 (1 fwd 2 aft)	138	168
2 (1 fwd 1 aft)	69	84

TABLE 1: Total rated capacity of required life rafts

**MAINTENANCE (M)**

Position the operative life rafts as per Table 1 above. Advise MOC/FDC/OCC that the number of souls on board is limited as per Table 1 above. Revenue flight might be affected.

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**25-19 MOVED (Underseat Baggage Restraining Bars)**

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Interval	Installed	Required	Procedure

Moved to Item 25-06 in Revision 39.

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- 
- 25-20            Exterior Lavatory Door Ashtrays**  
**25-20-01        Airplanes With Multiple Exterior Lavatory Door Ashtrays Installed**  
**25-20-01A      Fifty Percent or Less Missing or Inoperative**

Interval	Installed	Required	Procedure
A	3	2	

Up to and including fifty percent may be missing or inoperative for 10 days.

NOTE 1: Crew lavatories are included in the total aircraft exterior lavatory door ashtray count.

NOTE 2: One ashtray may serve more than one lavatory door if the ashtray can be seen readily from the cabin side of each lavatory served.

-----  
**PLACARD**

Near affected ashtray - DO NOT USE

- 
- 25-20            Exterior Lavatory Door Ashtrays**  
**25-20-01        Airplanes With Multiple Exterior Lavatory Door Ashtrays Installed**  
**25-20-01B      More than Fifty Percent Missing or Inoperative**

Interval	Installed	Required	Procedure
A	3	0	

More than fifty percent may be missing or inoperative for 3 days.

NOTE 1: Crew lavatories are included in the total aircraft exterior lavatory door ashtray count.

NOTE 2: One ashtray may serve more than one lavatory door if the ashtray can be seen readily from the cabin side of each lavatory served.

-----  
**PLACARD**

Near affected ashtray - DO NOT USE

- 
- 25-20            Exterior Lavatory Door Ashtrays**  
**25-20-02        Airplanes With Only One Exterior Lavatory Door Ashtrays Installed**

Interval	Installed	Required	Procedure
A	1	0	

May be missing provided it is replaced within 3 days.

-----  
**PLACARD**

Near affected ashtray - DO NOT USE

**25-21            Flight Crew Seats  
 25-21-01        Recline Mechanism**

Interval	Installed	Required	Procedure
A	2	0	(M)

May be inoperative provided:

- a. Seat is secured in a position acceptable to affected crewmember.
  - b. Repairs are made within two flight days.
- 

**MAINTENANCE (M)**
*For -800:*

Secure seat in an acceptable position for the affected crewmember.(AMM 25-00-00/901)

*For All Models:*

1. Perform a functional test to verify the seat back cannot be moved
2. Verify that full travel of the seat on its track is not impaired.

**25-21            Flight Crew Seats  
 25-21-02        Vertical Adjustment**

Interval	Installed	Required	Procedure
A	2	0	(M)

May be inoperative provided.

- a. Seat is secured in a position acceptable to affected crewmember.
  - b. Repairs are made within two flight days.
- 

**MAINTENANCE (M)**
*For -800:*

Secure seat in an acceptable position for the affected crewmember.(AMM 25-00-00/901)

*For All Models:*

1. Perform a functional test to verify the seat cannot be moved in a vertical direction.
2. If necessary, secure the seat in a fixed vertical position by disconnecting the vertical adjustment operating cable or removing the vertical adjustment pushrod mechanism, as appropriate.

**25-21            Flight Crew Seats**

**25-21-03        Armrests**

Interval	Installed	Required	Procedure
B	4	0	(M)

May be inoperative in up position or removed provided seat is acceptable to affected crewmember.

**MAINTENANCE (M)**

For -800:

Secure an inoperative armrest in the up position or remove from seat.(AMM 25-00-00/901)

**25-21            Flight Crew Seats**

**25-21-04        Lumbar/Thigh Supports**

Interval	Installed	Required	Procedure
C	4	0	

May be inoperative provided seat is acceptable to affected crewmember.

**25-21            Flight Crew Seats**

**25-21-05        Headrests**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative or missing provided seat is acceptable to affected crewmember.

**25-22 Galley/Lavatory Waste Receptacle Access Doors/Covers**
**25-22-01 Galley Waste Receptacle Access Doors/Covers**

Interval	Installed	Required	Procedure
C	3	0	(M) (O)

May be inoperative provided:

- a. Associated container is empty.
  - b. Container access is secured to prevent waste introduction into compartment.
  - c. Procedures are established to ensure that sufficient galley/lavatory waste receptacles are available to accommodate all waste that may be generated on flight.
- - - - -

**MAINTENANCE (M)**
*For -800:*

Secure the inoperative access door/cover in a manner that will prevent waste from being deposited in the compartment (AMM 25-00-00/901).

**OPERATIONS (O)**

Ensure that sufficient galley/lavatory waste receptacles are available to accommodate all waste that may be generated on the flight.

**25-22 Galley/Lavatory Waste Receptacle Access Doors/Covers**
**25-22-02 Lavatory Waste Receptacle Access Doors/Covers**

Interval	Installed	Required	Procedure
C	3	0	(M) (O)

May be inoperative provided:

- a. Associated container is empty.
- b. Container access is secured to prevent waste introduction into compartment.
- c. Lavatory is used only by crewmembers.
- d. Associated lavatory entrance door is locked closed and placarded:

INOPERATIVE - DO NOT ENTER.

NOTE: These provisions are not intended to prohibit lavatory use or inspection by crewmembers.

- - - - -

**MAINTENANCE (M)**
*For -800:*

1. Secure the inoperative access door/cover in a manner that will prevent waste from being deposited in the compartment.
2. Close and lock the lavatory door and placard: INOPERATIVE – DO NOT ENTER (Placard Part Number: 010A3-11-5431-1 or equivalent).
3. Raise NTC to read “LAVATORY X IS OUT OF ORDER. ENSURE DOOR IS LOCKED AT ALL TIMES”, where “X” indicates the position or identification of the

lavatory. Delete NTC after repairs are accomplished.

## **OPERATIONS (O)**

Ensure that sufficient galley/lavatory waste receptacles are available to accommodate all waste that may be generated on the flight.

**25-24 Storage Bins/Cabin, Galley and Lavatory Storage**
**Compartments / Closets**
**25-24A Secured Closed**

Interval	Installed	Required	Procedure
C	-	-	(M)

May be inoperative provided:

- a. Procedures are established to secure the affected bin, compartment or closet in the closed position.
- b. Affected bin, compartment or closet is prominently placarded DO NOT USE.
- c. Any emergency equipment located in affected bin, compartment or closet is considered inoperative.
- d. Affected bin, compartment or closet is not used for storage of any item(s) except for those permanently affixed.

NOTE: For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative.

-----

**MAINTENANCE (M)**

Secure the bin, compartment or closet closed using appropriate procedures.

**25-24 Storage Bins/Cabin, Galley and Lavatory Storage**
**Compartments / Closets**
**25-24B Door Removed or Retractable Door Secured Open**

Interval	Installed	Required	Procedure
C	-	-	(M) (O)

May be inoperative provided:

- a. For non-retractable doors, affected door is removed.
- b. For retractable doors, affected door is removed or secured in the retracted (fully open) position.
- c. Affected bin, compartment or closet is not used for storage of any items, except those permanently affixed.
- d. Affected bin, compartment or closet is prominently placarded DO NOT USE.
- e. Procedures are established and used to alert crew members and passengers of inoperative bins, compartments or closets.
- f. Passengers are briefed that affected bin, compartment or closet is not used.

NOTE 1: For overhead bins, if no partitions are installed, entire overhead bin is considered inoperative.

NOTE 2: Any emergency equipment located in the affected bin, compartment or closet (permanently affixed) is available for use.

-----

**MAINTENANCE (M)**

Remove door from associated bin, compartment or closet.

**OPERATIONS (O)**

Crewmembers are advised of inoperative bin, compartment or closet. Passengers are briefed that associated bin, compartment or closet is not used.

---

**25-24           Storage Bins/Cabin, Galley and Lavatory Storage**

**Compartments / Closets**

**25-24-01       Multi Latch/Quarter-Turn Lug Installations**

Interval	Installed	Required	Procedure
C	-	-	

One latch/lug per compartment may be inoperative provided:

- a. Remaining latch(es)/lug(s) on affected compartments operate normally.
  - b. If affected compartment is used for a galley cart, cart remains empty.
-



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**25-31 Resuscitator**

Interval	Installed	Required	Procedure
C	1	0	

May be missing.

**25-32 MOVED (Life Jackets)**

Interval	Installed	Required	Procedure

Refer to MEL 25-18 for life jackets.

**25-33 Child/Extension Seat Belts****25-33-01 Child Seat Belts**

Interval	Installed	Required	Procedure
C	Refer Note	-	

One or more may be missing.

NOTE: Refer to LEEL for number of child seat belts installed in the aircraft.

-----

**25-33 Child/Extension Seat Belts****25-33-02 Extension Seat Belts**

Interval	Installed	Required	Procedure
C	Refer Note	-	

One or more may be missing.

NOTE: Refer to LEEL for number of child seat belts installed in the aircraft.

-----

**25-34 Physician Kit (Emergency Medical Kit)**

Interval	Installed	Required	Procedure
A	1	0	(M) (O)

May be incomplete, missing, or inoperative provided that:

- a. EMK 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.
- c. Flight routes permit a landing within one hour at a suitable airport where medical assistance is available.

**OPERATIONS (O)**

Each inoperative or incomplete EMK must be sealed and clearly labelled to identify the missing or inoperative components, as appropriate.

**MAINTENANCE (M)**

1. (m) Ensure that MOC/FDC/OCC is informed about this MEL item.

**25-40      Forward Lavatory**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided:

- a. Flight is limited to 1 hour block time.
- b. Forward lavatory door is locked closed and placarded, "INOPERATIVE – DO NOT ENTER".

NOTE: Refer to MEL 38-02 for Lavatory Waste Systems.

-----

**MAINTENANCE (M)**

For an inoperative forward lavatory:

1. Close and lock the forward lavatory door and placard: INOPERATIVE – DO NOT ENTER (Placard Part Number: 010A3-11-5431-1 or equivalent).
2. Raise NTC to read "FORWARD LAVATORY IS OUT OF ORDER. ENSURE DOOR IS LOCKED AT ALL TIMES". Delete the NTC after repairs are accomplished.

**25-60 MH Evacuation Slide**

Interval	Installed	Required	Procedure
	-	-	

All must be operative.

NOTE: Refer to Aircraft Maintenance Manual (AMM) for more information.

For -800: AMM TASK 25-66-01-200-801

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**25-61 Fireproof Gloves**

Interval	Installed	Required	Procedure
C	1	0	

May be missing.

**25-62 MOVED (MH PBE Smoke Hood)**

Interval	Installed	Required	Procedure

Refer to MEL item 35-06.

- - - - -

**25-63 Restraint pack (“Plastic handcuffs”)**

Interval	Installed	Required	Procedure
C	1	0	

Except for Australian destinations, may be missing

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**25-64              Automated External Defibrillator (AED)**

Interval	Installed	Required	Procedure
D	1	0	No

May be inoperative or missing provided it must be reported immediately to Maintenance Operations Control (MOC) for replacement at the earliest possible opportunity.

-----

**25-80            (-800) MH First Aid Kits**  
**25-80-01        One missing or incomplete**

Interval	Installed	Required	Procedure
<b>C</b>	<b>3</b>	<b>2</b>	<b>(M)</b>

One may be missing or incomplete.

**Note:**

1. A first aid kit that is expired is considered unserviceable for the purposes of this MEL item. If the seal found broken the first aid kits can still be considered serviceable provided it contains the minimum requirements as per paragraph 4 below.
2. ICAO Attachment B to Chapter 6.2.2a requires one first aid kit per 100 passengers, up to a maximum of six (sufficient for any number of passengers exceeding 500).
3. For MAB B737-800 with passengers less than 200, two first aid kits will normally be enough for a fully-seated flight (catering for up to 200 passengers). However due to infants, the actual number of passengers could exceed 200 at times, thus sometimes requiring a third first aid kit.
4. For the list of required items, refer to list attached to the first aid kit box. The minimum contents required are:
  - i. roller bandages, triangular bandages, adhesive plaster, absorbent gauze, cotton wool, (or wound dressings in place of the absorbent gauze and cotton wool), burn dressings, safety pins
  - ii. haemostatic, bandages or tourniquets, scissors
  - iii. antiseptic, analgesic and stimulant drugs
  - iv. splints
  - v. handbook on first aid

**MAINTENANCE (M)**

Inform MOC to arrange for rectification at earliest opportunity.

**25-80 (-800) MH First Aid Kits****25-80-02 More than one missing or incomplete; sufficient items available in Dressing Kit to meet requirement for 2 first aid kits**

Interval	Installed	Required	Procedure
C	3	2	(M) [R]

More than one may be missing or incomplete provided that Dressing Kit contents are checked before each flight so that sufficient items are available to meet the requirement for 2 first aid kits. There must be one equivalent item in Dressing Kit for each First Aid Kit item that is missing.

**Note:**

1. Dressing Kit (previously named as Daily Kit) is uplifted and replenished by Catering ex-KUL. It is considered part of the catering load, but not part of the aircraft's equipment (not listed in Emergency Equipment List). Some of its contents may be used for first aid kit equipment.
  2. The Dressing Kit items do not need to be repositioned into the affected first aid kits.
- - - - -

**MAINTENANCE (M)**

1. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**25-80**
**(-800) MH First Aid Kits**
**25-80-03**
**More than one missing or incomplete; replacement items available to meet requirement for 2 first aid kits**

Interval	Installed	Required	Procedure
<b>C</b>	<b>3</b>	<b>2</b>	<b>(M)</b>

More than one may be missing or incomplete provided replacement items are available to meet the requirement for 2 serviceable first aid kits.

**Note:**

1. For the list of required items, refer to list attached to the first aid kit box.
2. The minimum contents required are:
  - i. roller bandages, triangular bandages, adhesive plaster, absorbent gauze, cotton wool, (or wound dressings in place of the absorbent gauze and cotton wool), burn dressings, safety pins
  - ii. haemostatic, bandages or tourniquets, scissors
  - iii. antiseptic, analgesic and stimulant drugs
  - iv. splints
  - v. handbook on first aid
3. Replacement items need not be exactly identical to the missing items, but must be equivalent or have similar function.
4. Replacement items may be sourced commercially (eg. bought at reputable pharmacy). Although some items are also available in physician kit, it is not allowed to rob from physician kit for security reasons (the physician kit contains controlled substances and drugs). Also, the type of items in physician kit may differ in terms of dosage or intended usage, and only meant to be administered by qualified physician.

**MAINTENANCE (M)**

1. Replacement medical items must be obtained to constitute 2 serviceable first aid kits.
2. Replacement items need not be stored together in the affected first aid kit box, or at the same position. However they should still be placed nearby or at a convenient location known to the crew. Annotate this location in the tech log entry.
3. Inform MOC to arrange for rectification at earliest opportunity.

- 
- 25-80 (-800) MH First Aid Kits**  
**25-80-04 More than one missing or incomplete; Unable to meet requirement for 2 first aid kits**
- 

Interval	Installed	Required	Procedure
C	3	1	(M)

Except ex-KUL, more than one may be missing or incomplete provided the number of passengers (including infants) is limited to 100 per serviceable first aid kit. For flights with no passengers (eg. flight tests, training flights or positioning flights), one first aid kit must be serviceable.

Note:

1. The number of passengers (including infants) must be limited by the number of first aid kits (or equivalent) available.
  2. The number of first aid kits (or equivalents) available may be increased by considering items also available in Dressing Kit (refer MEL 25-80-02 notes), and/or by obtaining replacement items (refer MEL 25-80-03 notes). However, if this is not enough to meet the requirement for 2 first aid kits, then the number of passengers must still be limited accordingly.
- 

**MAINTENANCE (M)**

1. Ensure that MOC, OCC and FDC are informed how many first aid kits (or equivalents) are available, and how many passengers (including infants) are allowed.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "MAX PAX LIMITED TO NO MORE THAN (number of remaining first aid kits x 100) PERSONS, INCLUDING INFANTS."
3. MOC to advise FDC and OCC of this restriction on daily basis.



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**25-90            Medical Communicable Disease Kits (MCD)**  
**25-90-01        -800**

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Interval	Installed	Required	Procedure
C	2	0	

May be unserviceable.

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26-19-06 EXT Lights (FWD and AFT) (Boeing installed system only)  
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**26-20 MOVED (Lower Cargo Compartment Fire Extinguisher System)**



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**26-01      Engine and APU Fire Extinguisher Discharge Lights**

Interval	Installed	Required	Procedure
C	3	0	

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**26-02            Engine Overheat and Fire Detection Systems**  
**26-02-02        Dual Loop**

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Interval	Installed	Required	Procedure
C	4	2	(O) (E)

Except for EDTO operations beyond 120 minutes, one loop (A or B) per engine may be inoperative.

---

**OPERATIONS (O)**

Do the Supplementary Procedure - Fire Protection "Fire and Overheat System Test with an Inoperative Loop" (Refer to the Flight Crew Operations Manual).

NOTE 1: Dispatch is not allowed if both loops A and B are inoperative on one engine.

NOTE 2: When performing the Flight Crew Operations Manual Supplementary Procedures - Engines, APU "Battery Start" procedure, the fire warning bell may not sound and the master FIRE WARN lights may not illuminate.

**26-03      Portable Fire Extinguishers**
**26-03-01      Flight Deck**

Interval	Installed	Required	Procedure
	1	1	(M)

Minimum 1 serviceable fire extinguisher in the cockpit.

**MAINTENANCE (M)**

Tag the inoperative fire extinguisher as INOP, and remove from aircraft or put it in a place (possibly in a bag) where it will not be mistaken for a serviceable unit, until it can be removed from the airplane.

**26-03      Portable Fire Extinguishers**
**26-03-02      Cabin**

Interval	Installed	Required	Procedure
C	Refer to LEEL	3	(M)

Minimum 3 serviceable fire extinguishers in the cabin with at least one at each pair of doors.

**MAINTENANCE (M)**

1. Tag the inoperative fire extinguisher as INOP, and remove from aircraft or put it in a place (possibly in a bag) where it will not be mistaken for a serviceable unit, until it can be removed from the airplane.
2. Ensure required distribution of serviceable extinguishers is maintained throughout the airplane.

**26-04            Wheel Well Fire Detection System  
26-04B          BTMS Not Installed**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided an accepted procedure is used to ensure brakes are cool before engine start.

NOTE 1: Avoid the possibility of retracting an overheated wheel by leaving landing gear extended for 10 minutes after takeoff.

NOTE 2 : In case of engine failure after V1, landing gear should be retracted until takeoff obstacles are cleared.

-----

**MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

For -800:

Deactivate the wheel well fire detection system and verify brakes are cool prior to engine start. (AMM 26-00-00-901)

1. Perform a CODC "LOCAL TEST".
2. If the fault code or fault message from the CODC "LOCAL TEST" is other than "84" or "MWW LOOP A FIRE", perform the following:
  - A. Remove the two light bulbs from the WHEEL WELL light on the P8 panel.
  - B. Disconnect the fire bell:
    - 1) Remove Flight Control Computer B to get access to the wiring for the fire bell.
    - 2) Disconnect the wires from D742, pin 16 and pin 25 on the E1-4 shelf.
    - 3) Cap and stow the wires.
    - 4) Install Flight Control Computer B.
3. If the fault code or fault message from the CODC "LOCAL TEST" is "84" or "MWW LOOP A FIRE", the wheel well fire alarm function is the source of the fault. Perform the following:
  - A. Disconnect the connectors D840 and D842 (if installed) on both sides of the M270 detection element.
  - B. Perform a second CODC "LOCAL TEST".
  - C. If the second CODC "LOCAL TEST" presents any fault codes, perform the following:
    - 1) Reconnect either the terminal lugs or connectors D840 and D842 (if installed) on both sides of the M270 detection element.
    - 2) Remove the two light bulbs from the WHEEL WELL light on the P8 panel.
    - 3) Disconnect the fire bell:

- a. Remove Flight Control Computer B to get access to the wiring for the fire bell.
  - b. Disconnect the wires from D742, pin 16 and pin 25 on the E1-4 shelf.
  - c. Cap and stow the wires.
  - d. Install Flight Control Computer B.
- D. If the second CODC "LOCAL TEST" shows no faults, perform the following:
- 1) Stow the wiring and terminal lugs or going into connector D840 and D842 near the detector element.
  - 2) Perform the Overheat/Fire Warning System Test per AMM 26-18-00. All tests should pass except for the wheel well fire function with the disabled element.
4. Just prior to engine start, check that brakes are cool per accepted procedure.

**OPERATIONS (O)**

1. After takeoff, leave the landing gear extended for 10 minutes unless engine inoperative climb performance on the landing gear is a consideration (see MEL Note).
2. To account for delayed gear retraction, increase trip fuel and time by 800 lb (363 kg) and 2 minutes respectively.

**26-06 APU Fire Shutoff System**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative provided APU is not used.

-----

**MAINTENANCE (M)**

Inform MOC, OCC and FDC that APU cannot be used (may affect dispatch to or from certain stations), and EDTO (if applicable) is not allowed.

**OPERATIONS (O)**

1. Dispatch is not allowed if the APU is required by other procedures.
2. APU is not used
3. Deleted.

**26-07 APU Fire Extinguisher System**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative provided APU is not used.

- - - - -

**MAINTENANCE (M)**

Inform MOC, OCC and FDC that APU cannot be used (may affect dispatch to or from certain stations), and EDTO (if applicable) is not allowed.

**OPERATIONS (O)**

1. Dispatch is not allowed if the APU is required by other procedures.
2. APU is not used.
3. Deleted.

**26-08 APU Fire Detection System****26-08-01 Single and Dual Loop**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative provided APU is not used.

- - - - -

**MAINTENANCE (M)**

Inform MOC, OCC and FDC that APU cannot be used (may affect dispatch to or from certain stations), and EDTO (if applicable) is not allowed.

**MAINTENANCE NOTE**For -800:

To prevent nuisance/false warnings, the FIRE PROTECTION DETECTION APU circuit breaker can be opened and collared. With this circuit breaker open, the MASTER CAUTION lights and the OVHT/DET system annunciator light do not illuminate during the Fault/Inop test. The APU DET INOP light will remain illuminated and the MASTER CAUTION lights and the OVHT/DET system annunciator light will illuminate during a system annunciator panel recall.

**OPERATIONS (O)**

1. Dispatch is not allowed if the APU is required by other procedures.
2. APU must not be started.
3. Deleted

NOTE: When performing the Flight Crew Operations Manual Supplementary Procedures - Engines, APU "Battery Start" procedure, the fire warning bell may not sound and the master FIRE WARN lights may not illuminate.

**26-08 APU Fire Detection System****26-08-02 APU DET INOP Light**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative extinguished provided:

- a. APU fire detection system operates normally.
  - b. A fire warning test is performed before each APU start.
- - - - -

**OPERATIONS (O)**

NOTE: If the APU DET INOP light does not illuminate but the APU Fire Warning switch illuminates during OVERHEAT/FIRE test, the APU fire detection system is operating normally. The APU can be used if the OVERHEAT/FIRE test is performed before each APU start.

**26-08            APU Fire Detection System**  
**26-08-03        Dual Loop**

Interval	Installed	Required	Procedure
C	2	1	(O) (E)

Except for EDTO operations beyond 120 minutes, one loop (A or B) may be inoperative.

-----

**MAINTENANCE NOTE**
*For -800:*

To prevent nuisance/false warnings, the FIRE PROTECTION DETECTION APU circuit breaker can be opened and collared. With this circuit breaker open, the MASTER CAUTION Lights and the OVHT/DET system annunciator light do not illuminate during the Fault/Inop test. The APU DET INOP light will remain illuminated and the MASTER CAUTION lights and the OVHT/DET system annunciator light will illuminate during a system annunciator panel recall.

**OPERATIONS (O)**

Do the Supplementary Procedure - Fire Protection "Fire and Overheat System Test with an Inoperative Loop" (Refer to the Flight Crew Operations Manual).

NOTE 1: If both loops A and B are inoperative, see MEL item 26-08-01.

NOTE 2: When performing the Flight Crew Operations Manual Supplementary Procedures - Engines, APU "Battery Start" procedure, the fire warning bell may not sound and the master FIRE WARN lights may not illuminate.

**26-08            APU Fire Detection System**  
**26-08-04        External Warning Horn/Warning Light**

Interval	Installed	Required	Procedure
C	1	0	(M) (O)

May be inoperative for ground operation provided flight deck APU Overheat/Fire Protection Panel is continuously monitored.

-----

**MAINTENANCE (M) and OPERATIONS (O)**

When the APU is used on ground, ensure that the flight deck APU Overheat/Fire Protection Panel is continuously monitored.

**26-09            Engine/APU Fire Extinguisher Test System (EXT TEST)  
(Squib Test)**

Interval	Installed	Required	Procedure
C	3	0	(M) [R]

May be inoperative provided:

- a. Failure is verified to be in squib test circuit.
  - b. Squib circuit is verified to operate normally once each flight day.
- 

**MAINTENANCE (M)****For -800:**

Prepare the airplane for flight with the squib test system inoperative (AMM 26-00-00/901):

**For All Models:**

**WARNING: THE P6-2 CIRCUIT BREAKER PANEL CONTAINS HIGH VOLTAGE/CURRENTS THAT CAN CAUSE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT. TO PREVENT INJURY, RESTRICT PERSONNEL FROM FIRE BOTTLE AREA WHILE PERFORMING TEST.**

**For -800:**

1. Build a squib test lamp with pigtail leads that end in pin contacts. Use only a 28 Volt, 40 milliamp lamp in a suitable holder.
2. Verify that the squib circuit is operative:
  - A. For Engines:
    - 1) Open all four engine fire extinguisher circuit breakers on the P6-2 Circuit Breaker Panel.  
NOTE: Refer to the table below for the appropriate circuit breakers.
    - 2) Gain access to the P6-2 Circuit Breaker Panel.
    - 3) Connect the test lamp across the terminals of the appropriate circuit breaker for the inoperative squib test circuit.
    - 4) Push the override switch to manually unlock the Engine Fire Warning switch.
    - 5) Pull the Engine Fire Warning switch up.
    - 6) Rotate the Engine Fire Warning switch (left or right):
      - a. When the test lamp comes on the squib test circuit is intact.
    - 7) Rotate the Engine Fire Warning switch back to the center position and push it down.
    - 8) Remove the test lamp from the circuit breaker.
    - 9) Close the circuit breakers.



**BOEING B737-800  
MINIMUM EQUIPMENT LIST  
For -300/-400/-500/-600/-700/-800/-900 with Dual Outlet Dual Cartridge Bottle**

Section 2: ATA 26  
Fire Protection

Bottle	Squib No.	Squib Plug No.	C/B Open and Test Lamp Connections
Left	1	D582, Pin 4	Across C296 Left Ext Bottle
Left	1	D582, Pin 6	Across C1021 Left Ext Bottle
Left	2	D1322, Pin 4	Across C296 Left Ext Bottle
Left	2	D1322, Pin 6	Across C1021 Left Ext Bottle
Right	1	D584, Pin 4	Across C297 Right Ext Bottle
Right	1	D584, Pin 6	Across C1022 Right Ext Bottle
Right	2	D1324, Pin 4	Across C297 Right Ext Bottle
Right	2	D1324, Pin 6	Across C1022 Right Ext Bottle

**B. For APU:**

- 1) Open the APU fire extinguisher circuit breaker on the P6-2 Circuit Breaker Panel.
  - 2) Gain access to the P6-2 Circuit Breaker Panel.
  - 3) Connect the test lamp across the terminals of the circuit breaker.
  - 4) Push the override switch to manually unlock the APU Fire Warning switch.
  - 5) Pull the APU Fire Warning switch up.
  - 6) Rotate the APU Fire Warning switch (left or right):
    - a. When the test lamp comes on the squib test circuit is intact.
  - 7) Rotate the APU Fire Warning switch back to the center position and push it down.
  - 8) Remove the test lamp from the circuit breaker.
  - 9) Close the circuit breaker.
3. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

---

**26-09      Engine/APU Fire Extinguisher Test System (EXT TEST)  
(Squib Test)**

**26-09-01    APU Fire Extinguisher Squib Test Circuits (EXT TEST) (-800)**

Interval	Installed	Required	Procedure
C	2	1	(O)

May be inoperative provided remaining APU squib test circuit is verified to operate normally once each flight day.

**OPERATIONS (O)**

1. Reference the following Flight Crew Operations Manual Procedures:
  - A. Normal Procedures - Amplified Procedures - Preflight Procedure - First Officer.

- B. Supplementary Procedures - Electrical Power Up.
2. Verify remaining APU squib test circuit operates normally once each flight day in the "EXTINGUISHER TEST Switch - Check":
- EXT TEST switch in position 1 or 2, APU green extinguisher test light illuminates.
  - Release EXT TEST switch, APU green extinguisher test light extinguishes.

---

**26-09      Engine/APU Fire Extinguisher Test System (EXT TEST)  
(Squib Test)****26-09-02    APU Squib Light**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative provided APU is not used.

---

**MAINTENANCE (M)**

Inform MOC, OCC and FDC that APU cannot be used (may affect dispatch to or from certain stations), and EDTO (if applicable) is not allowed.

**OPERATIONS (O)**

- Dispatch is not allowed if the APU is required by other procedures.
- APU is not used.
- Deleted.

**26-10           Fire Warning Bell**
**26-10-01       Bell Cutout Switch (Overheat/Fire Protection Panel)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- a. Bell cutout function of both Master Fire Warning lights operates normally.
  - b. Fire Warning Bell operates normally.
- 

**26-10           Fire Warning Bell**
**26-10-02       Bell Cutout Function of Master Fire Warning Light**

Interval	Installed	Required	Procedure
C	2	1	

May be inoperative provided:

- a. Bell cutout switch operates normally.
  - b. Fire Warning Bell operates normally.
-

**26-11            DELETED (Master Fire Warning Lights)**

Interval	Installed	Required	Procedure

Deleted prior to Revision 27.

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**26-12                    Wing-Body Overheat Detector System (Left)**  
**26-12-01                -800**


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Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E] [P]

Except for EDTO operations, may be inoperative provided:

- a. Right pack and engine bleed is used for pressurization only.
  - b. Use of APU is prohibited except for engine start.
  - c. Isolation valve and left engine bleed valve remain closed for all operations except engine start.
  - d. Airplane is not operated in known or forecast icing conditions.
  - e. Flight altitude remains at or below FL 250.
- 

### **MAINTENANCE (M)**

Inform MOC, OCC and FDC that APU can only be used for engine start and not for pneumatic air supply or electrical power (may affect operations at some stations), and EDTO (if applicable) is not allowed.

Advise MOC/FDC/OCC that performance is affected.

### **MAINTENANCE NOTE**

Refer to MEL item 21-01(M) procedure, as applicable, for information when the left pack is not used.

### **OPERATIONS (O)**

1. Refer to MEL Item 21-01 (O) procedure for information when the left pack is not used.
2. Except for engine start, do not use the APU for pneumatic air supply and/or electrical power.
3. After engine start, make sure that:
  - A. ISOLATION VALVE switch is set to CLOSE
  - B. APU switch is set to OFF
  - C. Engine No. 1 BLEED air switch is set to OFF.
  - D. L PACK switch is set to OFF
  - E. R PACK set as desired.
4. Do not dispatch into known icing or forecast icing conditions.

**26-13            Wing-Body Overheat Detector System (Right)**  
**26-13-01        -800**

Interval	Installed	Required	Procedure
C	1	0	(O) [E] [P]

Except for EDTO operations, may be inoperative provided:

- a. Left pack and left engine or APU bleed air is used for pressurization only, not anti-ice (however, APU bleed may still be used for engine start).
  - b. Isolation valve and right engine bleed valve remain closed for all operations except engine start.
  - c. Airplane is not operated in known or forecast icing conditions.
  - d. Flight altitude remains at or below FL 250.
- - - - -

**MAINTENANCE NOTE**

Refer to MEL item 21-01(M) procedure, as applicable, for information when the right pack is not used.

Advise MOC/FDC/OCC that performance is affected.

**OPERATIONS (O)**

1. Refer to MEL Item 21-01(O) procedure for information when the right pack is not used.
2. After engine start, make sure that:
  - A. ISOLATION VALVE switch is set to CLOSE.
  - B. Engine No. 2 BLEED air switch is set to OFF.
  - C. R PACK switch is set to OFF
  - D. L PACK as desired.
3. Do not dispatch into known icing or forecast icing conditions.

**For -800:**

4. Increased air flow will occur when flaps are extended (takeoff and landing) if the APU is used instead of engine bleed to supply bleed air to the left pack.
5. With the L PACK switch in AUTO, the pack operates in the high flow mode.
6. Do not set the L PACK to HIGH for takeoff and landing with the engine bleed on.
7. Do not use APU bleed air at altitudes above 17,000 feet.

- 26-15            Lavatory Fire Extinguisher Systems**  
**26-15-01        Passenger Configuration**  
**26-15-01A      Lavatory Smoke Detection System Operates Normally**

Interval	Installed	Required	Procedure
C	3	-	

For each lavatory, lavatory fire extinguisher system may be inoperative provided lavatory smoke detector system operates normally.

NOTE: A lavatory fire extinguisher system is installed in each lavatory.

- 26-15            Lavatory Fire Extinguisher Systems**  
**26-15-01        Passenger Configuration**  
**26-15-01B      Lavatory Smoke Detection System Inoperative**

Interval	Installed	Required	Procedure
C	3	-	(M) (O)

For each lavatory, lavatory fire extinguisher system may be inoperative provided:

- Lavatory waste receptacle remains empty.
- Associated lavatory door is locked closed and placarded, "INOPERATIVE - DO NOT ENTER".
- Lavatory is used only by crewmembers.

NOTE 1: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

NOTE 2: A lavatory fire extinguisher system is installed in each lavatory.

### **MAINTENANCE (M)**

For an inoperative lavatory smoke detection system:

- Empty the waste receptacles.
- Close and lock the lavatory door and placard: INOPERATIVE – DO NOT ENTER (Placard Part Number: 010A3-11-5431-1 or equivalent).
- Raise NTC to read "LAVATORY X IS OUT OF ORDER. ENSURE DOOR IS LOCKED AT ALL TIMES", where "X" indicates the position or identification of the lavatory. Delete NTC after repairs are accomplished.

### **OPERATIONS (O)**

Make sure that the associated lavatory is kept locked and is not entered except for use or inspection by crew members.

---

**26-16            Lavatory Smoke Detection Systems**  
**26-16-01        Passenger Configuration**

Interval	Installed	Required	Procedure
C	3	0	(M) (O)

For each lavatory, lavatory smoke detection system may be inoperative provided:

- a. Lavatory waste receptacle remains empty.
- b. Associated lavatory door is locked closed and placarded, "INOPERATIVE - DO NOT ENTER".
- c. Lavatory is used only by crewmembers.

NOTE 1: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

NOTE 2: A lavatory fire extinguisher system is installed in each lavatory.

---

**MAINTENANCE (M)**

For an inoperative lavatory smoke detection system:

1. Empty the waste receptacles.
2. Close and lock the lavatory door and placard: INOPERATIVE – DO NOT ENTER (Placard Part Number: 010A3-11-5431-1 or equivalent).
3. Raise NTC to read "LAVATORY X IS OUT OF ORDER. ENSURE DOOR IS LOCKED AT ALL TIMES", where "X" indicates the position or identification of the lavatory. Delete NTC after repairs are accomplished.

**OPERATIONS (O)**

Make sure that the associated lavatory is kept locked and is not entered except for use or inspection by crew members.

---

**26-16            Lavatory Smoke Detection Systems**  
**26-16-03        Lavatory Smoke Detector SELF TEST Switch**

Interval	Installed	Required	Procedure
C	3	0	(M)

May be inoperative provided associated lavatory smoke detector is verified to operate normally.

NOTE: A self test switch is installed on each lavatory smoke detection system.

---

**MAINTENANCE (M)**

For the associated smoke detector, do the lavatory smoke detection system test (AMM 26-14-00/501).



BOEING B737-800  
MINIMUM EQUIPMENT LIST

Section 2: ATA 26  
Fire Protection

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Aug 10, 2020

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2.26-16.2  
Internal Use Only

**26-18            Wing-Body Overheat Test System**  
**26-18-01        Flight Deck Test Feature**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided system integrity is verified by an acceptable procedure once each flight day.

- - - - -

**MAINTENANCE (M)****For -800**

Verify the integrity of the Wing-Body Overheat Test System (AMM 26-00-00/901):

**For All Models:**

1. Apply heat from an appropriate heat source to an operable detector element in the left wing-body overheat detection system and in the right wing-body overheat detection system. The substitute test heat device must not produce heat greater than 450°F (232°C). This temperature limit should be observed in event fuel vapors exist in the area.
2. When detector element in the left system heated, observe that these lights come on:
  - A. Left WING-BODY OVERHEAT lights on the Air Conditioning Panel (P5)
  - B. The AIR COND light on the glareshield P7.
  - C. The MASTER CAUTION lights.
3. When detector element in the right system heated, observe that these lights come on:
  - A. Right WING-BODY OVERHEAT lights on the Air Conditioning Panel (P5)
  - B. The AIR COND light on the glareshield P7.
  - C. The MASTER CAUTION lights.
4. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

---

**26-19 Lower Cargo Compartment Fire Detection/Suppression Systems**


---

Interval	Installed	Required	Procedure
B	Refer Note	0	(O)

May be inoperative provided procedures are established and used to ensure associated 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.

NOTE 1: MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

NOTE 2: Class E cargo compartments require only installation of smoke or fire detection systems (not suppression).

NOTE 3: Forward and aft cargo compartments are installed with a smoke or detection system and a fire extinguishing/suppression system.

---

**OPERATIONS (O)**

Operators must establish and use procedures to verify that the associated compartment remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits. MAB approved Fly Away Kits and ballast are those items which are made of "non-combustible materials" such as metal tools/cable/containers, iron or steel bars/sheets etc.

---

**26-19 Lower Cargo Compartment Fire Detection/Suppression Systems**
**26-19-01 Fwd/Aft Detection Loops**
**26-19-01-01 Boeing installed system**

Interval	Installed	Required	Procedure
C	4	2	(O)

One loop (A or B) in each compartment may be inoperative provided opposite loop is checked to operate normally.

---

**OPERATIONS (O)**

NOTE 1:(Deleted)

NOTE 2: If a Cargo Fire Panel FWD/AFT warning light does not illuminate during system test, one or more detection loops for the associated cargo compartment is inoperative.

To determine the inoperative loop(s):

1. On the Cargo Fire Panel, position the FWD and AFT DET SELECT switch to A.
2. Press and hold Cargo Fire Panel TEST switch.
3. Verify that the following indications occur within 4 seconds.

- A. Fire Bell sounds.
  - B. Both Master FIRE WARN lights illuminate.
  - C. Cargo Fire Panel FWD and AFT warning lights illuminate.
  - D. Cargo Fire Panel DISCH light illuminates.
  - E. Cargo Fire Panel EXT FWD and EXT AFT lights illuminate.
4. If one or more smoke detectors in Loop A is inoperative, the Cargo Fire Panel DETECTOR FAULT light will illuminate and the associated FWD or AFT warning light will remain extinguished for the cargo compartment with the inoperative detector.
  5. Release the Cargo Fire Panel TEST switch. The DETECTOR FAULT light remains illuminated if a loop failure is detected in either the forward or aft cargo compartment. Otherwise all indications will clear within half a second.
  6. Position Cargo Fire Panel FWD and AFT DET SELECT switch to B and repeat the above test (Steps 2 through 5).
  7. Position Cargo Fire Panel DET SELECT switch(es) as required for flight. One detection loop (A or B) must operate normally in each cargo compartment or MEL loading restrictions must be observed.

---

**26-19 Lower Cargo Compartment Fire Detection/Suppression Systems**

**26-19-02 Extinguisher Bottles**

**26-19-02-02 No. 2 (Boeing installed system)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative with cargo carried in compartment.

---

### **MAINTENANCE (M)**

NOTE: (Deleted)

For -800:

Do these steps to prevent anomalies in the indication of the DISCH light during operation and the EXT FWD test light during system test (AMM 26-00-00/901):

For All Models:

1. Disconnect, cap and stow electrical connector D12816 on the Extinguisher Bottle No. 2 pressure switch.
2. Disconnect electrical connectors D12820 and D12818 from the Extinguisher Bottle No. 2 squibs.
3. Install a jumper across pins 1 and 2 on both connectors. Cap and stow connectors.

### **OPERATIONS (O)**

NOTE: (Deleted)

The fire suppression capability is reduced to 60 minutes. Therefore the airplane must remain within 60 minutes of a suitable airport.



- 26-19**      Lower Cargo Compartment Fire  
                Detection/Suppression Systems  
**26-19-04**    DISCH Light(s)  
**26-19-04-01** Boeing installed system

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided associated extinguisher bottle(s) is verified to have an adequate charge once each flight day.

## **MAINTENANCE (M)**

---

**NOTE: (Deleted)**

For -800-

Do these steps for an inoperative DISCH light circuit to make sure that the fire extinguisher bottle has an adequate charge(AMM 26-00-00/901):

*For All Models*

1. Build a test lamp (28 Volts DC/40 millamps) with pigtail leads terminating in pin contacts in a suitable holder.  
NOTE: Any suitable lamp or digital multimeter can be used.
  2. Remove the Cargo Fire Panel.
  3. Disconnect the electrical connector D12760 from the panel.
  4. Connect the test lamp or digital multimeter between the airplane side of connector D12760, Pin 48 (+28 volt source for Bottle No. 1) and Pin 28 (pressure switch ground).
  5. For airplanes with Extinguisher Bottle No. 2:
    - A. Connect test lamp or digital multimeter between the airplane side of connector D12760, Pin 45 (+28 volt source for Bottle No. 2) and Pin 28 (pressure switch ground).
  6. If the test lamp remains extinguished or the digital multimeter indicates an open circuit the associated bottle has an adequate charge.
  7. Remove the test lamp.
  8. Reconnect electrical connector D12760 to the panel.
  9. Install the Cargo Fire Panel.
  10. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

- 26-19**      Lower Cargo Compartment Fire  
                Detection/Suppression Systems  
**26-19-05**    Extinguisher Bottle Pressure Switch (Boeing  
                installed system only)

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided associated extinguisher bottle(s) is verified to have an adequate charge once each flight day.

**MAINTENANCE (M)****For -800:**

Do these steps to verify the charge of the associated fire extinguisher bottle and to deactivate the pressure switch (AMM 26-00-00/901):

**For -800:**

Reference AMM 26-23-01

**For All Models:**

Reference AMM 26-23-01.

1. Remove the extinguisher bottle.
2. Weigh the extinguisher bottle on a scale that is accurate to within +/- 0.1 pound.
3. Confirm that the extinguisher bottle weight is within 0.25 pounds of the service weight stamped on the bottle's identification plate.
4. Install the extinguisher bottle.
5. Cap and stow the associated bottle's pressure switch electrical connector.
6. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**26-19            Lower Cargo Compartment Fire  
Detection/Suppression Systems**

**26-19-06        EXT Lights (FWD and AFT) (Boeing installed system  
only)**

Interval	Installed	Required	Procedure
C	2	0	(M) [R]

May be inoperative provided:

- a. Failure is verified to be in squib light circuit.
- b. Squib circuit is verified to operate normally once each flight day.

**MAINTENANCE (M)**

NOTE: (Deleted)

**For -800:**

Do these steps for an inoperative EXT light circuit to verify normal operation of associated squib circuit (AMM 26-00-00/901):

**For All Models:**

1. Build a test lamp (28 Volts DC/40 millamps) with pigtail leads terminating in pin contacts in a suitable holder.  
NOTE: Any suitable lamp can be used.
2. Remove the Cargo Fire Panel.
3. Disconnect the electrical connector D12760 from the panel.

**CAUTION: TO PREVENT INJURY, RESTRICT PERSONNEL  
FROM EXTINGUISHER BOTTLE AREA DURING  
SQUIB CIRCUIT TEST. LIMIT CURRENT TO 40  
MILLIAMPS MAXIMUM DURING TEST. USE TEST  
LAMP (28 VOLT, 40 MILLIAMPS ONLY). DO NOT**

**USE A MULTIMETER.**

4. Use the table below to determine which pin numbers to connect between the test lamp and the airplane side of connector D12760.
  - A. If the test lamp illuminates, the squib circuit is intact.

CARGO FIRE BOTTLE SQUIB TEST TABLE				
Bottle	Squib	Squib Plug No.	TEST LAMP CONNECTION	
			Pin No. (+28 Vdc Source)	Pin No. (Ground Path)
1	FWD	D12794	D12760, Pin 48	D12760, Pin 26
1	AFT	D12796	D12760, Pin 48	D12760, Pin 24
2	FWD	D12818	D12760, Pin 45	D12760, Pin 12
2	AFT	D12820	D12760, Pin 45	D12760, Pin 23

5. Remove the test lamp.
6. Reconnect electrical connector D12760 to the panel.
7. Install the Cargo Fire Panel.
8. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

---

**26-19      Lower Cargo Compartment Fire  
Detection/Suppression Systems**
**26-19-13    DETECTOR FAULT Light (Boeing installed system  
only)**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided the cargo fire TEST switch is used to check for faults in the cargo fire detection and suppression system, before each flight

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**OPERATIONS (O)**

Before each flight, do a test of the cargo fire detection and suppression system using the TEST switch on the cargo fire panel.

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**26-20            MOVED (Lower Cargo Compartment Fire Extinguisher System)**

Interval	Installed	Required	Procedure

Incorporated into Item 26-19 in Revision 39.

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- 27-08-05 -800 without Short Field Performance (SFP) Option
  - 27-08-06 -800 with Short Field Performance (SFP) Option
- 27-09** **[DELETED] Control Wheel Trim Switch Systems**
- 27-10** **FEEL DIFF PRESS Light System**
- 27-11** **Auto Slat Fail Light System (-800)**
- 27-12** **Auto Slat Systems (-800)**
- 27-13** **[DELETED] Stall Warning Systems**
- 27-13-02 -800 with Blended Winglet or Split Scimitar Winglet without Speedbrake Load Alleviation System
  - 27-13-03 -800 with Blended Winglet or Split Scimitar Winglet with Speedbrake Load Alleviation System
  - 27-13-03-02 -800
    - 27-13-03-02A *No.2 SMYD - Airspeed Does Not Exceed 265 KIAS When Inflight Gross Weight Exceeds 155,000 lb. (70,306 kg.)*
    - 27-13-03-02B *No.2 SMYD - Takeoff Weight Does Not Exceed 156,500 lb. (70,987 kg.)*
- 27-14** **Rudder Trim Indicator**
- 27-14-01 -800 (without RSEP modification, i.e. without STBY RUD ON light on FLT CONTROL overhead panel)
  - 27-14-02 All models, upon incorporation of Boeing Service Bulletin 737-27-1252, 737-27-1253, or 737-27-1255, or production equivalent (With RSEP modification, i.e. having STBY RUD ON light on FLT CONTROL overhead panel)
- 27-16** **SPEED BRAKE/SPEEDBRAKES EXTENDED Light**
- 27-16-02 -800
- 27-17** **Wheel to Rudder Interconnect System (WTRIS) (-800)**
- 27-18** **Control Surface Position Indicating System**
- 27-20** **Speed Brake Load Alleviation System**
- 27-20-01 -800 with Blended Winglet or Split Scimitar Winglet STC ST00830SE
  - 27-20-01-02 -800

27-20-01-02A *Airspeed Does Not Exceed 265 KIAS When The Inflight Gross Weight Exceeds 155,000 lb. (70,306 kg.)*

27-20-01-02B *Takeoff Weight Does Not Exceed 155,500 lb. (70,533 kg.)*

27-21 **STBY RUD ON light**

27-23 **Elevator Tab Control Springs (-800)**



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**27-02      DELETED (Takeoff Warning Horn System)**

Interval	Installed	Required	Procedure

Deleted prior to Revision 27.

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**27-04 Leading Edge Flap/Slat Position Light Systems****27-04-02 -800****27-04-02A Aft Overhead LE DEVICES Annunciator Panel**

Interval	Installed	Required	Procedure
C	1	0	

Aft overhead panel LE DEVICES Annunciator panel may be inoperative provided forward panel lights operates normally.

**27-04 Leading Edge Flap/Slat Position Light Systems****27-04-02 (-800)****27-04-02B Forward Panel Lights**

Interval	Installed	Required	Procedure
C	1	0	(M)

Forward panel lights may be inoperative provided:

- Aft overhead LE DEVICES Annunciator panel operates normally and is used to verify proper LED position.
- A placard is installed to indicate proper position for flap configuration in use.

**MAINTENANCE (M)****For -800:**

With forward position indicator lights inoperative (AMM 27-00-00/901):

- Cycle the flaps.
- Verify that the LE DEVICES annunciator panel (P5) operates normally during flap extension and retraction.
- Remove the bulbs from the associated forward position indicator light(s) on the center instrument panel, P2.
- Use this data to make a placard and put it adjacent to the LE DEVICES annunciator panel:

**For -800:****A. Flap positions 1 thru 5:**

- All slats in EXT position.
- LE flaps extended.

**B. Flap positions 10 thru 40:**

- All slats in FULL EXT position..
- LE flaps extended.

**For -800SFP :****C. Flap positions 1 thru 25:**

- All slats in EXT position.

- 2) LE flaps extended.  
 A. Flap positions 30 and 40:  
 1) All slats in FULL EXT position.  
 2) LE flaps extended.

NOTE: Refer to Preamble and Definitions (Miscellaneous) to indicate SFP or non-SFP aircraft.

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**27-04           Leading Edge Flap/Slat Position Light Systems**

**27-04-02       -800**

**27-04-02-03     Leading Edge Slat Indications (-800)**

Interval	Installed	Required	Procedure
C	8	7	(M) (O) [P]

Indication lights on forward panel and in addition indication lights for one leading edge slat, except for slats 3, 4, 5, and 6, on overhead annunciator panel may be inoperative provided:

- a. Normal operation is verified by flight crew before each takeoff and landing.
- b. Maximum speed is limited to 300 KIAS at/below FL 200 or .65 Mach above FL 200.
- c. All remaining indications on overhead annunciator panel operate normally.
- d. Stall warning operation of both systems is verified to operate normally

NOTE: Associated wing illumination light may be required for verification of normal operation of the leading edge slats.

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**MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

With forward position indicator lights inoperative and one SLATS annunciator panel light inoperative (AMM 27-00-00/901):

1. Cycle the flaps.
2. Verify that the remaining LE DEVICES annunciator panel (P5) lights operate normally during flap extension and retraction.

NOTE 1: If an annunciator panel TRANSIT light fails to illuminate while the corresponding device in motion, then this light must be considered inoperative.

NOTE 2: This MEL item is applicable to inoperative leading edge SLAT indications and not the leading edge FLAP indications on the LE DEVICES annunciator panel. Dispatch is not allowed if the LE DEVICES annunciator panel FLAP lights do not illuminate properly and the forward panel light(s) are inoperative.

3. Remove the bulbs from the associated forward position indicator light(s) on the center instrument panel, P2.
4. Use this data to make a placard and put it adjacent to the annunciator panel:  
For -800

- A. Flap positions 1 thru 5: All slats in EXT position, LE flaps extended.  
Placard as follows:  
“F1-F5 Slats = EXT”
- B. Flap positions 10 thru 40: All slats in FULL EXT position, LE flaps extended.  
Placard as follows:  
“F10-F40 Slats = FULL EXT”

For -800SFP:

- A. Flap positions 1 thru 25: All slats in EXT position, LE flaps extended.  
Placard as follows:  
“F1-F25 Slats = EXT”
- B. Flap positions 30 and 40: All slats in FULL EXT position, LE flaps extended.  
Placard as follows:  
“F30-F40 Slats = FULL EXT”

5. Determine which TE flap position(s) result in inoperative indication.
  - A. If faulty indication is intermittent or cannot be replicated on the ground, use FSEU BITE to determine if an FSEU input has been recently faulty:
    - 1) If FSEU BITE (Flight Leg 0) indicates fault message codes 27-81200 through 27-81223 or 27-81225 through 27-81236, open and collar the Stall Warning Asymmetry Mode circuit breaker on the P18-2 Panel.
  - B. If FSEU BITE does not yield one of these fault codes because the fault indication light(s) flashes ON/OFF for an instant such that the fault does not latch, and the applicable slat can be confirmed to be stationary in the position where the intermittent indication was observed, then open and collar the Stall Warning Asymmetry Mode circuit breaker.

NOTE: The FSEU will inhibit the Takeoff Warning (TOW) alert to the PSEU when 7 of 8 LE slats are extended during a takeoff attempt ONLY if circuit breaker C1208 Stall Warning Asymmetry Mode is open. If the circuit breaker is closed, the TOW will occur when the crew advances the throttles for takeoff.

6. Set flaps to the position which produces the faulty indication.
7. Verify that the leading edge and trailing edge devices are in the correct position.
8. Verify normal operation of both Stall Warning Systems:

For -800

NOTE 1: If the inoperative slat indication occurs at more than one flap position, repeat the procedure to verify normal operation of both Stall Warning Systems at Flaps 0, Flaps 1 and Flaps 10.

For -800SFP:

NOTE 2: If the inoperative slat indication occurs at more than one flap position, repeat the procedure to verify normal operation of both Stall Warning Systems at Flaps 0, Flaps 1 and Flaps 30.

- A. Verify that hydraulic system B pressure is between 2900 and 3100 psi.
- B. Push and hold STALL WARNING TEST NO. 1 and NO. 2 switch on the stall warning test module (P5 Overhead Panel).
- C. Check that the control column stick shakers operate normally.
- D. If both stick shakers fail to operate normally, open and collar the Stall



Warning Asymmetry Mode circuit breaker on the P18-2 Panel if not already accomplished in step 5 above, and then repeat test in steps B and C.

9. If the stick shaker tests are normal the airplane can be dispatched.

## **OPERATIONS (O)**

With forward position indicator lights inoperative and one SLATS annunciator panel light inoperative:

1. Verify leading edge slat position for the inoperative indication before each takeoff and landing.
2. Limit airspeed:
  - A. At or below FL 200, limit airspeed to 300 KIAS.
  - B. Above FL 200, limit airspeed to 0.65 Mach.

NOTE 1: Refer to Section 4 of the Airplane Flight Manual for the Cruise Maneuvering Capability chart for maintaining minimum maneuvering speeds.

NOTE 2: With FMC update 10.7 or later, VNAV will limit the speed target to 230 KIAS unless speed intervention is used.

NOTE 3: Refer to Preamble and Definitions (Miscellaneous) to indicate SFP or non-SFP aircraft.

**27-06 MOVED (Mach Trim System)**

Interval	Installed	Required	Procedure

Moved to Item 22-05 prior to Revision 27.

- - - - -

- 27-07              Auto Speed Brake System**  
**27-07-01          All Models except 737-800 with Short Field Performance (SFP) Option**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

Except for operation in-to (not out-of) KTM, may be inoperative provided:

- a. System is deactivated.
  - b. Operations are conducted in accordance with AFM.
  - c. For models with Blended Winglet or Split Scimitar Winglet with Speed Brake Load Alleviation System, Speed Brake Load Alleviation System is considered inoperative.
  - d. Aircraft is not operated into airports with Landing Distance Available (LDA) less than 6000 ft (1829 m) (assumes dry runway landing at MLW at sea level with zero wind).
- - - - -

### **MAINTENANCE (M)**

#### **For all aircraft:**

Advise FDC/OCC/MOC that performance is affected.

#### **For -800:**

Prepare the airplane for flight with the auto speed brake system inoperative (AMM 27-00-00/901):

1. Verify manual speed brake operation.
2. Open and collar P6 Panel circuit breaker FLIGHT CONTROL AUTO SPEED BRAKE.

### **OPERATIONS (O)**

Obtain the landing field length performance limit weight as follows:

#### **For -800:**

Refer FCOM Performance Dispatch Section for landing performance adjustments.

1. Prior to takeoff, make sure that the speed brake lever is in the full down detent.
2. Base landing performance on manual speed brakes.
3. Extend speedbrakes manually for rejected takeoff or landing.
  - A. For rejected takeoff:
    - 1) Simultaneously close thrust levers, disengage autothrottles and apply maximum manual wheel brakes or verify operation of RTO autobrakes.
    - 2) Manually raise SPEED BRAKE lever.
    - 3) Apply the maximum amount of reverse thrust consistent with conditions.
  - B. For landing:
    - 1) Simultaneously close the thrust levers and apply manual wheel brake or verify operation of autobrakes.

- 2) Manually raise SPEED BRAKE lever.  
3) Apply reverse thrust consistent with conditions.

For -800:

5. The autobrakes may not disarm when the speed brake lever is stowed.

Auto brakes can be disarmed by positioning the AUTO BRAKE select switch to OFF, applying brakes manually or advancing the thrust levers.

NOTE: Refer to Preamble and Definitions (Miscellaneous) to indicate SFP or non-SFP aircraft.

**27-07            Auto Speed Brake System  
27-07-02        -800 with Short Field Performance (SFP) Option**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

Except for KUL-KTM vv, May be inoperative provided:

- a. System is deactivated.
  - b. Appropriate performance adjustments are applied.
- 

**MAINTENANCE (M)**

Prepare the airplane for flight with the auto speed brake system inoperative (AMM 27-00-00/901):

1. Verify manual speed brake operation.

NOTE: Extend flaps prior to moving speed brake lever beyond the FLIGHT DETENT position.

2. Open and collar P6 Panel circuit breaker FLIGHT CONTROL AUTO SPEED BRAKE.

**OPERATIONS (O)**

1. Prior to takeoff, make sure that the speed brake lever is in the full down detent.

2. Reduce performance limited weights by the following:

A. Takeoff field length limit weight and brake energy limit weight: 2300 lb (1044 kg)

B. Landing field length limit weight based on auto speed brakes: 13,000 lb (5897 kg)

3. Extend speedbrakes manually for rejected takeoff or landing.

A. For rejected takeoff:

1) Simultaneously close thrust levers, disengage the autothrottles and apply maximum manual wheel brakes or verify operation of RTO autobrakes.

2) Manually raise SPEED BRAKE lever.

3) Apply the maximum amount of reverse thrust consistent with conditions.



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- B. For landing:
- 1) Simultaneously close the thrust levers and apply manual wheel brakes or verify operation of autobrakes.
  - 2) Manually raise SPEED BRAKE lever.
  - 3) Apply reverse thrust consistent with conditions.
4. The autobrakes will not disarm when the speed brake lever is stowed. Auto brakes can be disarmed by positioning the AUTO BRAKE select switch to OFF, applying brakes manually or advancing the thrust levers.
- NOTE: Refer to Preamble and Definitions (Miscellaneous) to indicate SFP or non-SFP aircraft.

**27-08 Flap Load Limiter System****27-08-05 800 without Short Field Performance (SFP) Option**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- a. Flaps are not extended beyond Flaps 30 at gross weights above 93,995 lb.  
(42,635 kg).
  - b. Flaps are not extended beyond Flaps 15 at gross weights above 104,875 lb.  
47,570 kg).
- 

**27-08 Flap Load Limiter System****27-08-06 -800 with Short Field Performance (SFP) Option**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- a. Flaps are not extended beyond Flaps 30 at gross weights above 95,800 lb.  
(43,454 kg).
  - b. Flaps are not extended beyond Flaps 15 at gross weights above 105,000 lb.  
(47,627 kg).
  - c. Flaps are not extended beyond Flaps 10 at gross weights above 135,800 lb.  
(61,597 kg).
-



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**27-09 [DELETED] Control Wheel Trim Switch Systems**

Interval	Installed	Required	Procedure

DELETED IN MAB REVISION NO: 08.

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**27-10 FEEL DIFF PRESS Light System**

Interval	Installed	Required	Procedure
B	1	0	(M) [R]

May be inoperative provided Elevator feel system is verified to operate normally once each flight day.

- - - - -

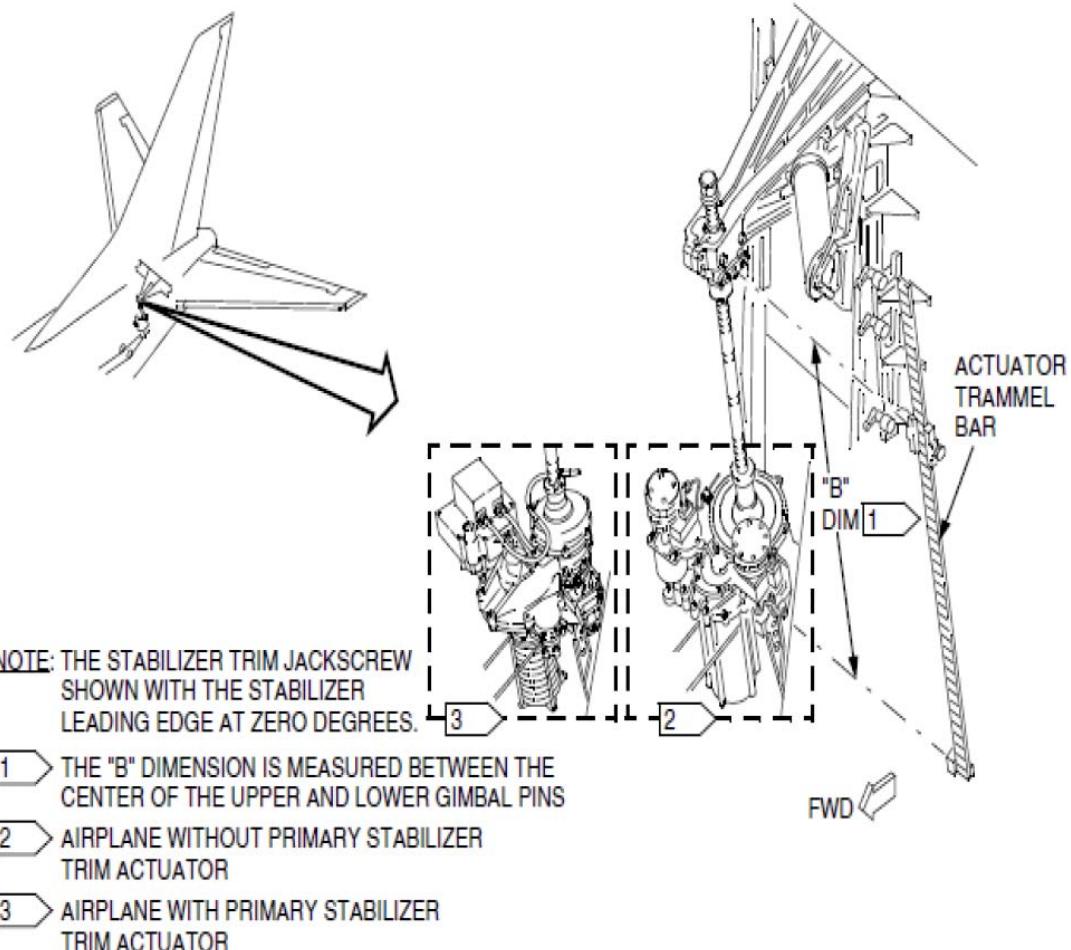
**MAINTENANCE (M)**For -800:

Verify that the feel system is operative once each flight day (AMM 27-00-00-901).

1. Pressurize the elevator hydraulic systems A and B (AMM 27-31-00/201).

**CAUTION: MAKE SURE PERSONNEL ARE CLEAR OF THE HORIZONTAL TAIL AND ARE AWARE THAT HYDRAULIC SYSTEMS ARE PRESSURIZED.**

2. Use the stabilizer trim switches to set the stabilizer to 4 units of trim.
3. Set the FLT CONTROL A and B switches to OFF.
4. Verify that the horizontal stabilizer "B" dimension is  $39.89 \pm 0.01$  inches.



5. Set the mach trim actuator in null position (AMM 27-31-00/201).
6. Do a check for pressure leakage in the feel pitot system:
  - A. Apply a seal to the drain hole in each feel pitot tube on the vertical fin.
  - B. Remove the drain plugs from the system A and B pitot lines.
  - NOTE: The pitot lines are located below the elevator feel computer.
  - C. Connect the pressure gage lines from the air pressure regulator to the drain holes of the pitot lines.

**CAUTION: DO NOT RAISE TEST PRESSURE ABOVE 5.0 PSI (437 KNOTS) AT ANY TIME DURING TEST.**

  - D. Connect the pressure lines from air pressure regulator to both pitot probes on the vertical fin.
  - E. Pressurize the pitot system to  $4.8 \pm 0.1$  psi ( $429 \pm 4$  knots).
  - F. Turn the shutoff valve in the air pressure regulator to off.
  - G. Make sure the pressure does not decrease more than 0.3 psi (12 knots) during a 2-minute period.
  - H. Reduce the pitot pressure to zero.
7. Set the FLT CONTROL A and B switches to ON.
8. Pressurize the pitot system to  $2.47 \pm 0.05$  psi ( $315 \pm 3$  knots).

**CAUTION: DO NOT RAISE TEST PRESSURE ABOVE 5.0 PSI (437 KNOTS) AT ANY TIME DURING TEST.**

9. Apply masking tape on the tail cone along the direction of the right elevator trailing edge travel.  
 NOTE: Elevator travel measuring tool may be used in lieu of tape method.
10. Move the captain's control column lightly to put the elevator system in the neutral position.  
 NOTE: Make sure that the control columns are not disturbed from this position during the next step.
11. Mark the actual elevator trailing edge neutral position on the masking tape.
12. Set FLT CONTROL B switch to OFF and leave FLT CONTROL A switch in the ON position.
13. Move the captain's control column slowly with a push/pull type spring scale applied to the center of the control wheel to the elevator positions as shown in the table below.  
 NOTE: Make sure the force to hold the control column is as shown in the table below.

Model	Elevator Position	Column Force
-600/-700/-800/-900	$1.20 \pm 0.05$ inches up $1.20 \pm 0.05$ inches down	$38.0 \pm 4.0$ lbs $38.0 \pm 4.0$ lbs

14. Set FLT CONTROL A switch to OFF and FLT CONTROL B switch to ON.
15. Do step 13 again.
16. Restore the airplane to its usual condition:
  - A. Make sure that all tools used during testing are removed.
  - B. Remove all masking tape.
  - C. Remove seals from the drain holes in each vertical fin pitot probe.

- D. Remove the pressure gage lines from systems A and B drain lines.
  - E. Install the drain plugs to the systems A and B drain lines.
  - F. Remove regulated air pressure lines from both vertical fin pitot probes.
  - G. Close all circuit breakers opened during testing.
  - H. Restore airplane to normal hydraulic configuration (AMM 27-31-00/201).
  - I. Remove electrical power if no longer required.
17. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**27-11 Auto Slat Fail Light System (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided:

- a. Auto slat systems are verified to operate normally.
  - b. Verification is repeated every two flight days.
- 

**MAINTENANCE (M)****For -800:**

1. Do the EXISTING FAULTS test on the SMYD BITE (AMM 27-00-00/901):
  - A. Push the ON/OFF switch.
  - B. Push the YES switch when the display shows EXISTING FAULTS?
    - 1) Make sure the display shows NO FAULTS.
  - C. Push the MENU switch.
  - D. Push the ON/OFF switch to exit the BITE.
2. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**27-12 Auto Slat Systems (-800)**

Interval	Installed	Required	Procedure
C	2	1	(O)

One system may be inoperative provided:

- a. Remaining auto slat system is checked to operate normally.
  - b. Auto slat fail light operates normally.
- 

**MAINTENANCE NOTE**

The inoperative autoslat system can be deactivated by opening and collaring the associated P6-2 Panel AUTO SLAT DC circuit breaker.

**OPERATIONS (O)**

For initial dispatch, verify normal operation of the remaining autoslat system:

NOTE: Illumination of the associated lights when recalled and extinguishing when reset verifies normal operation.

1. Press and release a system annunciator panel on the glareshield and observe that these lights illuminate:
  - A. FLT CONT
  - B. AUTO SLAT FAIL
  - C. MASTER CAUTION.
2. Press and release a MASTER CAUTION light and observe that these lights extinguish:
  - A. FLT CONT
  - B. AUTO SLAT FAIL
  - C. MASTER CAUTION.

- 27-13 [DELETED] Stall Warning Systems  
 27-13-02 -800 with Blended Winglet or Split Scimitar Winglet without Speedbrake Load Alleviation System

Interval	Installed	Required	Procedure

DELETED IN MAB REVISION NO: 08.

- 27-13 [DELETED] Stall Warning Systems  
 27-13-03 -800 with Blended Winglet or Split Scimitar Winglet with Speedbrake Load Alleviation System

Interval	Installed	Required	Procedure

DELETED IN MAB REVISION NO: 08.

- 27-13 [DELETED] Stall Warning Systems  
 27-13-03 -800 with Blended Winglet or Split Scimitar Winglet with Speedbrake Load Alleviation System  
 27-13-03-02 -800  
 27-13-03-02A No.2 SMYD - Airspeed Does Not Exceed 265 KIAS When Inflight Gross Weight Exceeds 155,000 lb. (70,306 kg.)

Interval	Installed	Required	Procedure

DELETED IN MAB REVISION NO: 08

- 27-13 [DELETED] Stall Warning Systems  
 27-13-03 -800 with Blended Winglet or Split Scimitar Winglet with Speedbrake Load Alleviation System  
 27-13-03-02 -800  
 27-13-03-02B No.2 SMYD - Takeoff Weight Does Not Exceed 156,500 lb. (70,987 kg.)

Interval	Installed	Required	Procedure

DELETED IN MAB REVISION NO: 08

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- 27-14 Rudder Trim Indicator**  
**27-14-01 -800 (without RSEP modification, i.e. without STBY RUD ON light on FLT CONTROL overhead panel)**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- Control Surface Position Indicating System is installed and operates normally.
- Rudder trim actuator is checked to operate normally.
- Rudder trim is checked to be centered before each departure.

### **OPERATIONS (O)**

Confirm normal operation of the rudder trim actuator and confirm rudder trim is centered before each departure.

- Pressurize rudder hydraulic systems A and B.
- Do a test of the rudder trim actuator:
  - Turn the rudder trim knob to the NOSE LEFT position.
  - Observe that the captain's left rudder pedal moves forward and right rudder pedal moves aft.
  - Turn the rudder trim knob to the NOSE RIGHT position.
  - Observe that captain's left rudder pedal moves aft and right rudder pedal moves forward.
- Do a test of the rudder trim centering:
  - Turn the rudder trim knob in appropriate direction until the captain's rudder pedals are aligned with each other.
  - Make sure that the rudder is centered (in the neutral position). If not, use rudder trim until rudder is centered.

- 27-14 Rudder Trim Indicator**  
**27-14-02 All models, upon incorporation of Boeing Service Bulletin 737-27-1252, 737-27-1253, or 737-27-1255, or production equivalent (With RSEP modification, i.e. having STBY RUD ON light on FLT CONTROL overhead panel)**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- Rudder trim actuator is checked to operate normally.
- Rudder trim is checked to be centered before each departure.

### **OPERATIONS (O)**

Confirm normal operation of the rudder trim actuator and confirm rudder trim is

centered before departure:

1. Pressurize rudder hydraulic systems A and B.
2. Do a test of the rudder trim actuator:
  - A. Turn the rudder trim knob to the NOSE LEFT position.
  - B. Observe that the captain's left rudder pedal moves forward and right rudder pedal moves aft.
  - C. Turn the rudder trim knob to the NOSE RIGHT position.
  - D. Observe that captain's left rudder pedal moves aft and right rudder pedal moves forward.
3. Do a test of the rudder trim centering:
  - A. Turn the rudder trim knob in appropriate direction until the captain's rudder pedals are aligned with each other.
  - B. Make sure that the rudder is centered (in the neutral position). If not, use rudder trim until rudder is centered.

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**27-16 SPEED BRAKE/SPEEDBRAKES EXTENDED Light**  
**27-16-02 -800**


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Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided speed brakes are verified to operate normally.

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**MAINTENANCE (M)**

Verify normal operation of the speed brakes (AMM 27-00-00/901).

1. Verify that wheel chocks are in place.
2. Put the SPEED BRAKE lever in the DOWN position.
3. Visually verify that flight and ground spoilers are all down.
4. Put the SPEED BRAKE lever in the FLIGHT DETENT.
5. Visually verify that ground spoilers and flight spoilers deploy.
6. Put the SPEED BRAKE lever in the DOWN position.
7. Visually verify that flight and ground spoilers are all down.
8. Verify that stabilizer trim is in the green band.
9. Position flaps to a takeoff position.
10. Release the parking brake.
11. Advance (engines not running) both thrust levers beyond 60 degrees.
12. Make sure that the Takeoff Configuration Warning Horn does not sound.
13. Retard thrust levers to idle.
14. Return airplane to its normal configuration, i.e., set parking brake and retract flaps.
15. If the SPEEDBRAKES EXTENDED light remains illuminated while on the ground, extinguish it by removing the light bulb.

**27-17                  Wheel to Rudder Interconnect System (WTRIS) (-800)**

Interval	Installed	Required	Procedure
C	1	0	



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**27-18 Control Surface Position Indicating System**

Interval	Installed	Required	Procedure
C	1	0	-

NOTE: Control surface position indicating system is installed in all MAB B738 aircrafts except 9M-MLF thru MLI.

- 27-20 Speed Brake Load Alleviation System**  
**27-20-01 -800 with Blended Winglet or Split Scimitar Winglet STC**  
**ST00830SE**  
**27-20-01-02 -800**  
**27-20-01-02A Airspeed Does Not Exceed 265 KIAS When The Inflight Gross Weight Exceeds 155,000 lb. (70,306 kg.)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. Speedbrake handle forces are normal from full down to full up position.
- b. Airspeed does not exceed 265 KIAS when inflight gross weight is in excess of 155,000 lb. (70,306 kg.).
- c. Severe turbulent air penetration speed is 265 KIAS or 0.76 Mach, whichever is lower, when inflight gross weight is in excess of 155,000 lb. (70,306 kg.).
- d. Automatic Speed Brake System is considered inoperative.

NOTE: The airplane must also be dispatched using MEL 27-07.

### **MAINTENANCE (M)**

Deactivate the Speedbrake Load Alleviation System and the Automatic Speed Brake System is considered inoperative (AMM 27-00-00/901).

1. Advise MOC/FDC/OCC that performance is affected.
2. The Speedbrake Load Alleviation System may be inoperative due to:
  - A. Mechanical failures.
  - B. Electrical failures (including failure of the system actuator in the center control stand).
  - C. SMYD in the #2 position generating an autostow fault.
3. In any of the above cases, open and collar the circuit breaker for speed brake AUTOSTOW on P6-2 circuit breaker panel.
4. Use MEL item 27-07 (M) procedure for an inoperative automatic speed brake system.

### **OPERATIONS (O)**

Use MEL item 27-07 (O) procedure for an inoperative automatic speed brake system.

- 
- 27-20 Speed Brake Load Alleviation System**  
**27-20-01 -800 with Blended Winglet or Split Scimitar Winglet STC**  
**ST00830SE**  
**27-20-01-02 -800**  
**27-20-01-02B Takeoff Weight Does Not Exceed 155,500 lb. (70,533 kg.)**

Interval	Installed	Required	Procedure
C	1	0	(M) [P]

May be inoperative provided:

- a. Speedbrake handle forces are normal from full down to full up position.
  - b. Takeoff weight does not exceed 155,500 lb. (70,533 kg.).
- 

### **MAINTENANCE (M)**

Deactivate the Speedbrake Load Alleviation System (AMM 27-00-00/901).

1. Advise MOC/FDC/OCC that performance is affected.
2. The Speedbrake Load Alleviation System may be inoperative due to:
  - A. Mechanical failures.
  - B. Electrical failures (including failure of the system actuator in the center control stand).
  - C. SMYD in the #2 position generating an autostow fault.
3. In any of the above cases, open and collar the circuit breaker for speed brake AUTOSTOW on P6-2 circuit breaker panel.

**27-21 STBY RUD ON light**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. Rudder is verified to operate normally on hydraulic system A and B independently.
- b. Standby hydraulic pump is verified to operate normally.
- c. Rudder force fight monitor is deactivated.

NOTE: STBY RUD ON light is only installed on aircraft that have fully embodied the RSEP modification (SB's or production equivalent listed in the title). Aircraft with only partial RSEP embodiment have an INOP decal covering the STBY RUD ON light.

-----

**MAINTENANCE (M)****For -800:**

Open and collar the FORCE FIGHT MON circuit breaker on the P6-2 panel (AMM 27-00-00/901).

**For All Models:**

NOTE: If the STBY RUD ON light is inoperative ON, verify light extinguishes after pulling circuit breaker.

**OPERATIONS (O)**

1. Verify that the rudder operates normal on hydraulic system A and B:
  - A. Pressurize hydraulic systems A and B.
  - B. Set FLT CONTROL A switch ON and FLT CONTROL B switch OFF.
  - C. Verify normal rudder pedal forces by pushing captain's left rudder pedal forward (while holding tiller to prevent tire scrub) until it touches the stop and hold.
  - D. Have ground observer confirm that rudder travels left.
  - E. Release left rudder pedal and verify normal rudder pedal forces by pushing the captain's right rudder pedal forward (while holding tiller to prevent tire scrub) until it touches the stop and hold.
  - F. Have ground observer confirm that rudder travels right
  - G. Release captain's right rudder pedal.
  - H. Have ground observer confirm that rudder returns to neutral.
  - I. Set FLT CONTROL B switch ON and FLT CONTROL A switch OFF.
  - J. Repeat steps C through H above.



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2. Verify that the standby hydraulic pump is operating normally by either:
  - A. Verifying that the standby hydraulic pump can be heard turning on when either FLT CONTROL A or B switches are placed in the STBY RUD position.  
OR
  - B. With one FLT CONTROL switch placed in the STBY RUD position (other FLT CONTROL switch OFF), repeat steps C through H above.
3. Return FLT CONTROL switches to normal position for flight.

**27-23      Elevator Tab Control Springs (-800)**

Interval	Installed	Required	Procedure
A	4	3	(M)

One may be broken or missing provided:

- a. Broken spring is removed.
- b. Repairs are made within 10 flight days.

**MAINTENANCE (M)**

Remove the broken spring and verify the remaining springs are in place and not broken, and perform the tab mechanism inspections per AMM Task 27-31-00-220-802. Perform elevator tab operational test per AMM Task 27-31-00-700-815

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**28-25 Center Tank Fuel Boost Pump Automatic Shut Off System  
(Service Bulletin 737-28A1228, 737-28A1216, 737-28A1206, or  
Equivalent Installed)**

28-25-01 All Models

28-25-01A *Center Tank Fuel Pump Considered Inoperative*

28-25-01B *Center Tank Remains Empty*

28-25-03 -800

**28-26 Fuel Shutoff Valve Battery and Charger (-800)**

**28-01      Fuel Boost Pumps (Main Tanks)**
**28-01-03      -800**
**28-01-03-01      Aft Pumps**

Interval	Installed	Required	Procedure
C	2	1	(M) (O) [P] [E]

Except for EDTO operations beyond 120 minutes, one may be inoperative provided:

- a. Both main tank forward pumps operate normally,
  - b. At start of takeoff, fuel quantity in associated tank is not less than 7,500 lb. (3,402 kg.), and
  - c. A minimum fuel quantity of 2,500 lb. (1,134 kg.) is maintained in associated tank.
  - d. Boost pump is deactivated.
- 

**MAINTENANCE (M)**

1. Position the associated AFT FUEL PUMP switch to OFF.
2. Open and collar the associated aft fuel pump circuit breaker on Power Distribution Panel P91 or P92.
3. Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed, and the fuel required will increase.

**OPERATIONS (O)**

NOTE: Observe the Flight Manual limitations concerning lateral fuel imbalance.

Plan fuel load to allow for the appropriate minimum fuel. Range and/or payload restrictions may result.

1. The minimum fuel requirements with an inoperative aft fuel boost pump assures that the operative forward fuel boost pump and suction feed inlet remain submerged during rotation to high nose up attitudes during takeoff or go around.
2. In the event the second (forward) boost pump in a main tank fails, the engine will operate satisfactorily on suction feed. With both tank No. 1 boost pumps inoperative, APU operation may become unreliable at altitudes above 25,000 feet.

NOTE: At high altitude, thrust deterioration or engine flameout may occur.

**28-01      Fuel Boost Pumps (Main Tanks)****28-01-03    -800****28-01-03-02    Forward Pumps**

Interval	Installed	Required	Procedure
C	2	1	(M) (O) [P] [E]

Except for EDTO operations beyond 120 minutes, one may be inoperative provided:

- a. Both main tank aft pumps operate normally.
  - b. At start of takeoff, fuel quantity in associated tank is not less than 4,800 lb. (2,177 kg.).
  - c. A minimum fuel quantity of 1,800 lb. (817 kg.) is maintained in associated tank.
  - d. Boost pump is deactivated.
- 

**MAINTENANCE (M)**

1. Position the associated FWD FUEL PUMP switch to OFF.
2. Open and collar the associated forward fuel pump circuit breaker on Power Distribution Panel P91 or P92.
3. Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed, and the fuel required will increase.

**OPERATIONS (O)**

NOTE: Observe the Flight Manual limitations concerning lateral fuel imbalance.

Plan fuel load to allow for the appropriate minimum fuel. Range and/or payload restrictions may result.

1. The minimum fuel requirements with an inoperative forward fuel boost pump assures that the operative aft fuel boost pump and suction feed inlet remain submerged during rotation to high nose up attitudes during takeoff or go around.
2. In the event the second (aft) boost pump in a main tank fails, the engine will operate satisfactorily on suction feed. With both tank No. 1 boost pumps inoperative, APU operation may become unreliable at altitudes above 25,000 feet.

NOTE: At high altitude, thrust deterioration or engine flameout may occur.

---

**28-02            Fuel Boost Pumps (Center Tank)**  
**28-02A          Tank Remains Empty**

Interval	Installed	Required	Procedure
C	2	1	(M)

May be in operative provided:

- a. Tank remain empty.
  - b. Boost pump is deactivated.
- 

**MAINTENANCE (M)**

1. Position the associated CTR FUEL PUMP switch to OFF.

For -800:

2. Open and collar the associated center tank fuel pump circuit breaker on the Power Distribution Panel P91 or P92.

---



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**28-02            Fuel Boost Pumps (Center Tank)**  
**28-02B          Tank Contains Fuel**

Interval	Installed	Required	Procedure
C	2	1	(M) (O) [P]

May be inoperative with center tank fueled provided:

- a. Fuel quantity remaining in main wing tanks is adequate to reach a suitable airport if remaining center pump fails at any time.
  - b. Zero fuel weight calculations are adjusted by weight of center tank fuel.
  - c. Effect on airplane balance, in event fuel cannot be used is accounted for.
  - d. LOW PRESSURE light of operating center fuel tank pump operates normally.
  - e. Center tank quantity indication operates normally.
  - f. Boost pump is deactivated.
- 

**MAINTENANCE (M)**

1. Position the associated CTR FUEL PUMP switch to OFF.

For -800:

2. Open and collar the associated center tank fuel pump circuit breaker on the Power Distribution Panel P91 or P92.

For All Models:

3. Advise MOC, FDC and OCC. Fuel planning should have main tank fuel quantities adequate to reach an alternate destination if the remaining center tank pump fails inflight.

**OPERATIONS (O)**

For -800 with Auto Shutoff System:

NOTE: All MH B738 fleet is with Center Tank Boost Pump Auto Shutoff System

1. Verify that the zero fuel weight and balance limitation have been accounted for.

2. Adjust the zero fuel weight of the airplane by including the weight of center tank fuel, or adjust the maximum zero fuel by subtracting the weight of center tank fuel.
3. Fuel usage takeoff configuration:
  - A. Position the CROSSFEED selector to the closed position.
  - B. Position the AFT and FWD main tank FUEL PUMP switches to ON for all operating main pumps.
4. Verify that the operating center tank FUEL PUMP switch is in the OFF position.  
NOTE: Fuel CONFIG alert may be displayed with fuel in the center tank.
5. After takeoff:
  - A. Position the operating center tank FUEL PUMP switch ON if the center tank contains usable fuel.
  - B. Position the CROSSFEED selector to the open position.
6. When the center tank LOW PRESSURE light illuminates:
  - A. Position the operating center tank FUEL PUMP switch to OFF.
  - B. Position the CROSSFEED selector to the closed position.

NOTE: Prior to the center tank LOW PRESSURE light illuminating, a fuel imbalance between the main tanks may be indicated as a result of differences in the fuel pump output pressures when operating with the crossfeed valve open.
7. For landing:
  - A. Position the operating center tank FUEL PUMP switch to OFF whether or not the center tank contains usable fuel.
  - B. Position the CROSSFEED selector to the closed position whether or not the center tank contains usable fuel.

**28-02            Fuel Boost Pumps (Center Tank)**  
**28-02C          Both Pumps Inoperative**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided:

- a. Center tank quantity indication operates normally.
- b. Center tank remains empty or zero fuel weight calculations are adjusted by weight of center tank fuel.
- c. Boost pump is deactivated.

NOTE: AFM limitations for fuel loading must be observed.

-----

**MAINTENANCE (M)**

1. Position the associated CTR FUEL PUMP switch to OFF.

**For -800:**

3. Open and collar the associated center tank fuel pump circuit breaker on the Power Distribution Panel P91 or P92.



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2.28-02.3  
Internal Use Only

**28-03 Fuel Boost Pump Low Pressure Warning Light****Systems****28-03-01 Main Tank Pump Low Pressure Warning Light****Systems**

Interval	Installed	Required	Procedure
C	4	3	(M) (O)

May be inoperative provided :

- a. Associated fuel pump is not used.
  - b. MASTER CAUTION lights and FUEL system annunciator light are verified to operate normally.
- 

**MAINTENANCE (M)****For -800:**

Verify the MASTER CAUTION lights and FUEL system annunciator light operate normally in affected main tank (AMM 28-00-00/901).

1. Reset the MASTER CAUTION lights by pressing either Master Caution light module.
2. Set fuel boost pump switches in affected fuel tank to OFF.
3. Confirm MASTER CAUTION lights and FUEL system annunciator panel light illuminate.
4. If MASTER CAUTION lights and FUEL system annunciator panel light illuminate, no further maintenance steps required.
5. If MASTER CAUTION lights and FUEL system annunciator panel light do not illuminate, proceed to step 6.
6. Install a jumper plug to associated boost pump low pressure switch connector.
  - A. Remove connector from associated boost pump low pressure switch and install 4M Sigma Corporation jumper plug 4MS-737NG-1 or equivalent.
  - B. Secure jumper plug and associated wiring.
  - C. Cover exposed main tank low pressure switch connector with protective cover M83723-60-210AN.
  - D. Reset the MASTER CAUTION lights by pressing either Master Caution light module.
  - E. Set the main tank fuel boost pump switch to ON (boost pump without the jumper plug on the low pressure switch in affected tank) and verify the LOW PRESSURE light extinguishes.
  - F. Set the main tank fuel boost pump switch to OFF (boost pump without the jumper plug on the low pressure switch in affected tank) and verify the LOW PRESSURE light illuminates. Verify MASTER CAUTION lights and FUEL system annunciator panel light illuminate.

**OPERATIONS (O)**

Observe MEL item 28-1 REMARKS OR EXCEPTIONS requirements and the Operational requirements when dispatching with a fuel boost pump low pressure warning system inoperative and the associated fuel pump is not used.

---

<b>28-03</b>	<b>Fuel Boost Pump Low Pressure Warning Light Systems</b>		
<b>28-03-01</b>	<b>Main Tank Pump Low Pressure Warning Light Systems</b>		
<b>28-03-01-01</b>	<b>Main Tank Pump Lights</b>		
<b>28-03-01-01A</b>	<b>Both Pumps Operate Normally</b>		

Interval	Installed	Required	Procedure
C	4	3	

One may be inoperative provided:

- a. Both pumps in associated tank operate normally.
  - b. Associated tank quantity indicator operates normally.
- 

<b>28-03</b>	<b>Fuel Boost Pump Low Pressure Warning Light Systems</b>		
<b>28-03-01</b>	<b>Main Tank Pump Low Pressure Warning Light Systems</b>		
<b>28-03-01-01</b>	<b>Main Tank Pump Lights</b>		
<b>28-03-01-01B</b>	<b>Pump Inoperative</b>		

Interval	Installed	Required	Procedure
C	4	3	

May be inoperative for an associated inoperative pump.

---

<b>28-03</b>	<b>Fuel Boost Pump Low Pressure Warning Light Systems</b>		
<b>28-03-02</b>	<b>Center Tank Pump Low Pressure Warning Light Systems</b>		
<b>28-03-02A</b>	<b>Center Tank Fuel Usable</b>		

Interval	Installed	Required	Procedure
C	2	1	(M) (O)

May be inoperative provided:

- a. Associated fuel pump is not used.
  - b. MASTER CAUTION lights and FUEL system annunciator light are verified to operate normally.
-

**MAINTENANCE (M)**

*For -800:*

Verify the MASTER CAUTION lights and FUEL system annunciator light operate normally (AMM 28-00-00/901).

1. Airplanes without Boeing Service Bulletin 737-28A1206 or equivalent installed:
  - A. Set the two CTR FUEL PUMPS switches to OFF.
  - B. Open and collar the associated circuit breakers for both center pumps on Power Distribution Panel P91 and P92.
  - C. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.
  - D. Set the two CTR FUEL PUMPS switches to ON.
  - E. Confirm MASTER CAUTION lights and FUEL system annunciator panel light illuminate.
  - F. Set the two CTR FUEL PUMPS switches to OFF.
  - G. Close the associated circuit breakers for both center pumps on Power Distribution Panel P91 and P92.
  - H. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.
2. Airplanes with Boeing Service Bulletin 737-28A1206 or equivalent installed:
  - A. Set the two CTR FUEL PUMPS switches to OFF.
  - B. Open and collar the associated center tank fuel boost pump circuit breaker for the center tank pump on Power Distribution Panel P91 or P92.
  - C. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.
  - D. Set the associated center tank fuel boost pump switch to ON.
  - E. Confirm MASTER CAUTION lights and FUEL system annunciator panel light illuminate after approximately 10 seconds.
  - F. Set the associated center tank fuel boost pump switch to OFF.
  - G. Close the associated circuit breaker on Power Distribution Panel P91 and P92.
  - H. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.

**OPERATIONS (O)**

Observe MEL item 28-2 REMARKS OR EXCEPTIONS requirements and the Operational requirements when dispatching with a fuel boost pump low pressure warning system inoperative and the associated fuel pump is not used.

---

<b>28-03</b>	<b>Fuel Boost Pump Low Pressure Warning Light Systems</b>
<b>28-03-02</b>	<b>Center Tank Pump Low Pressure Warning Light Systems</b>
<b>28-03-02B</b>	<b>Center Tank Fuel Not Required For Flight</b>

---

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided center tank fuel quantity indicator operates normally.

- a. Center tank fuel is not required for flight.
  - b. Center tank fuel boost pumps are turned off.
  - c. Center tank remains empty or zero fuel weight calculations are adjusted by weight of center tank fuel.
- 

<b>28-03</b>	<b>Fuel Boost Pump Low Pressure Warning Light Systems</b>
<b>28-03-02</b>	<b>Center Tank Pump Low Pressure Warning Light Systems</b>

<b>28-03-02-01</b>	<b>Center Tank Pump Lights</b>
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Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided:

- a. Center tank fuel quantity indicator operates normally.
  - b. MASTER CAUTION lights and FUEL system annunciator light are verified to operate normally.
- 

### **MAINTENANCE (M)**

When dispatching with one or both center tank fuel pump LOW PRESSURE lights inoperative and center tank fuel is to be used, the MASTER CAUTION lights and FUEL system annunciator panel light must illuminate when center tank fuel is depleted.

#### For -800:

Verify the MASTER CAUTION lights and FUEL system annunciator light operate normally (AMM 28-00-00/901).

1. Airplanes without Boeing Service Bulletin 737-28A1206 or equivalent installed:
  - A. Set the two CTR FUEL PUMPS switches to OFF.
  - B. Open and collar the associated circuit breakers for both center pumps on Power Distribution Panel P91 and P92.
  - C. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.
  - D. Set the two CTR FUEL PUMPS switches to ON.

- E. Confirm that MASTER CAUTION lights and FUEL system annunciator panel light illuminate.
  - F. Set the two CTR FUEL PUMPS switches to OFF.
  - G. Close the associated circuit breakers for both center pumps on Power Distribution Panel P91 and P92.
  - H. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.
2. Airplanes with Boeing Service Bulletin 737-28A1206 or equivalent installed:
- A. Set the two CTR FUEL PUMPS switches to OFF.
  - B. Open and collar the associated center tank fuel boost pump circuit breaker for the center tank pump on Power Distribution Panel P91 or P92.
  - C. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.
  - D. Set the associated center tank fuel boost pump switch to ON.
  - E. Confirm MASTER CAUTION lights and FUEL system annunciator panel light illuminate after approximately 10 seconds.
  - F. Set the associated center tank fuel boost pump switch to OFF.
  - G. Close the associated circuit breaker on Power Distribution Panel P91 and P92.
  - H. Reset MASTER CAUTION lights by pressing either MASTER CAUTION light module.

### **OPERATIONS (O)**

When dispatching with one or both center tank fuel pump LOW PRESSURE lights inoperative and center tank fuel is to be used, position the two CTR FUEL PUMPS switches to OFF when both the MASTER CAUTION lights and the FUEL system annunciator panel light illuminate as a result of center tank fuel depletion.

**28-04 APU Fuel Valve**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative provided:

- a. APU is not used.
  - b. Valve is deactivated closed.
- 

**MAINTENANCE (M)**
*For -800:*

Deactivate the APU fuel shutoff valve (AMM 28-00-00/901):

1. Open and collar these circuit breakers on the P6 panel:
  - A. AUX POWER UNIT CONT
  - B. APU FIRE SW POWER.
2. Locate valve on the left wing rear spar in the wheel well.
3. Remove, cap and stow the electrical connector.
4. If necessary, use the manual override handle to close valve.
5. Lockwire manual override handle in closed position.
6. Advise MOC, FDC and OCC that APU cannot be used and operation at downline stations may be affected, and EDTO (if applicable) is not allowed.

**OPERATIONS (O)**

1. Dispatch is not allowed if the APU is required by other procedures.
2. APU must not be started.
3. EDTO operations are prohibited.

**28-05 Crossfeed VALVE OPEN Light**

Interval	Installed	Required	Procedure
C	1	0	(M) [E]

Except for EDTO operations, may be inoperative provided:

- a. Crossfeed valve is verified to operate normally.
- b. Fuel quantity indication for both main tanks operates normally.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO (if applicable) is not allowed.

For -800:

Do the Crossfeed Valve Open Light Deactivation Procedure (AMM 28-00-00/901).

**28-06 Flight Deck Fuel Quantity Indicators (Main Tanks)**

Interval	Installed	Required	Procedure
C	2	1	(M) (O) [E]

Except for EDTO operations, one may be inoperative provided:

- a. All boost pumps in associated tank operate normally.
- b. Fuel flow meters operate normally.
- c. Center tank indicator operates normally.
- d. Flight crew periodically computes fuel remaining, or checks fuel remaining against a pre-computed fuel burn chart.
- e. Fuel quantity in associated main tank is verified by an acceptable procedure.
- f. If the defect also affects refuelling control panel indications, the aircraft is also dispatched under MEL item 28-12.

**NOTE 1:** Inoperative fuel quantity main tanks indications can affect refueling control panel quantity indications. See MEL item 28-12.

For -800:

NOTE 2: If the FQIS is not blank and either has unusual fluctuations or shows an incorrect fuel quantity, deactivate the FQIS. Flight crews can manually enter current fuel on board via the FMC PERF INIT page to calculate reference speeds or fuel remaining at destination. Periodic manual updating is required for information to remain valid.

For -800:

NOTE 3: The fuel LOW alert and fuel IMBAL alert may not be displayed when appropriate.

### **MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO (if applicable) is not allowed.

For -800:

Do the fuel servicing procedures when a fuel quantity indicator does not operate (AMM 12-11-00).

This procedure uses a bussing plug jumper harness for the main tank 1 FQIS or main tank 2 FQIS deactivation,(AMM 28-00-00/901).

If the fuel quantity indicator is blank intermittently or if the fuel quantity indicator shows an incorrect fuel quantity, deactivate the main tank with intermittent or non-functioning FQIS.

If two of the three tank FQIS indications on the airplane are intermittent or non-functional, the airplane cannot be dispatched.

1. Open FUEL FUELING CONT, FUEL FUELING IND, FUEL QTY 2 and FUEL QTY 1 circuit breakers on P6 panel.
2. Disconnect the external fuel tank bussing plug per AMM Task 28-41-41-000-801. For main tank 1 disconnect D11312 or For main tank 2 disconnect D11314.

- 
3. Cap and stow the connector for the external fuel tank bussing plug (SWPM 20-10-11, Section 18).

NOTE: Fold excess wires. Do not coil the wires.

4. Leave the overall shields intact (reference WDM 28-41-11) if the wire can be safely stowed without damaging the shield ground wire.
5. Install the pre-fabricated bussing plug jumper harness.
6. Connect the jumper harness terminal lug to the grounding stud GD3982-ST for main tank 1 or GD3986-ST for main tank 2.
7. Close FUEL FUELING CONT, FUEL FUELING IND, FUEL QTY 2 and FUEL QTY 1 circuit breakers on P6 panel.
8. Verify that the display on the refuel indicator is blank (does NOT show fuel quantity) per AMM Task 28-41-00-710-801. Also verify on the flight deck, CDU does NOT show total fuel quantity and that the fuel is blank in the upper display.

Do the following steps to make the pre-fabricated bussing plug connector jumper harness (use an applicable spare bussing plug connector to make the bussing plug connector jumper harness):

1. Make a wire with a coax contact on one end and a terminal lug on the other for Hi-Z and Hi-Z shield (maximum length 24 inches), using BMS 13-60 wire, type 8 or type 11, class 1; or BMS 13-48, type 37, class 1.
  - A. Use coax contact S283U007-7 (SWPM 20-61-11). The coax contact is sufficient to contact the Hi-Z and Hi-Z shield signals on the end connecting to the bussing plug connector.
  - B. Terminate the coax shield signal (wire shield) and inner conductor together at a single terminal lug suitable for a grounding stud.
  - C. Insert the wire into pin 1 of the bussing plug (for airplanes with the densitometer option, use pin 2)
2. Make a wire for the compensator signal to grounding stud (maximum length 24 inches), using BMS 13-60, type 10, class 1; or BMS 13-48, type 31, class 1; or BMS 13-48, type 65, class 1.
  - A. Use contact BACC47CP2T (SWPM 20-61-11).
  - B. Insert the wire into pin 3 of the bussing plug (for airplanes with the densitometer option, use pin 21).
3. Make a wire for the Lo-Z signal to grounding stud (maximum length 24 inches), using BMS 13-60, type 10, class 1; or BMS 13-48, type 31, class 1; or BMS 13-48, type 65, class 1.
  - A. Use contact BACC47CP2T (SWPM 20-61-11).
  - B. Insert the wire into pin 2 of the bussing plug (for airplanes with the densitometer option, use pin 1).
4. Assemble the terminal lugs per SWPM 20-30-11  
NOTE 1: It is suggested that the wires be terminated to a single terminal lug.  
NOTE 2: Fold excess wires. Do not coil the wires.

**OPERATIONS (O)**

1. The MEL requirement to keep track of the fuel burn is intended to ensure that the pilot will notice an abnormal fuel feed situation and correct the resulting lateral fuel imbalance.  
 The following are examples of methods that accomplish this requirement and are valid with crossfeed valve closed or open.  
 Keep the CROSSFEED selector in CLOSED position, unless directed otherwise.
2. The objective of the following procedures is to assure that the fuel being consumed is coming from the intended tank. A verification of the fuel source can be made by comparing the fuel quantity change in 6 minutes to 1/10 of the fuel flow on the engine or engines feeding from that tank.  
 For example, when using center tank fuel, if the rate of quantity decrease in the center tank is one half of the sum of the fuel flow for the engines, one engine is feeding from a wing tank.

**METHOD I - FOR AIRPLANES WITH FUEL USED INDICATORS:**

	<b>Example</b>	<b>Actual</b>
a) Initial Fuel Load	28,000	
b) Fuel Remaining in Tanks (total)	7,000	
Tank 1	7,000	
Center	0	
Tank 2	INOP	
c) Fuel Used by Engines: (total)	13,300	
Engine #1	6,600	
Engine #2	6,700	
d) Fuel used by APU (refer to Operations Manual)		
2 hrs. @ 150 lbs/hr	300	
e) Total fuel used (c plus d)	13,600	
f) Total Fuel Accounted for (b plus e)	20,600	
g) Fuel remaining (a - f)	7,400	

## METHOD II - AIRPLANES WITHOUT FUEL USED INDICATORS:

Compare the precomputed fuel remaining against the actual fuel remaining. If the differences are unaccounted for and exceed 1000 pounds, perform the appropriate procedures to re-establish the proper fuel distribution.

Initial Fuel Load 22,000

CHECKPOINTS	CENTER (planned)	WINGS (planned)	CENTER (actual)	WINGS (actual)
TAKEOFF	3200	9400		
TOP OF CLIMB	0	9000		
POINT A	0	7900		
POINT B	0	6800		
POINT C	0	5700		
POINT D	0	4600		
BEGIN DESCENT	0	3500		
BEGIN APPROACH	0	3100		

Computation of fuel remaining can stop at top of descent if it is obvious that one has adequate fuel remaining. If weather, ATC or other problems cause concern, continue taking fuel flow and time readings at appropriate intervals.

For -800:

3. If VNAV capability is desired, enter and periodically update current fuel on board into the FMC.

---

**28-07                   Flight Deck Fuel Quantity Indicator (Center Tank)**  
**28-07-01               -800 (center tank remains empty)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- a. One center tank boost pump operates normally.
- b. Center tank remains empty.

**NOTE 1:** Inoperative flight deck fuel quantity indications can affect refueling control panel quantity indications (see MEL item 28-12).

**NOTE 2:** If the FQIS is not blank and either has unusual fluctuations or shows an incorrect fuel quantity, deactivate the FQIS. Flight crews can manually enter current fuel on board via the FMC PERF INIT page to calculate reference speeds or fuel remaining at destination. Periodic manual updating is required for information to remain valid.

### **MAINTENANCE NOTE**

#### For -800

This procedure uses a bussing plug jumper harness for the center tank FQIS deactivation.

If the fuel quantity indicator is blank intermittently or if the fuel quantity indicator shows as incorrect fuel quantity, deactivate the center tank with intermittent or non-functioning FQIS.

If two of the three tank FQIS indications on the airplane are intermittent or non-functional, the airplane cannot be dispatched.

1. Open FUEL FUELING CONT, FUEL FUELING IND, FUEL QTY 2 and FUEL QTY 1 circuit breakers on P6 panel.
2. Disconnect the external fuel tank bussing plug, D11316 per AMM Task 28-41-41-000-801.
3. Cap and stow the connector for the external fuel tank bussing plug (SWPM 20-10-11, Section 18).  
NOTE: Fold excess wires. Do not coil the wires.
4. Leave the overall shields intact (reference WDM 28-41-11) if the wire can be safely stowed without damaging the shield ground wire.
5. Install the pre-fabricated bussing plug connector jumper harness.
6. Connect the jumper harness terminal lug to the grounding stud immediately above GD490S.
7. Close FUEL FUELING CONT, FUEL FUELING IND, FUEL QTY 2 and FUEL QTY 1 circuit breakers on P6 panel.
8. Verify that the display on the refuel indicator is blank (does NOT show fuel quantity) per AMM Task 28-41-00-710-801. Also verify on the flight deck, CDU does NOT show total fuel quantity and that the fuel is blank in the upper display.

Do the following steps to make the pre-fabricated bussing plug connector jumper harness (use an applicable spare bussing plug connector to make the bussing plug connector jumper harness:

1. Make a wire with a coax contact on one end and a terminal lug on the other for Hi-Z and Hi-Z shield (maximum length 24 inches), using BMS 13-60 wire, type 8 or type 11, class 1; or BMS 13-48, type 37, class 1.
  - A. Use coax contact S283U007-7 (SWPM 20-61-11). The coax contact is sufficient to contact the Hi-Z and Hi-Z shield signals on the end connecting to the bussing plug connector.
  - B. Terminate the coax shield signal (wire shield) and inner conductor together at a single terminal lug suitable for a grounding stud.
  - C. Insert the wire into pin 1 of the bussing plug (for airplanes with the densitometer option, use pin 2)
2. Make a wire for the compensator signal to grounding stud (maximum length 24 inches), using BMS 13-60, type 10, class 1; or BMS 13-48, type 31, class 1; or BMS 13-48, type 65, class 1.
  - A. Use contact BACC47CP2T (SWPM 20-61-11).
  - B. Insert the wire into pin 3 of the bussing plug (for airplanes with the densitometer option, use pin 21).
3. Make a wire for the Lo-Z signal to grounding stud (maximum length 24 inches), using BMS 13-60, type 10, class 1; or BMS 13-48, type 31, class 1; or BMS 13-48, type 65, class 1.
  - A. Use contact BACC47CP2T (SWPM 20-61-11).
  - B. Insert the wire into pin 2 of the bussing plug (for airplanes with the densitometer option, use pin 1).
4. Assemble the terminal lugs per SWPM 20-30-11.

NOTE 1: It is suggested that the wires be terminated to a single terminal lug.

NOTE 2: Fold excess wires. Do not coil the wires.

### **OPERATIONS NOTE**

If VNAV capability is desired, enter and periodically update current fuel on board into the FMC.

---

**28-07            Flight Deck Fuel Quantity Indicator (Center Tank)**  
**28-07-04        -800 (fuel in center tank) with Boeing Service Bulletin**  
**737-28A1206 or production equivalent installed**

Interval	Installed	Required	Procedure
<b>C</b>	<b>1</b>	<b>0</b>	<b>(M) [E]</b>

Except for EDTO operations, may be inoperative provided:

- a. Both center tank boost pumps operate normally.
- b. Fuel quantity in center tank is verified by an acceptable procedure.

- NOTE 1: Inoperative flight deck fuel quantity indications can affect refueling control panel quantity indications (see MEL item 28-12).
- NOTE 2: If the FQIS is not blank and either has unusual fluctuations or shows an incorrect fuel quantity, deactivate the FQIS. Flight crews can manually enter current fuel on board via the FMC PERF INIT page to calculate reference speeds or fuel remaining at destination. Periodic manual updating is required for information to remain valid.
- NOTE 3: Fuel CONFIG alert may not be displayed when appropriate.

### **MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO (if applicable) is not allowed.

Verify the fuel quantity of the center tank (AMM 12-11-00).

This procedure uses a bussing plug jumper harness for the center tank FQIS deactivation,(AMM 28-00-00/901).

If the fuel quantity indicator is blank intermittently or if the fuel quantity indicator shows an incorrect fuel quantity, deactivate the center tank with intermittent or non-functioning FQIS.

If two of the three tank FQIS indications on the airplane are intermittent or non-functional, the airplane cannot be dispatched.

1. Open FUEL FUELING CONT, FUEL FUELING IND, FUEL QTY 2 and FUEL QTY 1 circuit breakers on P6 panel.
2. Disconnect the external fuel tank bussing plug, D11316 per AMM Task 28-41-41-000-801.
3. Cap and stow the connector for the external fuel tank bussing plug (SWPM 20-10-11, Section 18).  
**NOTE:** Fold excess wires. Do not coil the wires.
4. Leave the overall shields intact (reference WDM 28-41-11) if the wire can be safely stowed without damaging the shield ground wire.
5. Install the pre-fabricated bussing plug connector jumper harness.
6. Connect the jumper harness terminal lug to the grounding stud immediately above GD490S.
7. Close FUEL FUELING CONT, FUEL FUELING IND, FUEL QTY 2 and FUEL QTY 1 circuit breakers on P6 panel.
8. Verify that the display on the refuel indicator is blank (does NOT show fuel quantity) per AMM Task 28-41-00-710-801. Also verify on the flight deck, CDU does NOT show total fuel quantity and that the fuel is blank in the upper display.

Do the following steps to make the pre-fabricated bussing plug connector jumper harness (use an applicable spare bussing plug connector to make the bussing plug connector jumper harness:

1. Make a wire with a coax contact on one end and a terminal lug on The other for Hi-Z and Hi-Z shield (maximum length 24 inches), using

BMS 13-60 wire, type 8 or type 11, class 1; or BMS 13-48, type 37, class 1.

- A. Use coax contact S283U007-7 (SWPM 20-61-11). The coax contact is sufficient to contact the Hi-Z and Hi-Z shield signals on the end connecting to the bussing plug connector.
  - B. Terminate the coax shield signal (wire shield) and inner conductor together at a single terminal lug suitable for a grounding stud.
  - C. Insert the wire into pin 1 of the bussing plug (for airplanes with the densitometer option, use pin 2)
2. Make a wire for the compensator signal to grounding stud (maximum length 24 inches), using BMS 13-60, type 10, class 1; or BMS 13-48, type 31, class 1; or BMS 13-48, type 65, class 1.
    - A. Use contact BACC47CP2T (SWPM 20-61-11).
    - B. Insert the wire into pin 3 of the bussing plug (for airplanes with the densitometer option, use pin 21).
  3. Make a wire for the Lo-Z signal to grounding stud (maximum length 24 inches), using BMS 13-60, type 10, class 1; or BMS 13-48, type 31, class 1; or BMS 13-48, type 65, class 1.
    - A. Use contact BACC47CP2T (SWPM 20-61-11).
    - B. Insert the wire into pin 2 of the bussing plug (for airplanes with the densitometer option, use pin 1).
  4. Assemble the terminal lugs per SWPM 20-30-11.

NOTE 1: It is suggested that the wires be terminated to a single terminal lug.

NOTE 2: Fold excess wires. Do not coil the wires.

## **OPERATIONS NOTE**

If desired, fuel remaining in the center tank can be determined using the fuel used indicators method or the operative tank indicators. Refer to MEL item 28-06 Operations procedure.

If VNAV capability is desired, enter and periodically update current fuel on board into the FMC.



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## Section 2: ATA 28 Fuel

**28-08 Fuel Temperature Indicator**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided Total Air Temperature or Ram Air Temperature is substituted as an indication of fuel temperature.

**28-09 Fuel Quantity Totalizer**

Interval	Installed	Required	Procedure
C	1	0	

*For -800:*

NOTE 1: The FMC CDU will display a VERIFY GW AND FUEL message if the FMC receives no data or receives a "no valid data" signal from the Fuel Quantity Processor Unit (FQPU). If total fuel is in error, one of the fuel tank quantities is also in error. the fuel tank quantity that is not correct should be addressed by appropriate MMEL item for that tank 28-06 or 28-07. If the fuel indication for the tank fluctuates, is incorrect or is intermittent, that tanks fuel indication should be deactivated using the appropriate DDG procedure. Once the tank has been deactivated, total fuel will then change to "no computed data" which will allow the flight crew to manually enter current fuel on board via the FMC PERF INIT page to calculate reference speeds or fuel remaining at destination. Periodic manual updating is required for information to remain valid.

**OPERATIONS NOTE***For -800:*

4. If VNAV capability is desired, enter and periodically update current fuel on board into the FMC.

**28-10 Pressure Fueling System**

Interval	Installed	Required	Procedure
-	1	1	

Must be operative.

**28-10 Pressure Fueling System**  
**28-10-01 Fueling Manifold Check Valves**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided associated Fueling Shutoff Valve is verified to operate normally.

**MAINTENANCE (M)**
*For -800:*

Verify fueling shutoff valve(s) operates normally (AMM 28-00-00/901):

*For All Models:*

1. During refueling, observe that the valve position light illuminates/extinguishes normally when opening/closing the associated fueling shutoff valve.
2. After refueling nozzle is disconnected, visually check for fuel leakage.

**28-10 Pressure Fueling System**  
**28-10-02 Fueling Shutoff Valves**

Interval	Installed	Required	Procedure
C	3	0	(M)

May be inoperative closed provided:

- a. Verify the refuel valve is closed by pressurizing the fueling manifold and verify that fuel does not flow to the tank with the failed refuel valve.
- b. After removal of the fueling nozzle, check the fueling receptacle for leakage.  
Leakage is not allowed.

**MAINTENANCE (M)**
*For -800:*

Do these steps (AMM 28-00-00/901):

*For All Models:*

1. Verify that fuel load for the associated tank does not exceed the tank capacity.
2. Manually open fuel shutoff valve(s).

**CAUTION: OVERFILL PROTECTION IS INOPERATIVE. THE PRESSURE FUELING SYSTEM WILL NOT STOP THE REFUEL**

**OPERATION AT A SET FUEL QUANTITY. STOP THE FUELING SOURCE AT THE DESIRED QUANTITY FOR THE ASSOCIATED TANK.**

- A. Push manual override button.
3. Refuel the associated tank; release the manual override button at the desired fuel quantity.
4. Verify that the valve is closed.
5. Stop the fuel source pump and disconnect the refueling nozzle.
6. Verify that the fueling receptacle does not leak.

---

**28-10            Pressure Fueling System****28-10-03        Refuel Panel Fueling Power Control Switch**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative off provided refuel panel indicator test switch operates normally in AUX FUELING POWER CONTROL position or FUEL DOOR SWITCH BYPASS position, as applicable.

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Section 2: ATA 28  
Fuel

**28-11 Fueling Bay Fuel Cap**

Interval	Installed	Required	Procedure
D	1	0	

**28-12 Refueling Control Panel Quantity Indicators**

Interval	Installed	Required	Procedure
C	4	0	(M)

May be inoperative provided fuel quantity is verified by an acceptable procedure.

Note: If the defect also affects refueling quantity indications in the cockpit, the aircraft is also dispatched under MEL item 28-06.

-----

**MAINTENANCE (M)**

For -800:

1. Verify fuel quantity (AMM 28-00-00/901):

For All Models:

2. Refuel using fuel quantity indicators on the pilots center instrument panel (if operable) or AMM 12-11-00 procedures, Fuel Servicing - Refuel Operation When the Fuel Quantity Indicating System Does Not Operate.



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Section 2: ATA 28  
Fuel

**28-13            DELETED (Manually Operated Defueling Valve)**

Interval	Installed	Required	Procedure

Deleted prior to Revision 27.

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**28-16 Fuel Measuring Sticks/Dripsticks**

Interval	Installed	Required	Procedure
C	16	0	(M)

May be inoperative or broken/missing provided fuel quantity is determined by other acceptable means.

- - - - -

**MAINTENANCE (M)**

If fuel leakage is detected, verify that the leakage does not exceed acceptable limits (AMM 28-11-00).

**28-17      Fuel Scavenge System**
**28-17A      Valve Closed**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative with fuel scavenge shutoff valve closed.

**28-17      Fuel Scavenge System**
**28-17B      Valve Open**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative with fuel scavenge shutoff valve open provided No. 1 main fuel tank forward boost pump remains off.

**OPERATIONS (O)**

1. Make sure the No.1 main tank FWD FUEL PUMPS switch remains in the OFF position.
2. Observe the REMARKS OR EXCEPTIONS of MEL item 28-01.

**28-17      Fuel Scavenge System**
**28-17C      Tank Empty**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative with fuel scavenge shutoff valve open provided center tank remains empty.

**28-21            Fuel Quantity Test Switches**  
**28-21-01        Digital System**

Interval	Installed	Required	Procedure
C	3	0	

---

**28-22            FUEL/SPAR VALVE CLOSED Lights**  
**28-22-02        SPAR VALVE CLOSED Lights (-800)**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided:

- a. Associated valve is verified to operate normally.
  - b. Crossfeed VALVE OPEN light operates normally.
- 

NOTE: For airplanes with a fuel spar valve actuator having part number MA20A2027 (S343T003-56) or MA30A1001 (S343T003-66) installed at the engine fuel spar valve positions, ensure compliance with AD 2015-21-10.

**MAINTENANCE (M)**

Verify that the affected valve operates normally per Spar Valve Closed Light Deactivation Procedure (AMM 28-00-00/901).

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**28-24                  MOVED (Refuel Panel Fueling Power Control Switch)**

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Interval	Installed	Required	Procedure

Incorporated as a sub-item in 28-10, Rev. 47a.

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**28-25 Center Tank Fuel Boost Pump Automatic Shut Off System**

**28-25-01 All Models**

**28-25-01A Center Tank Fuel Pump Considered Inoperative**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided associated center tank fuel boost pump is considered inoperative.

#### **OPERATIONS NOTE**

Also dispatch the airplane using MEL Item 28-02.

**28-25 Center Tank Fuel Boost Pump Automatic Shut Off System**

**28-25-01 All Models**

**28-25-01B Center Tank Remains Empty**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided center tank remains empty.

#### **MAINTENANCE NOTE**

Set the associated CTR FUEL PUMP switch to OFF.

**28-25 Center Tank Fuel Boost Pump Automatic Shut Off System**

**28-25-03 -800**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative with center tank fueled provided:

- a. Both center tank fuel boost pump Low Pressure Warning Light Systems operate normally.
- b. Center tank fuel quantity indication operates normally.
- c. Center tank fuel boost pumps must not be ON unless personnel are available in the flight deck to monitor low pressure lights.
- d. For ground operations, center tank fuel boost pump switches must not be positioned to ON unless the center tank fuel quantity exceeds 1,000 pounds (453 kg), except when defueling or transferring fuel.
- e. Center tank fuel boost pumps are OFF for takeoff if center tank fuel is less than 5,000 pounds (2,300 kg) with the airplane readied for initial taxi.
- f. Both center tank fuel boost pumps are selected to OFF when center tank fuel quantity reaches 1,000 pounds (453 kg) of fuel during climb and cruise.
- g. Both center tank boost pumps are selected OFF when center tank fuel quantity reaches 3,000 pounds (1,400 kg) of fuel during descent and landing.

- h. Both center tank fuel boost pumps are positioned OFF at first indication of fuel pump low pressure.
- i. Center tank fuel boost pumps may be positioned ON when established in cruise flight if the center tank contains more than 1,000 pounds (453 kg) of fuel.
- j. If the main tanks are not full, the zero fuel gross weight of the airplane plus the weight of center tank fuel may exceed the maximum zero fuel weight by up to 5,000 pounds (2,300 kg) for takeoff, climb and cruise and up to 3,000 pounds (1,400 kg) for descent and landing, provided that the effects of balance (CG) have been considered.
- k. Defueling with passengers on board is prohibited.

-----  
NOTE: If the Automatic Shut Off System (Airplanes with Service Bulletin 737-28A1206, or Production Equivalent Installed) is inoperative, ensure compliance with AD 2001-08-24 and AD 2002-24-51.

**28-26 Fuel Shutoff Valve Battery and Charger (-800)**

Interval	Installed	Required	Procedure
D	1	0	(M)

May be inoperative deactivated.

-----

**MAINTENANCE (M)**

Deactivate the Fuel Shutoff Valve Battery and Charger (AMM 28-00-00/901).

1. Open and collar the FUEL SHUTOFF VALVES PWR PACK circuit breaker C1471 on the P6-3 panel.

Intentionally Blank

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Hydraulic Power**

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Hydraulic Power

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**29-02            System B Pumps**

**29-02-02        Engine Driven Hydraulic Pump Depressurization  
Function (-800)**

Interval	Installed	Required	Procedure
C	1	0	

NOTE: To avoid damage to steering components or towing equipment when System B hydraulics is used for steering, install nose gear steering lockout pin in steering depressurization valve when airplane is to be pushed back or towed with engines operating.

**29-03            System Pressure Indications (A and B)**  
**29-03-02        -800**

Interval	Installed	Required	Procedure
C	2	1	(O)

One may be inoperative provided:

- a. System pressure is checked before each departure.
  - b. All hydraulic low pressure lights operate normally.
- 

**OPERATIONS (O)****System A Pressure Verification:**

Verify that Flight Control LOW PRESSURE light for system A extinguishes when hydraulic system is pressurized.

**System B Pressure Verification:**

1. With Systems A and B depressurized, verify that the brake pressure indicator shows less than 2800 psi. If not, apply brakes and pressure should drop.
2. Select the flight control and spoiler switches OFF
3. Pressurize System B hydraulics with ELEC 1.
4. Verify brake pressure:

Make sure the brake pressure increases to between 2800 psi and 3200 psi.

5. Select spoiler switch ON.
6. Verify the Flight Control LOW PRESSURE light for system B is illuminated.
7. Select flight control switch ON.
8. Verify that Flight Control LOW PRESSURE light for system B extinguishes.
9. Restore airplane to its required configuration.

**29-04 System A Pump Low Pressure Indication Systems**

Interval	Installed	Required	Procedure
C	2	1	(O)

One may be inoperative provided output of associated pump is checked before each departure.

-----

**MAINTENANCE NOTE**

If the associate pressure switch is inoperative, cap and stow electrical connector.

**OPERATIONS (O)**

1. ENG 1 LOW PRESSURE light inoperative:
  - A. Dry motor or start No. 1 engine.
  - B. Position ENG 1 hydraulic pump switch ON.
  - C. Position ELEC 2 hydraulic pump switch OFF.
  - D. Position the flight control and spoiler switches OFF.
  - E. Verify system A pressure:  
Make sure the pressure is between 2800 psi and 3200 psi.
  - F. Restore airplane to its required configuration.
2. ELEC 2 LOW PRESSURE light inoperative:
  - A. Power Transfer Bus No. 2.
  - B. Position ELEC 2 hydraulic pump switch ON.
  - C. Position ENG 1 hydraulic pump switch OFF.
  - D. Position the flight control and spoiler switches OFF.
  - E. Verify system A pressure:  
Make sure the pressure is between 2800 psi and 3200 psi.
  - F. Restore airplane to its required configuration.

**29-05 System B Pump Low Pressure Indication Systems**

Interval	Installed	Required	Procedure
C	2	1	(O)

One may be inoperative provided output of associated pump is checked before each departure.

- - - - -

**MAINTENANCE NOTE**

If the associated pressure switch is inoperative, cap and stow electrical connector.

**OPERATIONS (O)**

1. ELEC 1 LOW PRESSURE light inoperative:
  - A. Power Transfer Bus No. 1.
  - B. Position ELEC 1 hydraulic pump switch ON.
  - C. Position ENG 2 hydraulic pump switch OFF.
  - D. Position the flight control and spoiler switches OFF.
  - E. Verify system B pressure:  
Make sure the pressure is between 2800 psi and 3200 psi.
  - F. Restore airplane to its required configuration.
2. ENG 2 LOW PRESSURE light inoperative:
  - A. Dry motor or start No. 2 engine.
  - B. Position ENG 2 hydraulic pump switch ON.
  - C. Position ELEC 1 hydraulic pump switch OFF.
  - D. Position the flight control and spoiler switches OFF.
  - E. Verify system B pressure:  
Make sure the pressure is between 2800 psi and 3200 psi.
  - F. Restore airplane to its required configuration.



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**29-06            MOVED (Hydraulic Brake Pressure Indicator)**

---

Interval	Installed	Required	Procedure

Moved to Item 32-13, Revision 33.

-----  
EL

**29-07 System A and B Overheat Lights System**  
**29-07-03 -800**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided associated Low Pressure light operates normally.

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**29-09      Hydraulic Quantity Low Level Light System (Standby System)**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided quantity is verified adequate before each departure.

-----

**MAINTENANCE (M)****For -800:**

Verify hydraulic quantity is adequate before each departure (AMM 29-00-00/901).

1. With flaps/leading edge devices retracted, spoilers down, and all control surfaces in neutral position, verify that Hydraulic System B gauge or indication indicates more than "RFL" or "RF", as applicable (6.9 U.S. gallons).
2. To prevent illumination of the Master Caution light due to an inoperative low level quantity switch in the standby system, disconnect and stow the cannon plug to the quantity switch.
3. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**29-10      System A Pumps****29-10-01    Engine Driven Hydraulic Pump Depressurization  
Function**

Interval	Installed	Required	Procedure
C	1	0	

-----

**MAINTENANCE NOTE**

To avoid damage to steering components or towing equipment, install nose gear steering lockout pin in steering depressurization valve when airplane is to be pushed back or towed with engines operating.

---

**29-11            System A Quantity Indication (Flight Deck)**  
**29-11-02        -800**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided:

- a. Quantity is verified adequate before each departure.
  - b. System pressure indication operates normally.
  - c. Pump low pressure lights operate normally.
- - - - -

**MAINTENANCE (M)****For -800:**

Make sure Hydraulic System A Reservoir quantity is adequate (AMM 29-00-00/901).

Verify that:

1. Flaps/leading edge devices are retracted.
2. Spoilers are down
3. All flight controls are in neutral position
4. Thrust reversers are stowed.

Verify fluid quantity by checking the hydraulic quantity indicator mounted on the System A reservoir, visible from the fluid filling station located in the right main gear well. If quantity is low service per AMM 12-12-00/301.

5. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**29-12 Standby System Low Pressure Light**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided:

- a. Standby System low quantity light operates normally.
  - b. Output of the Standby pump is verified before each departure.
  - c. Both System B pumps operate normally.
- 

**MAINTENANCE (M)**

For -800:

Perform the following procedure prior to engine start (AMM 29-00-00/901):

1. Position the Master LIGHTS test and dim switch to TEST and verify LOW QUANTITY light illuminates.
2. Get ground clearance to extend leading edge flaps.
3. Position ALTERNATE FLAPS Master Switch to ARM.
4. Momentarily position ALTERNATE FLAPS Position Switch to DOWN.
5. On the LE DEVICES annunciator panel, verify that lights indicate all leading edge devices are fully extended within approximately one minute.
6. Return both ALTERNATE FLAPS Master and Position switches to OFF.
7. Turn Hydraulic System B ELEC 1 pump ON.
8. Verify that System B ELEC 1 LOW PRESSURE light extinguishes.
9. Leave pump on until L.E. flaps are up.
10. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**29-13 Hydraulic Reservoir Pressurization System Sources**

Interval	Installed	Required	Procedure
C	2	1	(M)

May be inoperative provided reservoir can be pressurized.

-----

**MAINTENANCE (M)****For -800:**

Verify reservoir can be pressurized (AMM 29-00-00/901):

1. Disconnect the pressurization supply line of the inoperative pneumatic source at the reservoir pressurization module or the restrictor cross fitting, as installed, located in the wheel well.
2. Install a cap on the reservoir pressurization module or the restrictor cross fitting, as installed.
3. Install a cap on the disconnected pressurization supply line.
4. Pressurize pneumatic manifold (AMM 36-00-00).
5. Verify that the hydraulic reservoir air pressure gauge(s) located on the forward wheel well bulkhead indicates the same pressure as the pneumatic duct pressure indicator on the forward overhead panel.

**29-14                  MOVED (System A Overheat Lights)**

Interval	Installed	Required	Procedure

Incorporated into item 29-07 in Revision 39.

-----

**29-15 System B Quantity Indication (Flight Deck) (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided:

- a. Quantity is verified adequate before each departure.
  - b. System pressure indication operates normally.
  - c. Pump low pressure lights operate normally.
- 

**MAINTENANCE (M)****For -800:**

Make sure Hydraulic System B Reservoir quantity is adequate (AMM 29-00-00/901).

**For All Models:**

1. Verify that:
  - A. Flaps/leading edge devices are retracted.
  - B. Spoilers are down.
  - C. All flight controls are in neutral position.
  - D. Thrust reversers are stowed.
2. Verify fluid quantity by checking the hydraulic quantity indicator mounted on the System B reservoir, visible from the fluid filling station located in the right main gear well:  
If quantity is low service per AMM 12-12-00/301.
3. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**OPERATIONS NOTE**

Nose wheel steering may not be available if hydraulic system A power is lost.

**29-16 Hydraulic Reservoir Air Pressure Indicator (Wheel Well)**

Interval	Installed	Required	Procedure
C	2	0	

---

**MAINTENANCE NOTE**

If desired, remove indicator and install a blank. The "install a blank" refers to the installation of a suitable plug/cap to the tube end of the air pressure gauge port to prevent air leakage.

29-17      **Hydraulic Reservoir Quantity Indicator (Wheel Well)**

Interval	Installed	Required	Procedure
C	2	0	

**29-18            Hydraulic Reservoir Fill System (Wheel Well)**

Interval	Installed	Required	Procedure
C	1	0	

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**30-01            Wing Anti-Ice Valves**
**30-01-00        Inoperative closed**

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>0</b>	<b>(M) (O) [E]</b>

Except for EDTO beyond 120 minutes, may be inoperative closed provided airplane is not operated in known or forecast icing conditions.

-----

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

*For -800:*

Prepare the airplane for flight with wing anti-ice valve inoperative (AMM 30-00-00/901):

1. Prepare to close the valve:

- A. Deactivate the leading edge slats (AMM 27-81-00).
- B. Open and collar the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
- C. Open the associated outboard leading edge blowout door.

2. Disconnect, cap and stow the electrical connector from the associated wing anti-ice valve.

NOTE: Disconnecting the wing anti-ice valve's electrical connector will cause the associated wing anti-ice VALVE OPEN light to illuminate bright.

3. Move the red lever on the associated wing anti-ice valve to the CLOSED position.

4. Return the airplane to its usual condition with a wing anti-ice valve closed:

- A. Close the outboard leading edge blowout door.
- B. Close the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
- C. Activate the leading edge slats (AMM 27-81-00).

**OPERATIONS (O)**

NOTE: Disconnecting the wing anti-ice valve's electrical connector will cause the associated wing anti-ice VALVE OPEN light to illuminate bright.

Do not operate in icing conditions.

---

**30-01            Wing Anti-Ice Valves**  
**30-01-02        Inoperative open (-800)**

Interval	Installed	Required	Procedure
C	2	1	(M) (O)

One may be inoperative open provided:

- a. Except for engine start, associated manifold is depressurized when outside air temperature is above 50 degrees F (10 degrees C).
- b. Associated engine bleed thrust limits are followed when manifold is pressurized.
- c. Air conditioning and pressurization requirements are followed when one manifold is depressurized.

NOTE: With wing anti-ice valve inoperative open, wing anti-ice on the affected side will always be 'ON' whenever associated bleed system is pressurized. To avoid damaging wing structure, the affected wing anti-ice must be shut off (by closing isolation valve and depressurizing the associated bleed system) whenever OAT is above 10 degrees C. The only exception to this is during engine start (in order to allow engine start even if OAT exceeds 10 degrees C, provided the duration is short).

---

### **MAINTENANCE (M)**

#### **For -800:**

1. Prepare the airplane for flight with wing anti-ice valve inoperative (AMM 30-00-00/901):
2. For dispatch with left valve open:
  - A. To open the left valve when APU bleed air will be used for engine start, do these steps:
    - 1) Deactivate the leading edge slats (AMM 27-81-00).
    - 2) Open and collar the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
    - 3) Open the associated outboard leading edge blowout door.
    - 4) Disconnect, cap and stow the electrical connector from the left wing anti-ice valve.

NOTE: Disconnecting the wing anti-ice valve's electrical connector will cause the associated wing anti-ice VALVE OPEN light to illuminate bright.
  - 5) Move the red lever on the left wing anti-ice valve to the CLOSED position.
  - 6) Make sure that all personnel are cleared from the right engine danger area.

- 7) Start the right engine (AMM 71-00-00).
  - 8) Close the isolation valve switch and APU bleed air valve switch on the flight deck to depressurize the left pneumatic duct.
  - 9) After the pneumatic duct is depressurized, move the left wing anti-ice valve to the OPEN position.
  - 10) Close the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
  - 11) Close the associated outboard leading edge blowout door.
  - 12) Activate the leading edge slats (AMM 27-81-00).
  - 13) When personnel have been cleared from engine danger area, inform flight deck that left engine may be started (using engine crossbleed).
- B. To open the left valve when ground service air will be used for engine start, do these steps:
- 1) Deactivate the leading edge slats (AMM 27-81-00).
  - 2) Open and collar the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
  - 3) Open the associated outboard leading edge blowout door.
  - 4) Disconnect, cap and stow the electrical connector from the left wing anti-ice valve.  
**NOTE:** Disconnecting the wing anti-ice valve's electrical connector will cause the associated wing anti-ice VALVE OPEN light to illuminate bright.
  - 5) Move the red lever on the left wing anti-ice valve to the OPEN position.
  - 6) Close the associated outboard leading edge blowout door.
  - 7) Close the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
  - 8) Activate the leading edge slats (AMM 27-81-00).
  - 9) When personnel have been cleared from engine danger area, inform flight deck that the right engine may be started (isolation valve closed) and then the left engine may be started (using crossbleed start).
3. For dispatch with right valve open:
- A. To open the right valve when APU bleed air will be used for engine start, do these steps:
- 1) Deactivate the leading edge slats (AMM 27-81-00).
  - 2) Open and collar the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
  - 3) Open the associated outboard leading edge blowout door.
  - 4) Disconnect, cap and stow the electrical connector from the right wing anti-ice valve.  
**NOTE:** Disconnecting the wing anti-ice valve's electrical connector will cause the associated wing anti-ice VALVE OPEN light to illuminate bright.
  - 5) Move the red lever on the right wing anti-ice valve to the OPEN

- position.
- 6) Close the associated outboard leading edge blowout door.
  - 7) Close the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
  - 8) Activate the leading edge slats (AMM 27-81-00).
  - 9) When personnel have been cleared from engine danger area, inform flight deck that the left engine may be started (isolation valve closed) and then the right engine may be started (using crossbleed start)
- B. To open the right valve when ground service air will be used for engine start, do these steps:
- 1) Deactivate the leading edge slats (AMM 27-81-00).
  - 2) Open and collar the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
  - 3) Open the associated outboard leading edge blowout door.
  - 4) Disconnect, cap and stow the electrical connector from the right wing anti-ice valve.
- NOTE: Disconnecting the wing anti-ice valve's electrical connector will cause the associated wing anti-ice VALVE OPEN light to illuminate bright.
- 5) Move the red lever on the right wing anti-ice valve to the CLOSED position.
  - 6) Make sure that all personnel are cleared from the left engine danger area.
  - 7) Start the left engine (AMM 71-00-00).
  - 8) Remove the ground air source from the airplane.
  - 9) Close the isolation valve switch on the flight deck to depressurize the right pneumatic duct.
  - 10) After the pneumatic duct is depressurized, move the right wing anti-ice valve to the OPEN position.
  - 11) Close the associated outboard leading edge blowout door.
  - 12) Close the ANTI-ICE AND RAIN WING ANTI-ICE VALVE circuit breaker.
  - 13) Activate the leading edge slats (AMM 27-81-00).
  - 14) When personnel have been cleared from engine danger area, inform flight deck that right engine may be started (using engine crossbleed).

## **OPERATIONS (O)**

NOTE 1: Disconnecting the wing anti-ice valve's electrical connector will cause the associated wing anti-ice VALVE OPEN light to illuminate bright.

NOTE 2: With the affected wing anti-ice valve open, bleed trip off and possible loss of cabin pressure above approximately FL350 may occur.

1. When the left Wing Anti-ice Valve is failed open, do not use APU bleed air for air conditioning purposes on the ground. APU may only be used for engine start.



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- 
2. When the right Wing Anti-ice Valve is failed open, APU bleed air may be used for air conditioning purposes on the ground using only the left AC pack and with the isolation valve closed.
  3. The engine bleed to the affected manifold must be off for takeoff. Position the isolation valve switch to CLOSE to maintain isolated bleed sources.
  4. When dispatching with a single engine bleed on for takeoff due to one wing anti-ice valve failed open (airplane pressurized), V1(MCG) should be determined based on AC packs OFF. Takeoff performance should be based on AC packs AUTO.
  5. Increase trip fuel burn by 2.8%.
  6. After takeoff/in flight, once OAT is 10 degrees C (or 50 degrees F) or less, pressurize the associated bleed system and set isolation valve switch to 'AUTO' position.
  7. During flight/approach & landing, if/once OAT exceeds 10 deg C (or 50 degrees F), set isolation valve switch to CLOSE position and depressurize the associated bleed system.

**30-02 Wing Anti-Ice Valve Position Lights**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided valve is verified to operate normally before operating in known or forecast icing conditions.

- - - - -

**MAINTENANCE (M)**

For -800:

Verify that associated wing anti-ice valve operates normally (AMM 30-00-00/901):

1. Deactivate the leading edge slats (AMM 27-81-00).
2. Gain access to valve.
3. Position the WING ANTI-ICE switch to the ON position.
4. Observe that position indicator on the valve indicates OPEN.
5. Position the WING ANTI-ICE switch to the OFF position.
6. Observe that position indicator on the valve indicates CLOSED.
7. Restore airplane to desired configuration and activate the leading edge slats (AMM 27-81-00).

**30-03 Engine and Nose Cowl Anti-Ice Valves**
**30-03-03 -800**
**30-03-03A Valve Inoperative Closed**

Interval	Installed	Required	Procedure
B	2	1	(M) [E]

Except for EDTO operations beyond 120 minutes, one may be inoperative closed provided airplane is not operated in known or forecast icing conditions.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

Prepare the airplane for flight with the engine anti-ice valve inoperative (AMM 30-00-00/901).

1. Open the fan cowl panels (AMM 71-11-02).
2. Position the shutoff valve in the closed position.
  - A. Loosen the retaining screw on the manual locking assembly.
  - B. Move the hex shaft to the CLOSED position.
  - C. Slide the locking assembly up the shaft into the recess in the cover plate.
  - D. Tighten the retaining screw.
3. Close the cowl panels (AMM 71-11-02).

**OPERATIONS NOTE**

Do not operate in icing conditions.

**30-03 Engine and Nose Cowl Anti-Ice Valves**
**30-03-03 -800**
**30-03-03B Valve Inoperative Open**

Interval	Installed	Required	Procedure
C	2	1	(M) (O) [P]

One may be inoperative locked open provided:

- a. Associated High Stage Valve is considered inoperative.
- b. Ambient temperature is below 100 degrees F (38 degrees C).
- c. A minimum of 60% N1 is maintained on associated engine during flight in icing conditions.
- d. Appropriate performance adjustments are applied.

**MAINTENANCE (M)**

NOTE: Dispatching with an engine and nose cowl anti-ice valve inoperative open will cause the associated COWL VALVE OPEN light to illuminate bright and the associated Thermal Anti-Ice (TAI) indication to illuminate

amber.

1. Advise MOC/FDC/OCC that performance is affected.  
Prepare the airplane for flight with the engine anti-ice valve inoperative (AMM 30-00-00/901).
2. Open the fan cowl panels and thrust reverser (AMM 78-31-00).
3. Position the shutoff valve in the open position.
  - A. Loosen the retaining screw on the manual locking assembly.
  - B. Move the hex shaft to the OPEN position.
  - C. Slide the locking assembly up the shaft into the recess in the cover plate.
  - D. Tighten the retaining screw.
4. Disconnect, cap and stow the electrical connector from the pressure switch.
5. Close off the 9th stage bleed air supply:  
NOTE: Only one high stage valve may be locked in the closed position for dispatch. Dispatch with the opposite high stage valve inoperative under MEL item 36-09 is not allowed.
  - A. Manually wrench the High Stage Valve to the CLOSE position.
  - B. Loosen the position indicator screw.
  - C. Slide the lock into the recess in the cover plate.
  - D. Tighten the position indicator screw.
6. Close the fan cowl panels and thrust reverser (AMM 78-31-00).

## **OPERATIONS (O)**

NOTE: Dispatching with an engine and nose cowl anti-ice valve inoperative open will cause the associated COWL VALVE OPEN light to illuminate bright and the associated Thermal Anti-Ice (TAI) indication to illuminate amber.

1. Operate with the associated ENG ANTI-ICE switch in the OFF position.
2. Apply adjustments to N1 limits and performance limited weights. Observe maximum operating temperature restrictions.
3. Inflight, maintain a minimum of 60% N1 on the associated engine in icing conditions.
4. During ground operations with the APU running, turn the engine bleed OFF whenever the associated engine is not running.
5. Apply a fuel mileage decrement of 1.3% to account for the engine and nose cowl anti-ice valve inoperative open.
6. Apply the following additional fuel mileage decrement to account for flight in icing conditions which require a minimum of 60% N1 on the associated engine:
  - A. 2.0% for trip distances less than or equal to 1000 nautical miles.
  - B. 1.0% for trip distances greater than 1000 nautical miles.
7. All thrust rating limits except Takeoff and Go-Around, are reduced by 1.1% N1.
8. Enroute climb limited weight is reduced by 4,000 lb. (1,810 kg).  
NOTE: Enroute climb penalties are based on single engine operating speeds that approximate maximum lift-to-drag ratio speed. To account for the



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difference in level off altitude when operating at other speeds, multiply the enroute climb weight penalty listed above by the appropriate factor listed in MEL Section 3, Enroute Diversion Speed Effects.

9. At temperatures greater than 50 degrees F (10 degrees C):
  - A. Takeoff and go-around thrust limits are reduced by 1.4% N1.
  - B. Takeoff and landing performance limited weights are reduced by 9,500 lb.  
(4,309 kg)
10. For temperatures at or below 50 degrees F (10 degrees C), base performance limited weights on Engine Anti-Ice ON.

**30-04 Engine and Nose Cowl Anti-Ice Valve Position Lights or TAI Indications**

30-04-03 -800

**30-04-03A Other Valve Indication on Affected Engine Operates Normally**

Interval	Installed	Required	Procedure
C	4	2	

One valve position indication (either COWL VALVE OPEN light or TAI indication) for each engine may be inoperative provided other valve position indication for that engine operates normally.

**30-04 Engine and Nose Cowl Anti-Ice Valve Position Lights or TAI Indications**

30-04-03 -800

**30-04-03B Valve Verified to Operate Normally**

Interval	Installed	Required	Procedure
C	4	0	(O)

May be inoperative provided valve is verified to operate normally before each departure.

**OPERATIONS (O)**

Verify proper operation of the engine and nose cowl anti-ice valve before each departure:

1. Start the associated engine.
2. Wait for the engine to stabilize at idle.
3. Verify that the engine and APU bleed air switches are in the OFF position.
4. Verify that the ENG ANTI-ICE switch is in the OFF position.
5. Monitor the EGT:
  - A. Wait for the EGT to stabilize and record the temperature.

**CAUTION: LIMIT COWL TAI OPERATION TO 30 SECONDS MAXIMUM.**

- B. Put the ENG ANTI-ICE switch in the ON position.
- C. Wait for the EGT to stabilize and record the temperature.
- D. Position ENG ANTI-ICE switch to OFF.
- E. Wait for the EGT to stabilize and record the temperature.
6. Verify that the following changes occurred:
  - A. The EGT increased by a minimum of 15 degrees C when the ENG ANTI-ICE switch was put in the ON position.
  - B. The EGT returned to the original idle temperature when the ENG ANTI-ICE switch was put in the OFF position.
7. Shut down the engine if required.

**30-04            Engine and Nose Cowl Anti-Ice Valve Position Lights**
**or TAI Indications**
**30-04-03        -800**
**30-04-03C      Valve Considered Inoperative**

Interval	Installed	Required	Procedure
C	4	2	

May be inoperative provided associated valve is considered inoperative. Refer MEL item 30-03.

**OPERATIONS NOTE**

The associated engine and nose cowl anti-ice valve is considered inoperative.  
 The airplane must also be dispatched using MEL item 30-03.

**30-04            Engine and Nose Cowl Anti-Ice Valve Position Lights**
**or TAI Indications**
**30-04-04        MOVED [All Models]**

Interval	Installed	Required	Procedure

This item has been moved into MEL 30-04-01, 30-04-02 and 30-04-03 as applicable.

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**30-05 Pitot/Static Probe Heaters**

**30-05-02 -800**

**30-05-02-01 Left/Right Pitot Heaters**

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>1</b>	<b>(M) [E]</b>

Except for EDTO operations beyond 120 minutes, one may be inoperative for day VMC provided:

- a. Aux Pitot heater operates normally.
  - b. Airplane is not operated in visible moisture.
  - c. Airplane is not operated in known or forecast icing conditions.
- 

**MAINTENANCE(M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

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**30-05 Pitot/Static Probe Heaters**

**30-05-02 -800**

**30-05-02-02 Aux Pitot Heater (Right Lower Probe)**

Interval	Installed	Required	Procedure
<b>B</b>	<b>1</b>	<b>0</b>	<b>(M) [E]</b>

Except for EDTO operations beyond 120 minutes, may be inoperative provided:

- a. Both Left and Right Pitot heaters operate normally.
  - b. Airplane is not operated in known or forecast icing conditions.
- 

**MAINTENANCE(M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.



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**30-06            Vertical Stabilizer Pitot Heaters (Elevator and Rudder  
                  Feel Systems)**

Interval	Installed	Required	Procedure
B	2	1	(M) [E]

Except for EDTO operations beyond 120 minutes, one may be inoperative provided airplane is not operated in known or forecast icing conditions.

-----

**MAINTENANCE(M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

---

**30-07            Total Air Temperature Probe Heater**

**30-07A        Not Operated in Known or Forecast Icing Conditions**

Interval	Installed	Required	Procedure
<b>B</b>	<b>1</b>	<b>0</b>	<b>(M) [E]</b>

Except for EDTO operations beyond 120 minutes, may be inoperative provided airplane is not operated in known or forecast icing conditions.

- - - - -

**MAINTENANCE(M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

---

**30-07            Total Air Temperature Probe Heater**

**30-07B        Alternate Temperature Indicator Installed**

Interval	Installed	Required	Procedure
<b>C</b>	<b>1</b>	<b>0</b>	<b>(O)</b>

May be inoperative provided an alternate temperature indicator system is installed and operating normally (i.e., Ram Air or Static Air Temperature).

- - - - -

**OPERATIONS (O)**

With static air temperature available, the following table may be used to determine TAT.

## TOTAL AIR TEMPERATURE (°C) vs STATIC AIR TEMPERATURE (°C)

SAT (°C)	TAT (°C)											
	M.50	M.60	M.68	M.70	M.72	M.74	M.76	M.78	M.80	M.82	M.84	M.86
40	56	62	69	70								
35	51	57	64	65	66	68	70					
30	45	52	58	59	61	63	65	67	68	70		
25	40	47	52	54	56	57	59	61	63	64	66	68
20	35	41	47	48	50	51	53	55	57	58	60	63
15	30	36	42	43	44	46	48	49	51	53	55	57
10	24	31	36	37	38	40	43	44	46	47	49	51
5	19	25	31	32	33	35	37	38	40	41	43	45
0	13	20	25	26	28	29	31	33	34	36	38	40
-5	8	14	20	21	22	24	26	27	29	30	32	34
-10	3	9	14	15	17	19	20	22	23	25	26	28
-15	-2	3	9	10	11	13	14	16	17	19	21	23
-20	-7	-2	3	4	6	7	9	10	12	13	15	17
-25	-12	-7	-3	-1	0	2	3	5	6	8	9	11
-30	-18	-12	-8	-7	-5	-4	-2	-1	1	2	4	6
-35	-23	-17	-13	-12	-10	-9	-8	-7	-5	-4	-2	0
-40	-28	-23	-18	-17	-16	-15	-13	-12	-11	-9	-7	-6
-45	-34	-29	-24	-23	-21	-20	-19	-17	-16	-14	-13	-11
-50	-39	-34	-29	-28	-27	-26	-24	-23	-21	-20	-19	-17
-55	-44	-39	-35	-34	-32	-31	-30	-28	-27	-26	-24	-23
-60	-49	-45	-40	-39	-38	-37	-35	-34	-33	-31	-30	-28
-65	-55	-50	-46	-45	-43	-42	-41	-40	-38	-37	-36	-34
-70	-60	-55	-51	-50	-49	-48	-47	-45	-44	-43	-41	-40

---

**30-08            Angle of Attack Sensor Heater(s)/Stall Warning  
                  System Sensor Heater(s)/Alpha Vane Heater(s)**

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>0</b>	<b>(M) [E]</b>

Except for EDTO operations beyond 120 minutes, may be inoperative provided airplane is not operated in known or forecast icing conditions.

- - - - -

**MAINTENANCE(M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

- 30-09 Pitot, Pitot/Static and Temperature Probe Heater Lights**
- 30-09-02 Amber (Heater Off) Lights**
- 30-09-02-01 Pitot and Pitot/Static**

Interval	Installed	Required	Procedure
B	5	0	(M) [E]

Except for EDTO operations beyond 120 minutes, may be inoperative provided:

- a. Associated heater function is verified to operate normally.
  - b. Airplane is not operated in known or forecast icing conditions.
- 

### **MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

**For -800:**

Verify that probe heater operates normally (AMM 30-00-00/901).

**For All Models:**

1. Station ground observer at associated probe heater, establish communications.
2. Ensure covers are removed from all air data probes and vanes.
3. Supply electrical power to airplane (AMM 24-22-00).
4. Position the associated PITOT STATIC HEAT switch or PROBE HEAT switch to the ON position.
5. Verify that heat radiation can be detected from associated probe, indicating that heater is functioning. DO NOT TOUCH PROBE.

**CAUTION: DO NOT PLACE HAND ON PROBE. TEMPERATURES ARE HIGH ENOUGH TO CAUSE BURNS. DO NOT LEAVE HEATER ON LONGER THAN REQUIRED. HEATER LIFE MAY BE UNNECESSARILY SHORTENED.**

6. Position the associated PITOT STATIC HEAT switch or PROBE HEAT switch to the OFF or AUTO position.
7. Restore airplane electrical system to normal.

**30-09 Pitot, Pitot/Static and Temperature Probe Heater**

**Lights**

**30-09-02 Amber (Heater Off) Lights**

**30-09-02-02 Temperature**

**30-09-02-02A One Required**

Interval	Installed	Required	Procedure
C	2	1	

**30-09 Pitot, Pitot/Static and Temperature Probe Heater**

**Lights**

**30-09-02 Amber (Heater Off) Lights**

**30-09-02-02 Temperature**

**30-09-02-02B Associated Heater Verified To Operate Normally**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided associated heater function is verified to operate normally before each departure.

**MAINTENANCE (M)**

*For -800:*

Verify that probe heater operates normally prior to each departure (AMM 30-00-00/901).

1. Station ground observer at associated probe heater, establish communications.
2. Ensure covers are removed from all air data probes and vanes.
3. Supply electrical power to airplane (AMM 24-22-00).
4. For airplanes with non-aspirated TAT probes with air/ground logic for probe heater power, verifying TAT probe heater operation requires that first, the Ground Sensing switch located on the E11 shelf be pressed to simulate "air" mode.
5. Position the associated PITOT STATIC HEAT switch or PROBE HEAT switch to the ON position. For aspirated TAT probes, momentarily press/hold TAT TEST switch when verifying the TAT probe heater.
6. Verify that heat radiation can be detected from associated probe, indicating that heater is functioning. DO NOT TOUCH PROBE.

**CAUTION: DO NOT PLACE HAND ON PROBE. TEMPERATURES ARE HIGH ENOUGH TO CAUSE BURNS. DO NOT LEAVE HEATER ON LONGER THAN REQUIRED. HEATER LIFE MAY BE UNNECESSARILY SHORTENED.**



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7. Position the associated PITOT STATIC HEAT switch or PROBE HEAT switch to the OFF or AUTO position.
8. Restore airplane electrical system to normal.
9. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

---

**30-09 Pitot, Pitot/Static and Temperature Probe Heater**

**Lights**

**30-09-02 Amber (Heater Off) Lights**

**30-09-02-02 Temperature**

**30-09-02-02C Associated Heater Inoperative**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided associated heater is inoperative.

-----

**30-11           Electrically Heated Windshields****30-11-02       No. 1 Window (-800)**

Interval	Installed	Required	Procedure
C	2	1	(M) [E]

Except for EDTO operations beyond 120 minutes, one may be inoperative provided:

- a. Airplane is not operated in known or forecast icing conditions.
  - b. Both No. 2 window heaters operate normally.
  - c. Windshield de-fog system operates normally.
  - d. Airspeed is limited to 250 KIAS below 10,000 feet MSL.
- 

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

**MAINTENANCE NOTE**

Requirements for replacement of damaged windows are discussed in Chapter 56 of the Airplane Maintenance Manual (AMM).

Dispatch with window damage that does not require replacement per the AMM is permitted.

**OPERATIONS NOTE**

With No. 1 window heat inoperative, operate with the Windshield Air (pneumatic anti-fogging system) on when window heat is required.

**30-11           Electrically Heated Windshields****30-11-03       No. 2 Window (-800)**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided:

- a. Both No. 1 window heaters operate normally.
  - b. Windshield de-fog system operates normally.
  - c. Airspeed is limited to 250 KIAS below 10,000 feet MSL.
- 

**MAINTENANCE NOTE**

Requirements for replacement of damaged windows are discussed in Chapter 56 of the Airplane Maintenance Manual (AMM).

Dispatch with window damage that does not require replacement per the AMM is permitted.

**30-11           Electrically Heated Windshields****30-11-04       No.4 and No. 5 Window**

Interval	Installed	Required	Procedure
C	4	0	

No. 4 and No. 5 window heat may be inoperative provided airspeed is limited to 250 KIAS below 10,000 feet MSL.

NOTE: This MEL item only applicable to 9M-FFD and 9M-FFE.

-----

**MAINTENANCE NOTE**

Requirements for replacement of damaged windows are discussed in Chapter 56 of the Airplane Maintenance Manual (AMM).

Dispatch with window damage that does not require replacement per the AMM is permitted.

**30-11           Electrically Heated Windshields****30-11-05       No. 3 Window Heat System(s)**

Interval	Installed	Required	Procedure
D	2	0	

NOTE: This MEL item only applicable to 9M-MLM thru MLT and 9M-MXA thru 9M-MXO.

-----

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**30-12            Windshield DeFog System**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided electrically heated windshields for No.1 and No.2 windows operate normally.

- - - - -

**30-13 Windshield Wiper System(s)**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided :

- a) Airplane is not operated in precipitation within 5 statute miles of airport of takeoff or intended landing.
  - b) Approach minimums do not require its use.
  - c) Aircraft is not operated for Autoland.
- - - - -

**MAINTENANCE (M)**
**For -800:**

For Autoland operations are not allowed :

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for Autoland operations. DO NOT USE AUTOPILOT."

If wiper blade obstructs forward vision do these steps (AMM 30-00-00/901):

1. Do this task: Windshield Wiper Arm Removal (AMM 30-42-31).
2. Do this task: Windshield Wiper Arm Installation (AMM 30-42-31).

NOTE: It is only necessary to put the wiper arm in the parked position and to apply the appropriate downward force on the wiper blade. The steps related to the sweep of the wiper arm are not necessary.

**30-13 Windshield Wiper System(s)**
**30-13-01 Park Function**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided :

- a) For all flight conditions provided blade(s) can be positioned in a location that will not obstruct forward vision.
  - b) Aircraft is not operated for Autoland.
- - - - -

**30-13 Windshield Wiper System(s)**
**30-13-02 Intermittent Speed Function (-800)**

Interval	Installed	Required	Procedure
B	2	0	

- - - - -

**30-13 Windshield Wiper System(s)**  
**30-13-03 Low Speed Function**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided :

- a) Associated high speed functions operate normally.
  - b) Aircraft is not operated for Autoland.
- 

**30-13 Windshield Wiper System(s)****30-13-04 High Speed Function****30-13-04A One Inoperative**

Interval	Installed	Required	Procedure
B	2	1	

One may be inoperative provided :

- a) Associated low speed function operates normally.
  - b) Aircraft is not operated for Autoland.
- 

**30-13 Windshield Wiper System(s)****30-13-04 High Speed Function****30-13-04B Both Inoperative**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided :

- a) Both low speed functions operate normally and rain intensity is less than moderate.
  - b) Aircraft is not operated for Autoland.
- 

**30-13 Windshield Wiper System(s)****30-13-04 High Speed Function****30-13-04C (DELETED) Rain Removal Enhancement Installed**

Interval	Installed	Required	Procedure

Deleted in DDG revision 48 as it involves the hydrophobic coating, which is not an MMEL item.



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**30-17 COWL ANTI-ICE Lights (-800)**  
**30-17A Not Operated In Known Or Forecast Icing Conditions**

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>1</b>	<b>(M) [E]</b>

Except for EDTO operations beyond 120 minutes, one may be inoperative provided airplane is not operated in known or forecast icing conditions.

---

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that EDTO beyond 120 minutes (if applicable) is not allowed.

---

**30-17 COWL ANTI-ICE Lights (-800)**  
**30-17B Associated Cowl Anti-Ice Valve Locked Open**

Interval	Installed	Required	Procedure
<b>C</b>	<b>2</b>	<b>1</b>	<b>(M) (O)</b>

One may be inoperative provided associated cowl anti-ice valve is locked open.

NOTE: If dispatching with the associated cowl anti-ice valve locked open, MEL Item 30-03 restrictions for a cowl anti-ice valve inoperative locked open must be observed.

**MAINTENANCE (M)**

For -800:

Refer to MEL Item 30-03-03B (M) procedure to dispatch with associated cowl anti-ice valve locked open.

**OPERATIONS (O)**

For -800:

Refer to MEL Item 30-03-03B (O) procedure to dispatch with associated cowl anti-ice valve locked open.

**30-18            Alpha Vane Heater Light Systems**  
**30-18A          Associated Heater Verified To Operate Normally**

Interval	Installed	Required	Procedure
C	2	0	(M) [R]

May be inoperative provided associated heater function is verified to operate normally before each departure.

**MAINTENANCE (M)**
**For -800:**

With alpha vane heater light inoperative, check associated heater as follows prior to each departure (AMM 30-00-00/901):

**For All Models:**

1. Station ground observer at associated vane heater, establish communications.
2. Ensure covers are removed from all probe and vane heads.
3. Supply electrical power to airplane.
4. Position the associated PITOT STATIC HEAT switch or PROBE HEAT switch to the ON position.
5. Check that heat radiation can be detected from associated vane, indicating that heater is functioning. DO NOT TOUCH VANE.

**CAUTION: DO NOT PLACE HAND ON VANE. TEMPERATURES ARE HIGH ENOUGH TO CAUSE BURNS. DO NOT LEAVE HEATER ON LONGER THAN REQUIRED. HEATER LIFE MAY BE UNNECESSARILY SHORTENED.**

6. Position the associated PITOT STATIC HEAT switch or PROBE HEAT switch to the OFF or AUTO position.
7. Restore airplane electrical system to normal.
8. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**30-18            Alpha Vane Heater Light Systems**  
**30-18B          Associated Heater Inoperative**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided associated heater is considered inoperative. Refer to MEL item 30-08.

**OPERATIONS NOTE**

The associated alpha vane heater is considered inoperative. The airplane must also be dispatched using MEL item 30-08.

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**30-19 Drain Mast Heaters**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided water supply to associated components is secured off.

-----

**MAINTENANCE (M)****For -800:**

Turn off water supply to associated components and deactivate inoperative drain mast heaters (AMM 30-00-00/901).

1. Close the associated water supply shutoff valves (lavatory, galley or fountain).
2. Deactivate inoperative drain mast heater(s):
  - A. For an inoperative forward drain mast heater, disconnect, cap and stow wire 0243-20 from terminal block TB2201.
  - B. For an inoperative aft drain mast heater, disconnect, cap and stow wire 0244-20 from terminal block TB2201.

NOTE: Alternatively, both drain mast heaters may be deactivated by opening and collaring the following circuit breakers on the P-18 panel:

- A. HEATERS DRAIN MAST GND
- B. HEATERS DRAIN MAST AIR

---

**30-21            Control Stand Wing Anti-Ice Switches**  
**30-21A          Inoperative Closed**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative closed.

-----

**OPERATIONS (O)**

Set WING ANTI-ICE switch to OFF on the ground and for takeoff.

NOTE: Wing anti-ice will not be available on the ground. Wing anti-ice will operate normally in-flight.

---

**30-21            Control Stand Wing Anti-Ice Switches**  
**30-21B          Inoperative Open**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative open.

-----

**OPERATIONS (O)**

Set WING ANTI-ICE switch to OFF for takeoff.

NOTE: Wing anti-ice is available on the ground. Wing anti-ice will operate normally in-flight.

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**31-01      Clocks**

Interval	Installed	Required	Procedure
C	2	1	

- a. First Officer's may be inoperative,  
OR
  - b. Captain's may be inoperative for inoperative FDR.
- 

**OPERATIONS NOTE**

The FMC displays time from the captain's clock. For inoperative captain's clock, the UTC must be entered in the POS INIT page to initialize the FMC internal time reference.

**31-01      Clocks**
**31-01-01      Automatic UTC Update Function**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided manual mode is set and operates normally.

-----

**OPERATIONS (O)**

NOTE: When UTC time/date information is not being received from GPS (MEL item 34-45), dashes will be displayed in clock's UTC time/date display.

1. To set manual mode on clock:
  - A. Select Manual Mode (MAN) with the "TIME/DATE" push button on the clock.
  - B. Manually set the correct time/date as required.

**31-02 Flight Data Recorder System (FDR)**

Interval	Installed	Required	Procedure
A	1	0	

If Flight Data Recorder is inoperative, Cockpit Voice Recorder (CVR) must be operative.

NOTE 1: Applicable for six sectors only.

NOTE 2: Flight Data Recorder must be serviceable for test flight and base training.

NOTE 3: For airplanes with the control surface position indicating system installed, certain failures in the Digital Flight Data Acquisition Unit (DFDAU) may cause this system to fail. In this case, the airplane must also be dispatched using MEL item 27-18.

- - - - -

**MAINTENANCE NOTE**

The following procedure may be used to confirm whether or not DFDAU faults affect the mandatory function of the FDR or only the ACMS function.

1. Position the Flight Recorder Test Switch to the TEST position.
2. If the Flight Recorder System OFF Light extinguishes, the fault does not affect the mandatory function of the FDR but does affect the ACMS function (see MEL Item 31-07)
3. If the Flight Recorder System OFF Light remains illuminated, the fault does affect the mandatory function of the FDR.



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**31-03 MOVED (Engine Pressure Ratio Limit (EPRL) System)**

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Interval	Installed	Required	Procedure

Moved to MEL Item 34-41.

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**31-05                  MOVED (Cockpit Voice Recorder (CVR) System)**

---

Interval	Installed	Required	Procedure

Moved to MEL Item 23-10.

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**31-07 Aircraft Condition Monitoring System (ACMS)**

Interval	Installed	Required	Procedure
D	1	0	

---

NOTE 1: The Quick Access Recorder (QAR) is considered to be an ACMS component.

---

**31-07 Aircraft Condition Monitoring System (ACMS)****31-07-01 Quick Access Recorder**

Interval	Installed	Required	Procedure
D	1	0	

---

**31-08      Common Display System (CDS) (-800)**

**31-08-01      Display Units (DU)**

**31-08-01-01      Lower DU**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- a. All remaining DUs operate normally.
  - b. It is checked that engine display can be switched to an alternate DU.
- - - - -

**MAINTENANCE NOTE**

With the lower display unit inoperative for dispatch, depending on the failure mode, the upper display unit may exhibit flickering. Deactivating the lower display unit by opening and collaring circuit breaker DISPLAY CTR LWR on the P6-1 panel will reduce the risk of this interference.

**OPERATIONS (O)**

Verify that engine indications can be manually selected to either Captain's or First Officer's inboard DU.

**31-08      Common Display System (CDS) (-800)**

**31-08-01      Display Units (DU)**

**31-08-01-02      Inboard DU**

Interval	Installed	Required	Procedure
A	2	1	(O)

For PFD/ND configuration, both Inboard DUs must be operative.

For EFIS/MAP configuration, one may be inoperative provided:

- a. It is checked that engine display can be switched to an alternate DU.
  - b. All navigation must be based on ILS/VOR/DME.
  - c. Repairs are made within one flight day.
- - - - -

**OPERATIONS (O)**

Verify that engine indications can be manually selected to either Captain's or First Officer's inboard DU.

**31-08            Common Display System (CDS) (-800)****31-08-02        CDS MAINT Annunciation****31-08-02-01      PFD/ND**

Interval	Installed	Required	Procedure
B	2	0	(M)

May be dispatched with faults indicated by CDS MAINT annunciation.

NOTE: For RNP AR Operations, both PFDs and both NDs must be operative.

(CDS MAINT denotes a single source for the PFDs and NDs and therefore precludes RNP AR operations.)

-----

**MAINTENANCE (M)**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

## **31-09      Remote Light Sensor System (-800)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided all manual display brightness controls operate normally.

— 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 20 —



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**31-10 Speed Reference Selector (-800)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided speeds can be set using CDU.

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**31-11      Mechanical Timer**

**31-11A      Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate procedures are established and used.

NOTE: MAB operations do not normally require alternate procedures for mechanical timer. Refer MEL 31-11B.

---

**OPERATIONS (O)**

If required, use any sufficiently accurate timer as an alternative (eg. aircraft chronometer, stopwatch).

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**31-11      Mechanical Timer**

**31-11B      Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

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**31-12            Takeoff Warn Test Switch**  
**31-12A          Procedures Require Use**

Interval	Installed	Required	Procedure
C	1	0	

---

**31-12            Takeoff Warn Test Switch**  
**31-12B          Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

---

May be inoperative provided procedures do not require its use.

---

---

**31-14            TAKEOFF CONFIG Light**  
**31-14-03        -800**

Interval	Installed	Required	Procedure
C	2	1	(O)

May be inoperative provided the associated CABIN ALTITUDE warning light operates normally and flight crew performs a briefing on cabin altitude warning indications and procedures before engine start for the first flight of the day or following any change of either flight crew member.

NOTE: SB 737-31A1332 installs a CABIN ALTITUDE light and a TAKEOFF CONFIG light on the P1-3 and P3-1 instrument panels in the cockpit.

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**OPERATIONS (O)**

Use MEL item 21-11-02-03 (O) procedure.

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Landing Gear**

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**32-02            Antiskid System  
 32-02-02        -800**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. Associated Antiskid channel(s) is deactivated.
- b. Operations are conducted in compliance with AFM.
- c. Must be serviceable for operations out of wet runways.
- d. Payload may be affected for operations out of runways (and alternates) of which runway length is less than 8000 ft (2438 m). This means operations out of the following airports are to be avoided unless negligible effect to payload is incurred, KBR, SDK and LBU

NOTE 1: Due to changes of MAB operating pattern, the airports quoted above are just guidelines. For any new operating stations, please contact FDC.

NOTE 2: Takeoff and landing data for antiskid inop is provided (see OPERATIONS (O) section).

NOTE 3: Tailwind condition at some airports (eg LGK or AOR) may affect possibility of operations.

NOTE: The antiskid system has two circuit breakers (C/B's); one for Inboard (INBD) and one for Outboard (OUTBD) wheel brakes. If only one of the two antiskid channels is inoperative, the other channel may be left on to provide antiskid protection for the INBD or OUTBD wheels. Any channel that is inoperative must be turned off to ensure full manual braking capability.

### **MAINTENANCE (M)**

Advise MOC, FDC and OCC. Coordinate with FDC regarding payload penalty (this should assist with any decision regarding aircraft swap).

Deactivate the inoperative Antiskid System channels (AMM 32-00-00/-901).

Identify faulty channels by performing a maintenance BITE check as follows:

NOTE: If only one of the two antiskid channels is inoperative, the other channel may be left on to provide antiskid protection for the INBD or OUTBD wheels.

1. Gain access to the antiskid/autobrake control unit in the electronics bay E1-3.
2. Note all faults by pressing the PRESS/TEST - BIT switch to the BIT position until "TEST END".
3. Clear all faults by pushing RESET.
4. Note existing faults by pressing the PRESS/TEST - BIT switch to the BIT position until "TEST END".
5. Open and collar the P6-3 panel ANTISKID circuit breaker associated with existing faults.

Alternatively, the Antiskid system may be deactivated without performing the

maintenance BITE check.

Open and collar the P6-3 panel INBOARD ANTISKID and OUTBOARD circuit breakers.

## **OPERATIONS (O)**

1. Reduced thrust takeoff using the assumed temperature method is not permitted.
2. Takeoff on wet runways is not permitted.
3. Turn Autobrake System (if installed) OFF.
4. Payload may be affected due to takeoff and landing runway length requirements.
5. Adjust takeoff and landing gross weight limits as required for antiskid inoperative.

### Extract from -800 FPPM:

When operating with anti-skid inoperative, the field limit weight and V1 must be reduced to account for the effect on accelerate-stop performance. Anti-skid inoperative is only allowed on a dry runway. A simplified method which conservatively accounts for the effects of anti-skid inoperative is to reduce the normal dry field limit and obstacle limit weights by:

- a) 8500 kg (18739 lb) for -800
- b) 7950 kg (17527 lb) for -800SFP, and
- c) the V1 associated with the reduced weight by the amount shown in the following table.

### For -800:

ANTI-SKID INOPERATIVE V1 ADJUSTMENTS	
FIELD LENGTH (M)	V1 ADJUSTMENT (KIAS)
2000	-19
2500	-16
3000	-14
3500	-12
4000	-11

### For -800SFP:

ANTI-SKID INOPERATIVE V1 ADJUSTMENTS	
FIELD LENGTH (M)	V1 ADJUSTMENT (KIAS)
2000	-19
2500	-16
3000	-13
3500	-11
4000	-10

If the resulting V1 is less than minimum V1, takeoff is permitted with V1 set equal to V1(MCG) provided the dry accelerate stop distance adjusted for wind and slope exceeds approximately 1800 m (5906 ft).

For landing weights, refer FCOM Performance Dispatch - Landing.

6. Extend speed brakes manually since automatic extension system may not be operative with antiskid inoperative.
7. Use the following antiskid inoperative braking procedure (from AFM Section 4) including the actions in step 8:

Rejected Takeoff:

Close thrust levers and raise the speedbrakes. Initiate wheel braking using very light pedal pressure and increase as ground speed decreases.

Landing:

Raise speed brakes at touchdown. Initiate wheel braking using very light pedal pressure and increase as ground speed decreases.

8. Landing Procedure Review.

- A. Use minimum braking consistent with runway length and conditions to reduce the possibility of a tire blowout.
- B. Do NOT apply the brakes until the nose wheel is on the ground and the speedbrakes have been manually deployed.
- C. Brake initially using light steady pedal pressure. Increase pressure as ground speed decreases. Do NOT pump the brakes.

**32-03      Parking Brake Valve (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative closed provided:

a. Antiskid system is deactivated.

b. Operations are conducted in compliance with AFM inoperative decrements.

Refer MEL 32-02 Remarks and Exceptions, and OPERATIONS (O) section for guidelines on dispatch with antiskid inoperative deactivated. However, do not apply the MEL 32-02 MAINTENANCE (M) procedure (apply only the MAINTENANCE (M) procedure below for this item).

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**MAINTENANCE (M)**

1. Advise MOC, FDC and OCC. Coordinate with FDC regarding payload penalty (this should assist with any decision regarding aircraft swap).

For -800:

2. Deactivate the parking brake valve in the closed position (AMM 32-00-00/901):
  - A. Check that landing gear ground lock pins are properly installed.
  - B. With electrical power on airplane and wheels chocked, release the parking brake.
  - C. Open P6-3 panel ANTISKID FAIL & PARKING BRAKE or LANDING GEAR PARKING BRAKE circuit breaker.
  - D. Deactivate antiskid system:  
Open and collar the ANTISKID INBD and ANTISKID OUTBD circuit breakers.
  - E. Gain access to the parking brake valve and disconnect and stow electrical connector at valve.
  - F. Manually position override lever on the valve to the fully closed (POS 2) position.
  - G. Close P6-3 panel ANTISKID FAIL & PARKING BRAKE or LANDING GEAR PARKING BRAKE circuit breaker.
3. With the parking brake released and antiskid deactivated, verify that the ANTISKID INOP light is on.
4. Position auto brake switch to OFF position.
5. Restore the airplane to its required configuration.

**OPERATIONS (O)**

NOTE: The parking brake operates normally with the parking brake valve inoperative closed.

1. Refer to MEL item 32-02 (O) procedure for information when the antiskid system is deactivated.
2. Verify that the antiskid system is deactivated:

For -800:

P6-3 panel ANTISKID INBD and ANTISKID OUTBD circuit breakers are opened and collared.



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3. Verify that the auto brake switch is OFF.
4. Observe AFM limitations for dispatch with antiskid system inoperative.
5. Use antiskid inoperative braking procedure (AFM Section 4).
6. Extend speed brakes manually.

**32-04      Parking Brake Light****32-04-02      Motor Operated Parking Brake Valve Installed**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided parking brake shutoff valve is verified to operate normally.

NOTE: Some Goodyear and all Mark III antiskid systems have motor operated parking brake shutoff valves.

**MAINTENANCE (M)****For -800:**

Verify parking brake shutoff valve operates normally.

1. Check that landing gear ground lock pins are properly installed.
2. With electrical power on the airplane and wheels chocked, set and release the parking brake.
3. Verify that the parking brake shutoff valve (located on the wheel well aft bulkhead) moves to the closed position (POS 2) when the parking brake is set and moves to the open position (POS 1) when the parking brake is released. These results indicate that the parking brake valve is operating normally.
4. The ANTISKID INOP light may illuminate when the parking brake is set. Check that ANTISKID INOP light extinguishes when parking brake is released. If ANTISKID INOP light does not extinguish when parking brake is released, refer to MEL Item 32-02, Antiskid System.
5. Remove landing gear ground lock pins prior to dispatch.

**32-04      Parking Brake Light****32-04-03      External Parking Brake Light****32-04-03A      Alternate Procedures Used**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate procedures are established and used.

**OPERATIONS (O)**

1. Establish communications between ground crew and flight deck.
2. Notify ground crew when the parking brake is set and released.



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**32-04      Parking Brake Light**

**32-04-03    External Parking Brake Light**

**32-04-03B   Procedures Do Not Require Its Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

**32-07 Automatic Brake System**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided system is deactivated and secured.

NOTE: Must be serviceable for operations into airports with Landing Distance Available (LDA) less than 6,500 ft (1,981 m).

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**MAINTENANCE (M)**

If AUTO BRAKE DISARM or INOP light extinguishes with AUTO BRAKE switch OFF, dispatch is allowed with the AUTO BRAKE switch in the OFF position without any further deactivation procedures. If AUTO BRAKE DISARM or INOP light illuminates with AUTO BRAKE switch in the OFF position, perform the following additional procedures:

For -800:

AMM 32-00-00/901:

1. Depressurize hydraulic system B:  
Reference AMM 29-11-00
2. Open and collar the following P6-3 Panel auto brake control circuit breakers:  
Autobrake/BITE 1 and Autobrake/BITE2
3. In main gear wheel well, on the ceiling locate the auto brake valve module V122 and deactivate system by one of the two following methods:
  - A. METHOD 1
    - 1) Disconnect, cap and stow electrical connectors from auto brake valve module.
    - 2) Remove the auto brake valve module and cap the supply pressure line.
    - 3) Connect the brake pressure line and the return line with a 3/8 inch section of tubing or flexible hose (prevents hydraulically locking the brake shuttle valves in the brakes off position).
  - B. METHOD 2
    - 1) Disconnect, cap and show electrical connectors from auto brake valve module.
    - 2) Disconnect and plug the supply pressure line and cap the supply pressure port on the valve module.
4. Uncollar and close the two P6-3 Panel auto brake circuit breakers.
5. Repressurize the hydraulic systems (AMM 29-15-00) and check vicinity of auto brake valve for leaks.

**32-08              Rudder Pedal Nose Wheel Steering System**  
**32-08-01          Rotary Actuator (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O)

May be inoperative deactivated in disengage position provided:

- a. Operation of associated systems are not affected.
- b. All takeoffs and landings are made by pilot with access to an operating tiller.

**NOTE:** Dispatch is only allowed with the rudder pedal nose wheel steering not operating (electrical rotary actuator inoperative in the disengage position). The rotary actuator cannot be manually positioned.

### **MAINTENANCE (M)**

#### *For -800:*

(AMM 32-00-00/901)

1. Put the airplane in the air mode (AMM 32-09-00/201) and wait at least 5 seconds.
2. Open and collar P6-3 Panel circuit breaker LANDING GEAR NOSE GEAR STEER.
3. Return the airplane to the ground mode (AMM 32-09-00/201).
4. Operate the rudder pedal steering and verify that the nose gear does not turn.
5. Operate rudder pedals and verify that the rudder operates normally.
6. Operate the tiller and verify that the nose gear steering operates normally.

### **OPERATIONS (O)**

Flight crew should be informed that the crew member with access to the tiller will be flying and the following procedures used:

**NOTE:** Pilots must use caution when using the nose wheel steering tiller (wheel) above 20 knots to avoid over-controlling the nose wheels resulting in possible loss of directional control.

Takeoff:

The crew member with access to the tiller should steer the airplane by manipulating the steering wheel control until the rudder becomes effective between 40 and 60 kts. The crew member not flying should assist by keeping the wings level and applying a light forward pressure on the control column until the tiller is no longer required for steering.

Landing:

The crew member with access to the tiller should use the rudder and steering wheel control as required during the landing roll. The crew member not flying should assist by keeping the wings level and a forward pressure on the control column.

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## **32-10                  Alternate Antiskid Valves (-800)**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided manual braking capability of alternate brake system is verified on associated wheels.

## **MAINTENANCE (M)**

For -800:

If the alternate antiskid valve is inoperative, verify manual braking is available on the affected wheels with the alternate brake system (AMM 32-00-00-901):

1. Check that landing gear ground lock pins are properly installed.
  2. Provide electrical power (AMM 24-22-00).
  3. Verify that P6-3 panel circuit breakers ANTISKID INBD and ANTISKID OUTBD are closed.
  4. Verify that wheel chocks are in place.
  5. Depressurize Hydraulic System B and provide Hydraulic System A pressure (AMM 29-11-00).
  6. Depress and release brake pedals several times. Observe brake wear indicator pins for movement to ensure that all brakes are operating normally.
  7. If brakes do not operate normally, open and collar P6-3 panel circuit breakers ANTISKID OUTBD and ANTISKID INBD.
    - A. Depress and release brake pedals several times. Observe brake wear indicator pins for movement to ensure that all brakes are operating normally.
    - B. If all brakes operate normally, also dispatch the airplane using MEL item 32-02 (Antiskid System).

**32-12 Nose Wheel Steering Switch (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided:

- a. Nose wheel steering is powered by Hydraulic System A.
  - b. Landing gear transfer valve is verified to operate normally.
- 

**MAINTENANCE (M)****For -800:**

Verify that the landing gear transfer valve operates normally (AMM 32-00-00/901):

1. Pressurize Hydraulic System A.  
Reference AMM 29-11-00
2. Perform the Landing Gear Transfer Valve Operational Test (AMM 32-31-71)
3. Depressurize Hydraulic System A.  
Reference AMM 29-11-00.
4. Place Nose Wheel Steering switch to NORM position.

**OPERATIONS NOTE**

Nose wheel steering will not be available if Hydraulic System A power is lost.

**32-13            Hydraulic Brake Pressure Indication System**
**32-13-02        -800**
**32-13-02-01     Wheel Well Brake Accumulator Gauge**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided Flight Deck brake pressure indicator operates normally.

-----

**32-13            Hydraulic Brake Pressure Indication System**
**32-13-02        -800**
**32-13-02-02     Flight Deck HYD BRAKE PRESS Indicator System**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided brake accumulator charge is verified normal once each flight day.

-----

**MAINTENANCE (M)**
**For -800:**

Verify brake accumulator charge (AMM 32-00-00/901)

1. Chock wheels and release parking brakes.
2. Depressurize Hydraulic Systems A and B (AMM 29-11-00).
3. Apply and release brakes 10 times with approximately 3 seconds between each application. Verify that associated wheel well brake accumulator gauge pressure indication is within limits after 10 applications (AMM 12-15-11 or wheel well placard).
4. Pressurize Hydraulic Systems A and B (AMM 29-11-00) and verify that associated wheel well brake accumulator gauge pressure indication is approximately 3000 psi.
5. Set parking brakes.
6. Depressurize Hydraulic Systems A and B (AMM 29-11-00).
7. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**32-14      Gear Retraction Braking System (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. After takeoff, landing gear remains extended for two minutes before retraction.
  - b. Takeoff performance is based on Landing Gear Extended.
- 

**MAINTENANCE (M)**

Advise MOC, OCC and FDC that performance is affected. Technical Services (Operations Engineering) should be contacted as soon as possible to minimize possibility of delay.

**OPERATIONS (O)**

1. Base takeoff performance on landing gear extended. Takeoff performance for landing gear extended is available using the Boeing Takeoff Module (BTM) computer program.
2. After takeoff, leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.

**32-15      Landing Gear Selector Valve Bypass Module (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O)

May be inoperative provided it is deactivated in normal position.

**MAINTENANCE (M)**

Deactivate the landing gear selector valve bypass module. (AMM 32-00-00/901).

1. Open and collar P6-3 panel LANDING GEAR ALTN EXTEND SOL circuit breaker.
2. Check that landing gear ground lock pins are properly installed.
3. Verify that the bypass valve module is in the NORMAL position:
  - A. Momentarily position the landing gear lever in the UP position
  - B. Verify that the main landing gear downlock actuator tries to extend.
  - C. Ensure landing gear lever is returned to the DOWN position.
4. Remove landing gear ground lock pins when all maintenance and servicing of airplane is complete.

**OPERATIONS (O)**

The maximum performance limited landing weight must be based on flaps 15 and reduced by the following weight adjustments.

NOTE: A landing flap setting other than 15 may be used unless the landing gear lever is jammed in the up position.

A/C Type	Flaps 15 Performance Limited Landing Weight Adjustment
737-800	28,900 lb (13,109 kg)
737-800SFP	19,900 lb (9,027 kg)

If the landing gear lever will not move from the UP position when required, accomplish the following procedure to extend the landing gear. This procedure replaces the Flight Crew Operations Manual QRH, "LANDING GEAR LEVER JAMMED IN THE UP POSITION" procedure.

1. Pull Landing gear override trigger.  
NOTE: 270K/0.82M maximum speed.
2. Position LANDING GEAR lever Down.
3. If landing gear lever moves down.
  - A. Check landing gear indicator lights.
  - B. If all landing gear are down and locked, do the normal DESCENT, APPROACH and LANDING checklists.
  - C. If all landing gear are not down and locked, do the MANUAL GEAR EXTENSION checklist in the Flight Crew operations Manual QRH.
4. If landing gear lever does not move down.  
NOTE: Manual gear extension using this procedure may require up to 10 minutes to accomplish. Do not accomplish this procedure unless

there is sufficient fuel to extend the gear and then complete an approach, with appropriate reserves. If sufficient fuel is not available, accomplish the PARTIAL OR ALL GEAR UP LANDING checklist in the Flight Crew Operations Manual QRH.

- A. Verify NOSE WHEEL STEERING switch is NORM.  
NOTE: Do not use alternate nose wheel steering because the landing gear may retract on the ground.
- B. Position the system A FLT CONTROL switch to STBY RUD.
- C. Position the system A hydraulic pump switches to OFF.
- D. Cycle the speed brake lever until system A hydraulic pressure is below 500 psi.  
NOTE 1:It may take a number of cycles to reduce the system A pressure to below 500 psi.  
NOTE 2:Do not repressurize hydraulic system A inflight or on the ground and do not use alternate nose wheel steering because the landing gear may retract.  
NOTE 3:The engine No. 1 thrust reverser will deploy and retract at a slower rate and some thrust asymmetry can be anticipated  
NOTE 4:The following items will be inoperative:
  - 1) Ground spoilers.
  - 2) Flight spoilers 2, 4, 9, 11.
  - 3) Autopilot A.
  - 4) Normal nose wheel steering.
  - 5) Alternate brakes.
  - 6) Two-Position tail skid extension (applicable on 900ER, optional on 800SFP).
- E. Pull the manual gear extension handles.  
NOTE 1:270K/0.82M maximum speed.  
NOTE 2:Do not wait for an indication that a landing gear is down and locked before pulling the next handle.
- F. Continue to cycle the speed brake lever to relieve hydraulic pressure as the gear extends.  
NOTE 1:It may take a number of cycles and up to 4 minutes until all three landing gear indicator lights are illuminated.  
NOTE 2:With the LANDING GEAR lever in the UP or OFF position, the red landing gear indicator lights will stay illuminated.
- G. If all landing gear are not down and locked, accomplish the PARTIAL OR ALL GEAR UP LANDING checklist in the Flight Crew Operations Manual QRH.
- H. If all landing gear are down and locked, plan for a flaps 15 landing.
  - 1) Set VREF 15 + 10 knots.  
NOTE: Provides tail clearance during landing since "A" hydraulic system flight spoilers will be unlocked and may float.
  - 2) Position the GROUND PROXIMITY FLAP INHIBIT switch to FLAP INHIBIT.



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- 
- 3) If installed, position the GROUND PROXIMITY GEAR INHIBIT switch to GEAR INHIBIT.
  - 4) If GROUND PROXIMITY GEAR INHIBIT switch not installed, pull GND PROX WARN circuit breaker.

**32-16      Landing Gear Actuation System (-800)**

Interval	Installed	Required	Procedure
B	1	0	(M) (O) [P]

May be inoperative provided:

- a. Inoperative components are secured by an accepted procedure.
- b. Landing gear are secured in down position.
- c. Airplane is dispatched in accordance with AFM Gear Extended Appendix.

NOTE 1: 9M-FFF, 9M-MLD, 9M-MLF onwards, MX-series and MS-series has the applicable AFM Landing Gear Extended (Appendix 11), and may be dispatched with this MEL item.

NOTE 2: 9M-MLE do not have the AFM Landing Gear Extended (Appendix 11), and shall not be dispatched with this MEL item. (The landing gear extended appendix in their AFM is for the other ASN's)

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**MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

Secure the landing gear in the down position (AMM 32-00-00/901).

1. Install landing gear downlock pins (AMM 32-00-01/201).
2. Re-program airspeed indicator and airspeed warnings (VMO/MMO) for landing gear extended by placing the Alternate Gear Down Dispatch switch located in the main equipment center to the ALTN position.

**OPERATIONS (O)**

Dispatch the airplane in accordance with the AFM Landing Gear Extended Appendix.

1. Observe AFM Landing Gear Extended certificate limitations and operational limits.
2. Airplane performance with landing gear extended is available in AFM-DPI and the Boeing 737-800 Flight Planning and Performance Manual for aircraft that have an applicable AFM appendix for Landing Gear Extended.

NOTE: To check applicability of AFM Appendices for individual aircraft by serial number, refer to the "ASN & Appendix Effectivity" section near the front of each AFM.

**32-17      Proximity Switch Electronics Unit (PSEU) System and Supplemental Proximity Sensor Electronics Unit (SPSEU) (-800)**

**32-17-01      PSEU Fault**

**32-17-01A      PSEU Faults Checked Before Each Departure**

Interval	Installed	Required	Procedure
C	2	0	(M) [R]

May be dispatched with faults indicated by PSEU light provided PSEU is checked for faults before each departure.

#### **MAINTENANCE (M)**

Check the PSEU BITE for faults (AMM 32-00-00/901):

1. Gain access to the PSEU through the forward access door.
2. Power the PSEU BITE Control Panel by pressing the ON/OFF switch.
3. EXISTING FAULTS? will be displayed. Press the YES switch.
4. One of the following messages will be displayed:
  - A. "NO FAULTS" - airplane may be dispatched without further action.
  - B. "DISPATCH FAULT" (or "DISPATCH PER MEL" if PSEU P/N 285A1600-4 or later is installed) - msg #32-64003 - dispatch allowed for 10 days unless msg #32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 are also displayed. If msg #32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 are displayed, refer to MEL item 32-21.
  - C. "NO DISP FAULT" (or "DO NOT DISPATCH" if PSEU P/N 285A1600-4 or later is installed) - msg #32-64004 - dispatch is not allowed. If msg #32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 are also displayed, refer to MEL item 32-21.
5. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**32-17      Proximity Switch Electronics Unit (PSEU) System and Supplemental Proximity Sensor Electronics Unit (SPSEU) (-800)**

**32-17-01      PSEU Fault**

**32-17-01B      PSEU Light Can Be Extinguished**

Interval	Installed	Required	Procedure
C	2	0	

May be dispatched with faults indicated by PSEU light provided PSEU light can be extinguished.

#### **MAINTENANCE NOTE**

For dispatchable faults, extinguish the PSEU light by one of these three steps:

1. For airplanes with P/N 285A1600-4 and earlier PSEU : Pushing the MASTER CAUTION light.
2. For airplanes with P/N 285A1600-5 and -6 PSEU : Setting the parking brake, or Shutting down both engines.

**32-17                  Proximity Switch Electronics Unit (PSEU) System and  
                            Supplemental Proximity Sensor Electronics Unit  
                            (SPSEU) (-800)**

**32-17-02            PSEU Light**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative provided PSEU is checked for faults before each departure.

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**MAINTENANCE (M)**

Check the PSEU BITE for faults (AMM 32-00-00/901):

1. Gain access to the PSEU through the forward access door.
2. Power the PSEU BITE Control Panel by pressing the ON/OFF switch.
3. EXISTING FAULTS? will be displayed. Press the YES switch.
4. One of the following messages will be displayed:
  - A. "NO FAULTS" - airplane may be dispatched without further action.
  - B. "DISPATCH FAULT" (or "DISPATCH PER MEL" if PSEU P/N 285A1600-4 or later is installed) - msg #32-64003 - dispatch allowed for 10 days unless msg #32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 are also displayed. If msg #32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 are displayed, refer to MEL item 32-21.
  - C. "NO DISP FAULT" (or "DO NOT DISPATCH" if PSEU P/N 285A1600-4 or later is installed) - msg #32-64004 - dispatch is not allowed. If msg #32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 are also displayed, refer to MEL item 32-21.
5. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**32-18      Landing Gear Alternate Extension System (-800)**

Interval	Installed	Required	Procedure
B	1	0	(M) [P]

May be inoperative provided:

- a. Inoperative components are secured by an accepted procedure.
- b. Landing gear are secured in down position.
- c. Airplane is dispatched in accordance with AFM Gear Extended Appendix.

NOTE 1: 9M-FFF, 9M-MLD, 9M-MLF onwards, MX-series and MS-series has the applicable AFM Landing Gear Extended (Appendix 11), and may be dispatched with this MEL item.

NOTE 2: 9M-MLE do not have the AFM Landing Gear Extended (Appendix 11), and shall not be dispatched with this MEL item. (The landing gear extended appendix in their AFM is for the other ASN's)

**MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

Secure the landing gear in the down position (AMM 32-00-00/901).

1. Install landing gear downlock pins (AMM 32-00-01/201).
2. Re-program airspeed indicator and airspeed warnings (VMO/MMO) for landing gear extended by placing the Alternate Gear Down Dispatch switch located in the main equipment center to the ALTN position.

**OPERATIONS (O)**

Dispatch the airplane in accordance with the AFM Landing Gear Extended Appendix.

1. Observe AFM Landing Gear Extended certificate limitations and operational limits.
2. Airplane performance with landing gear extended is available in AFM-DPI and the Boeing 737-800 Flight Planning and Performance Manual for aircraft that have an applicable AFM appendix for Landing Gear Extended.

NOTE: To check applicability of AFM Appendices for individual aircraft by serial number, refer to the "ASN & Appendix Effectivity" section near the front of each AFM.

**32-19 Main Landing Gear Uplock Springs**

Interval	Installed	Required	Procedure
B	4	3	(M) (O)

One spring on one main gear uplock mechanism may be missing provided landing gear lever remains in UP position for duration of flight until gear extension is required.

-----

**MAINTENANCE (M)**

For -800:

Remove the affected main landing gear uplock spring (AMM 32-00-00/901).

**OPERATIONS (O)**

After takeoff, leave landing gear lever in the UP position for the duration of flight until gear extension is required.

**32-20      Landing Gear Frangible Fitting (-800)**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be broken or missing provided fitting is replaced with a hydraulic cap assembly.

- - - - -

**MAINTENANCE (M)**

Remove the frangible fitting and nut and replace with a standard BACC14AD06JL or equivalent hydraulic cap assembly (AMM 32-00-00/901).

**32-21 Flap Landing Warning Switch, S138 (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M)

Switch contacts normally in use may be inoperative provided:

- a. S138 switch is rewired using an alternate set of contacts.
- b. PSEU BITE is used to verify normal operation of S138 switch.

**MAINTENANCE (M)**

S138 switch is rewired and PSEU BITE is used to verify normal operation of the S138 switch (AMM 32-00-00/901).

1. Failure of the S138 switch is indicated by illumination of the PSEU fault light accompanied by fault message numbers 32-62009, 32-62109, 32-62010, 32-62110, or 32-62014 shown in the PSEU BITE.
2. Each fault message indicates a high resistance short to ground or disagreement between contacts as shown below:
  - A. 32-62009/32-62109 D10984 pin 48 S138 contact "3" wire W8124-A-CC
  - B. 32-62010/32-62110 D10984 pin 49 S138 contact "18" wire W8124-A-UU
  - C. 32-62014 Disagreement between contacts "3" and "18"
- For a S138 switch with connector attached to D14730 –
  - A. 32-62009/32-62109 D10984 pin 48 S138 contact "C" wire W8124-0506-C
  - B. 32-62010/32-62110 D10984 pin 49 S138 contact "U" wire W8124-0511-20
  - C. 32-62014 Disagreement between contacts "C" and "U"
3. Refer to Wiring Diagram Manual 32-64-21 and wire list for available contacts. The wires for the contact set (center tap contact and normally open contact) may be cut from the S138 switch set and temporarily connected to an available set of contacts in the same switch as follows, until the switch can be replaced:
  - A. Select flaps full up.
  - B. Select an available set of contacts, after verifying that the normally open contact exhibits better than 10.0 mega-ohms isolation resistance to ground and to center tap.
  - C. Connect wire to selected set of contacts using approved waterproof splices per Standard Wiring Practices Manual.
  - D. Cap and stow deactivated wires from S138 switch.
  - E. Test the S138 switch as follows:
    - 1) Use the PSEU BITE panel to select the S138 switch through D10984 pin 48 and 49 and verify each position displays NO GND.
    - 2) Select flaps 15



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- 
- 3) Use the PSEU BITE panel to select the S138 switch through D10984 pin 48 and 49 and verify each position displays GND.
- 4) Alternate to Steps 3. For a S138 switch with connector attached to D14730. Refer to Wiring Diagram Manual 32-64-21 and wire for list for available contacts. Refer to Standard Wiring Practices Manual for any established wiring procedures required. Remove the connector pins A and C, or U and S, from whichever is discrepant on the switch side.
- A. Select flaps full up.
  - B. Select an available set of contacts, after verifying that the normally open contact exhibits better than 10.0 mega-ohms isolation resistance to ground and to center tap. Available set may be any of the switch NO and CT contacts on any available switch (i.e.: D and F, K and M, N and R).
  - C. Insert the connector pins removed from A and C, or U and S, into whichever set of connector pin locations previously selected above.
  - D. Plug connector holes with removed plugs from pins at newly used set of contacts.
  - E. Test the S138 switch as follows:
    - 1) Use the PSEU BITE panel to select the S138 switch through D10984 pin 48 and 49 and verify each position displays NO GND.
    - 2) Select flaps 15.
    - 3) Use the PSEU BITE panel to select the S138 switch through D10984 pin 48 and 49 and verify each position displays GND.

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**33-01 Cockpit / Flight Deck / Flight Compartment and Instrument Lighting System**

**33-01-02 Map and Chart Light (-800)**

Interval	Installed	Required	Procedure
C	4	2	

One must be operative for each pilot.

**33-01 Cockpit / Flight Deck / Flight Compartment and Instrument Lighting System**

**33-01-03 All Lights Except Map/Chart Light**

Interval	Installed	Required	Procedure
C	11	Refer Below	

Individual lights may be inoperative provided remaining lights are:

- a. Remaining lighting system lights are sufficient to clearly illuminate all required instruments, controls and other devices for which it is provided.
- b. Remaining lighting system lights are positioned so that direct rays are shielded from flight crewmember's eyes.
- c. Lighting configuration and intensity is acceptable to flight crew.

NOTE 1: Individual button/switch lights and/or annunciations/indications are excluded from this relief.

NOTE 2: Unaided operation (without NVGs) may be permitted with inoperative NVG supplemental lights; cracked or missing filters.

**33-01 Cockpit / Flight Deck / Flight Compartment and Instrument Lighting System**

**33-01-04 Standby Compass Light**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided the standby compass is considered inoperative.

NOTE: When the compass light is inoperative, the standby compass must also be rendered inoperative for night operations. Refer to MEL 34-11.

- 
- 33-02 Cabin Interior Illumination**  
**33-02-01 Passenger and Combi Configurations Without Photoluminescent Emergency Escape Path Marking System**

Interval	Installed	Required	Procedure
C	1	Refer Below	

Individual lights may be inoperative provided sufficient lighting remains for cabin attendants/cargo couriers to perform their duties.

---

- 33-02 Cabin Interior Illumination**  
**33-02-02 Passenger and Combi Configurations With Photoluminescent Emergency Escape Path Marking System**

Interval	Installed	Required	Procedure
C	1	Refer Below	(O)

Individual lights may be inoperative provided:

- Sufficient lighting remains for cabin attendants/cargo couriers to perform their duties.
- Remaining lighting is sufficient to charge Photoluminescent Emergency Escape Path Marking System.

**NOTE: Refer to Operations (O) below for means of determining sufficient lighting condition.**

---

## **OPERATIONS (O)**

*For Boeing design photoluminescent proximity lighting system installed:*

- A maximum of 10% of the indirect ceiling fluorescent lights may be inoperative provided opposite and adjacent lights are operative.
- In addition, a maximum of 50% of the sidewall fluorescent lights may be inoperative provided no more than two adjacent lights are inoperative and opposite lights are operative.

*For Boeing Sky Interior with the Boeing photoluminescent proximity lighting system installed:*

- A maximum of 20% of the ceiling LED lights may be inoperative provided opposite and adjacent lights are operative.
  - The LED Direct Lights and Cove lights at the forward and aft ends of the passenger cabin are NOT counted as ceiling lights because these lights are not critical for charging the photoluminescent strips.
  - For counting purposes, ceiling lights, bullnose ceiling lights, wash only ceiling lights, and (if installed) Center Overhead Stowage (COS) lights are counted. Ceiling lights are mounted on top of the stow bins, and COS lights are installed on the optional COS boxes.
- Each ceiling light or bullnose ceiling light has two element assemblies, a white 'cross bin' element assembly and a color

wash element assembly. The cross-bin element assembly used on each bullnose ceiling lights has a section 16 inches or less that is intentionally left dark, and placarded accordingly.

- 2) Each wash-only ceiling light has one wash element assembly.
- 3) Each Center Overhead Stowage (COS) light has one element assembly.

C. Long light assemblies noted in the table below that have only a short section inoperable/dark may be counted as operable, provided the conditions noted are met.

**Ceiling Light Assemblies and Minimum Assembly Lengths**

Light Assembly	Element Assembly	Minimum Assembly Length
COS Light Assembly	COS Element Assembly	40 Inches
Wash-only Ceiling Light Assembly	Wash Element Assembly	40 Inches
Ceiling Light Assembly	Wash Element Assembly	40 Inches
	Cross-bin Element Assembly	40 Inches
Bullnose Ceiling Light Assembly	Wash Element Assembly	40 Inches
	Cross-bin Element Assembly	55 Inches

- 1) The inoperable/dark section on each element is less than 16 inches in length.
  - 2) A cross-bin element assembly with one intentionally dark section may have one additional inoperative/dark section of less than 16 inches and still be counted as operable.
2. In addition, a maximum of 40% of the sidewall LED lights may be inoperative provided the following conditions are met.

NOTE: Each overwing exit light should be counted as a sidewall LED light, both in determining the percentage of inoperative sidewall LED lights and in counting the number of sidewall LED lights in a string.

- A. One string containing a maximum of 7 adjacent sidewall LED lights may be inoperative. A string is a group of lights connected in series and powered by one electrical power drop.
- B. Aside from one inoperative string containing a maximum of 7 adjacent sidewall LED lights, additional sidewall LED lights may be inoperative provided they are not adjacent to or directly opposite from other inoperative lights.

*For SafTGlo (STG) installed Blue Slimline system (FAA STC ST01829AT):*

For the SafTGlo (STG) Blue Slimline photoluminescent proximity lighting system installed, sidewall window lighting may be inoperative. Inoperative overhead ceiling lights cannot exceed more than 10% of the total quantity of ceiling lights AND no more than two adjacent lamps in the longitudinal, lateral or diagonally opposing directions can be inoperative. Refer diagram below (each bar represents a single overhead lamp, and dark bars are inoperative lamps):



All inoperative lamps must be clear of galleys, cabinets and life raft storage areas. All lamps in the region of the liferaft storage areas must be operative. Entry way lighting (overhead lighting at forward and aft cabin doors) must operate in the "BRIGHT" setting.

*For Boeing Sky Interior system (does not include 9M-FFseries B737-800 aircrafts):*

For the Boeing Sky Interior with the photoluminescent proximity lighting system installed, a maximum of 20% of the ceiling LED lights may be inoperative provided opposite and adjacent lights are operative. In addition, a maximum of 40% of the sidewall LED lights with a maximum string of 7 sidewall lights may be inoperative provided opposite and adjacent lights are operative.

- 33-03 Passenger Lighted Information Signs and Notice System**  
**33-03-01 "NO SMOKING / FASTEN SEAT BELT / RETURN TO SEAT"**  
**Lighted Signs**  
**33-03-01A PA System Inoperative**

Interval	Installed	Required	Procedure
C	<b>56</b>	<b>0</b>	(M)

May be inoperative provided:

- a. Associated passenger seat or lavatory is not occupied from which a passenger lighted information sign is not readily legible.

- b. Associated seat or lavatory is blocked and placarded - DO NOT OCCUPY.

NOTE: These conditions are not intended to prohibit lavatory use or inspections by crewmembers.

-----

### **MAINTENANCE (M)**

NOTE: In tests conducted at Boeing for the FAA, a sign was considered "readily legible" if enough of the sign could be seen to identify it. For example: "NO SMOK" and "FASTEN SEAT B" would be considered readily legible.

Block and placard associated seat or close and lock associated lavatory.

1. If required, install tapes or ropes of conspicuous contrasting colors to block access to unusable seats prior to boarding passengers. **Advise MOC/FDC/OCC of affected seat numbers.**
2. Conspicuous signs or placards shall be placed in appropriate locations to indicate seats which are not to be occupied by passengers.
3. For an associated lavatory, close and lock the lavatory door.

- 33-03 Passenger Lighted Information Signs and Notice System**  
**33-03-01 "NO SMOKING / FASTEN SEAT BELT / RETURN TO SEAT"**  
**Lighted Signs**  
**33-03-01B PA System Operates Normally**

Interval	Installed	Required	Procedure
C	<b>56</b>	<b>0</b>	(O)

May be inoperative and associated passenger seat or lavatory may be occupied provided:

- a. PA System operates normally.
  - b. PA system is used to notify passengers and cabin crew when associated sign(s) are placed on or off.
- 

### **OPERATIONS (O)**

Each operator shall establish procedures for when the pilot in command shall notify passengers when seat belts must be fastened, smoking is prohibited and passengers should return to cabin from the lavatories.

- 
- 33-03** **Passenger Lighted Information Signs and Notice System**  
**33-03-02** **All Cargo, Supernumerary/Courier Area Lighted Information Signs**

Interval	Installed	Required	Procedure
C	21	8	(O)

May be inoperative provided alternate procedures are established and used to notify couriers/supernumeraries when associated sign(s) are placed on or off.

---

### **OPERATIONS (O)**

Each operator shall establish procedures for when the pilot in command shall notify couriers/supernumeraries when seat belts must be fastened, smoking is prohibited and when to return to cabin from the lavatories.

- 
- 33-03** **Passenger Lighted Information Signs and Notice System**  
**33-03-03** **Aural Tone System**

Interval	Installed	Required	Procedure
C	1	0	(O)

---

### **OPERATIONS (O)**

Flight Crew shall ensure Seat belt and/or no smoking sign switches is/are selected manually ON when required.

- 
- 33-03** **Passenger Lighted Information Signs and Notice System**  
**33-03-04** **Flight Deck Automatic Function**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- Manual control function operates normally.
  - Alternate procedures are established and used.
- 

### **OPERATIONS (O)**

Flight Crew shall notify Cabin Crew through interphone when seatbelts must be fastened. Flight Crew / Cabin Crew shall notify passengers through PA when seatbelts must be fastened.

Flight Crew shall ensure Seat belt and/or no smoking sign switches is/are selected manually ON when required.



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**33-04 Lower Cargo Compartment Light Systems (Fwd/Aft)**

Interval	Installed	Required	Procedure
C	21	0	

Lights Lens included

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**33-04 Lower Cargo Compartment Light Systems (Fwd/Aft)**

**33-04-03 Light Lens (-800)**

Interval	Installed	Required	Procedure
C	-	REFER BELOW	

Any number from aft lower cargo compartment and one from forward lower cargo compartment may be broken/missing provided associated light bulb is removed.  
LED light, no associated LED Module removal required.

-----



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**33-05            High Intensity or Strobe Lights System**

**33-05-01        All Models (Except Models with STC's ST01821LA,  
ST01873LA, and ST02015LA) (includes -800)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided anti-collision beacons operates normally.

-----

---

**33-06 Anti-Collision Beacons (-800 Without Blended Winglet, -800 with Blended Winglet) (Except STC ST01821LA and ST01873LA)**

**33-06A Day And Night Operations**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided wing tip and tail strobe lights are installed and operate normally.

NOTE: A minimum of one bulb illuminated is sufficient for the Grimes Rotating Beacon part number G-9325A to meet 14 CFR illumination and flash rate requirements for an operative beacon. Both bulbs must be illuminated for the Grimes Rotating Beacon Part Number 40-0173 to meet 14 CFR intensity requirements for an operative beacon.

---

**33-06 Anti-Collision Beacons (-800 Without Blended Winglet, -800 with Blended Winglet) (Except STC ST01821LA and ST01873LA)**

**33-06B Day Operations**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided:

- At least one tail or winglet strobe light operates normally
- Operations are not conducted at night.

NOTE: A minimum of one bulb illuminated is sufficient for the Grimes Rotating Beacon part number G-9325A to meet 14 CFR illumination and flash rate requirements for an operative beacon. Both bulbs must be illuminated for the Grimes Rotating Beacon Part Number 40-0173 to meet 14 CFR intensity requirements for an operative beacon.

### **MAINTENANCE (M)**

Inform MOC that the aircraft can be utilized for Day Operations only until this defect is rectified.



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- |             |   |
|-------------|---|
| 33-06       | Anti-Collision Beacons (-800 Without Blended Winglet,<br>-800 with Blended Winglet) (Except STC ST01821LA and<br>ST01873LA) |
| 33-06-01    | <b>NOT APPLICABLE/MOVED [Blended Winglet]</b>   |
| 33-06-01-02 | MOVED (-800 with light fence)   |

Interval	Installed	Required	Procedure

Deleted by Revision 45a. Incorporated into 33-06.

— 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 20 —

**33-07 Wing Illumination Lights**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided ground de-icing procedures do not require their use.

---

**OPERATIONS (O)**

Ensure sufficient lighting for wing illumination during ground de-icing (can be from ground sources).

---

**33-07 Wing Illumination Lights**

**33-07-01 Overwing Ice Lights (Grimes Aerospace STC No. ST500CH)**

Interval	Installed	Required	Procedure
C	2	0	

- 
- 33-08      Landing Lights**  
**33-08-01    With Retractable Landing Lights**  
**33-08-01A   All Operations**

Interval	Installed	Required	Procedure
C	4	2	

One may be inoperative on each side provided one of two operating lights is in fixed position.

---

- 33-08      Landing Lights**  
**33-08-01    With Retractable Landing Lights**  
**33-08-01B   Day Operations**

Interval	Installed	Required	Procedure
C	4	0	(M)

May be inoperative provided operations are not conducted at night.

---

### **MAINTENANCE (M)**

Inform MOC that the aircraft cannot fly at night until this defect is rectified.

- 
- 33-08      Landing Lights**  
**33-08-01    With Retractable Landing Lights**  
**33-08-01-01   Retractable Light Extend/Retract Motors**  
**33-08-01-01A   Light Illuminates Normally in Extended Position**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative provided:

- a. Light is in extended position.
- b. Light illuminates normally.
- c. Appropriate performance adjustments are applied.

**NOTE: The affected landing light(s) should be stowed in retracted position (MEL 33-08-01-01B) whenever possible (even though this requires the affected light(s) to be considered inoperative). This is to avoid the 1.0 percent fuel burn penalty for each extended light.**

---

### **MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

#### **For -800:**

With the retractable landing light(s) extend/retract motor inoperative, compare the light position with the operative light's position or use AMM 33-42-02 Retractable

Landing Light - Light Adjustment to determine if the light is in the extended position. If light is not in the extended position, the light (lamp) is considered to be inoperative. Refer MEL 33-08-01-01B or C instead.

## **OPERATIONS (O)**

1. Reduce performance limited weights by the following for each extended light:

**For -800:**

Enroute Climb Limited Weight 1500 lb (681 kg).

NOTE: Enroute climb penalties are based on single engine operating speeds that approximate maximum lift-to-drag ratio speed. To account for the difference in level off altitude when operating at other speeds, multiply the enroute climb weight penalty listed above by the appropriate factor listed in MEL Section 3, Enroute Diversion Speed Effects.

2. Increase fuel burn by 1.0 percent for each extended light.

**33-08      Landing Lights**

**33-08-01    With Retractable Landing Lights**

**33-08-01-01   Retractable Light Extend/Retract Motors**

**33-08-01-01B   Associated Light Considered Inoperative and Stowed Retracted**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided

- a. Associated light is considered inoperative and stowed retracted. Refer also MEL 33-08-01A or B as appropriate.
- b. Appropriate performance adjustments are applied when the associated light is not in the fully retracted position.

## **OPERATIONS (O)**

1. Reduce performance limited weights by the following for each light that is not in the fully retracted position:

**For -800:**

Enroute Climb Limited Weight 1500 lb (681 kg).

NOTE: Enroute climb penalties are based on single engine operating speeds that approximate maximum lift-to-drag ratio speed. To account for the difference in level off altitude when operating at other speeds, multiply the enroute climb weight penalty listed above by the appropriate factor listed in MEL Section 3, Enroute Diversion Speed Effects.

2. Increase fuel burn by 1.0 percent for each extended light.

- 
- 33-08      Landing Lights**  
**33-08-01    With Retractable Landing Lights**  
**33-08-01-01   Retractable Light Extend/Retract Motors**  
**33-08-01-01C   Associated Light Inoperative Extended**

Interval	Installed	Required	Procedure
C	2	0	(M) [P]

May be inoperative extended. Refer also MEL 33-08-01A or B as appropriate.

NOTE: The affected landing light(s) should be stowed in retracted position (MEL 33-08-01-01B) whenever possible. This is to avoid the 1.0 percent burn penalty for each extended light.

---

#### **MAINTENANCE (M)**

Advise MOC/FDC/OCC that performance is affected.

#### **OPERATIONS NOTE**

The retractable landing lights may be inoperative in the extended position with no operational restrictions. The fuel burn is increased by 1.0 percent for each extended light.

- 
- 33-08      Landing Lights**  
**33-08-01    With Retractable Landing Lights**  
**33-08-01-02   Pulse Light System**

Interval	Installed	Required	Procedure
D	1	0	

---

**33-09            Taxi Light**  
**33-09-01        Nose Gear Taxi Light**

Interval	Installed	Required	Procedure
C	1	0	

---



BOEING B737-800  
MINIMUM EQUIPMENT LIST

Section 2: ATA 33  
Lights

**33-10 Runway Turn Off Lights**

Interval	Installed	Required	Procedure
C	2	0	

**33-11 Wing Tip Position Lights**  
**33-11A DELETED (Day Operations)**

Interval	Installed	Required	Procedure

Deleted in Boeing DDG Revision 50.

**33-11 DELETED (Wing Tip Position Lights)**  
**33-11B DELETED (Day And Night Operations)**

Interval	Installed	Required	Procedure

Deleted in Boeing DDG Revision 50.

**33-11 Wing Tip Position Lights****33-11-01 Light Bulbs/Lamps/LED Modules (-800 Blended Winglet with Dual Glass Lens)****33-11-01A Day and Night Operations**

Interval	Installed	Required	Procedure
C	8	4	

Any except following minimum may be inoperative for **both day and night** operations:

- a. One stationary red wing tip bulb.
  - b. One stationary green wing tip bulb.
  - c. One stationary white tail light bulb at each wing tip position.
- 

**33-11 Wing Tip Position Lights****33-11-01 Light Bulbs/Lamps/LED Modules (-800 Blended Winglet with Dual Glass Lens)****33-11-01B Day Operations Only**

Interval	Installed	Required	Procedure
C	8	0	(M)

May be inoperative for day operations.

NOTE: If possible, dispatch under MEL item 33-11-01A instead.

**MAINTENANCE (M)**

Inform MOC that the aircraft cannot fly at night until this defect is rectified.

- 
- 33-11           **Wing Tip Position Lights**  
 33-11-02       Light Bulbs/Lamps (-800 Blended Winglet with Single Plastic Lens)  
 33-11-02A      Both Red Wing Tip Bulbs Operate Normally

Interval	Installed	Required	Procedure
C	8	5	

Any except following minimum may be inoperative for **day and night operations**:

- a. Both stationary red wing tip bulbs.
  - b. One stationary green wing tip bulb.
  - c. One stationary white tail light bulb at each wing tip position.
- 

- 33-11           **Wing Tip Position Lights**  
 33-11-02       Light Bulbs/Lamps (-800 Blended Winglet with Single Plastic Lens)  
 33-11-02B      One Red Wing Tip Bulb Operates Normally

Interval	Installed	Required	Procedure
B	8	4	

Any except following minimum may be inoperative for **day and night operations**:

- a. One stationary red wing tip bulb.
  - b. One stationary green wing tip bulb.
  - c. One stationary white tail light bulb at each wing tip position.
- 

- 33-11           **Wing Tip Position Lights**  
 33-11-02       Light Bulbs/Lamps (-800 Blended Winglet with Single Plastic Lens)  
 33-11-02C      **Day Operations Only**

Interval	Installed	Required	Procedure
C	8	0	(M)

May be inoperative for day operations.

NOTE: If possible, dispatch under MEL item 33-11-02A/B instead.

---

### **MAINTENANCE (M)**

Inform MOC that the aircraft cannot fly at night until this defect is rectified.

- |             |   |
|-------------|---|
| 33-11       | Wing Tip Position Lights  |
| 33-11-02    | Light Bulbs/Lamps (-800 Blended Winglet with Single Plastic Lens) |
| 33-11-02-01 | DELETED (Stationary Red Wingtip Light Bulbs/Lamps)                |

Interval	Installed	Required	Procedure

Deleted Revision 49a.



**BOEING B737-800  
MINIMUM EQUIPMENT LIST**

## Section 2: ATA 33 Lights

**33-12      Door Locked Light (Flight Deck to Cabin) (Not 14 CFR 25.795 Compliant)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided locking function operates normally.

**33-13            DELETED (Master Caution Lights)**

Interval	Installed	Required	Procedure

Deleted prior to Revision 27.

-----

**33-14            Exterior Emergency Lighting System**  
**33-14A        Day Operations**

Interval	Installed	Required	Procedure
B	1	0	(M)

May be inoperative provided operations are not conducted at night.

-----

**MAINTENANCE (M)**

Inform MOC that the aircraft cannot fly at night until this defect is rectified.

**33-14            Exterior Emergency Lighting System**  
**33-14B        All Cargo Operations**

Interval	Installed	Required	Procedure
B	1	0	

May be inoperative for all-cargo night operations provided forward entry door escape slide lights operate normally.

-----

---

**33-15           Interior Emergency Exit Lighting System**  
**33-15-01       Mixed or All-Cargo Configuration**

Interval	Installed	Required	Procedure
C	1	0	

Lights may be inoperative in cargo areas provided:

- a. No persons occupy that area.
  - b. Forward entrance door light operates normally at all times.
- 

---

**33-15           Interior Emergency Exit Lighting System**  
**33-15-02       Emergency Aisle Lights (-800)**

Interval	Installed	Required	Procedure
C	-	-	

Light assemblies installed above aisle may be inoperative provided no two adjacent (opposite side) light assemblies are inoperative.

---

---

**33-15           Interior Emergency Exit Lighting System**  
**33-15-04       Flight Deck Exit Light**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided operations are not conducted at night.

---

**MAINTENANCE**

Inform MOC that the aircraft cannot fly at night until this defect is rectified.

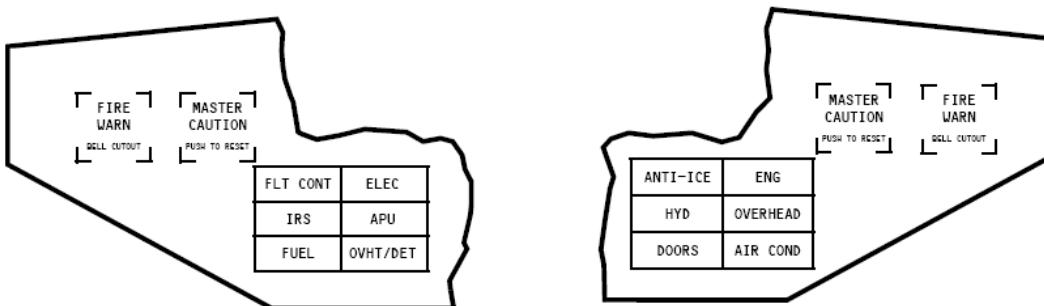
**33-16 System Announcer Lights, Left and Right (Pilot's**
**Light Shield)**
**33-16A Light for Operative System**

Interval	Installed	Required	Procedure
C	12	11	(O)

Any one light may be inoperative for an operating system.

**OPERATIONS (O)**

1. Check that associated system indicator light(s) on associated panel is operating normally.
2. If the MASTER CAUTION light illuminates with none of the annunciator lights illuminated, it can be assumed that the system with the placard LIGHT INOP is affected.
3. Just prior to descent, check the associated panel for any light indications associated with the inoperative system annunciator light(s).



MASTER CAUTION SYSTEM ANNUNCIATOR LIGHTS

**33-16 System Announcer Lights, Left and Right (Pilot's**
**Light Shield)**
**33-16B Light for Inoperative System**

Interval	Installed	Required	Procedure
C	12	8	

May be inoperative for an associated inoperative system provided that:

1. FLT CONT, ELEC, IRS, FUEL, OVHT/DET, ENG, HYD, OVERHEAD must be operative.

**NOTE:**

1. If a subsystem of APU/ANTI-ICE/DOORS/AIR COND is u/s and the associated annunciator light is also u/s, the entire associated system must be considered to be inoperative.

---

**33-17            Flight Deck Master Lights Test and Individual Light's  
Press-To-Test Features**

Interval	Installed	Required	Procedure
C	-	0	(O)

May be inoperative provided intended function of associated light(s) is verified once each flight day.

---

**OPERATIONS (O)**

1. If master test feature fails to illuminate a light(s), press the affected light(s) and confirm push-to-test feature causes the bulb(s) to illuminate.
2. If individual push-to-test feature also fails to illuminate a light(s), perform an appropriate operational or system test and verify the affected light illuminated as intended.

**33-18            Wheel Well Lights**
**33-18-01        Dome Lights**

Interval	Installed	Required	Procedure
C	3	0	

NOTE: Refer to the Marker next to the inoperative light in the wheel well for identification.

**33-18            Wheel Well Lights**
**33-18-02        Inspection Flood Lights**
**33-18-02-02      -800**

Interval	Installed	Required	Procedure
D	2	0	

NOTE: For B737 Next Generation, due to the deletion of the landing gear viewing ports, Inspection Flood Lights are not required for dispatch.

NOTE: Refer to the Marker next to the inoperative light in the wheel well for identification. The Inspection Flood Lights have Markers containing the word "INSPECTION".

**33-19 Floor Proximity Emergency Escape Path Marking****System (All models and STC's)****33-19-01 Incandescent Lighting System**

Interval	Installed	Required	Procedure
C	4	2	

1. All floor aisle marker lights with arrow must be operative.
2. The most forward and farthest aft aisle marker lights must be operative.
3. Every other floor aisle marker light must be operative (no two adjacent marker lights may be inoperative).
4. Sidewall exit indicators must have two of the five lamps operating.

**OPERATIONS NOTE**

Ensure as per requirements.

**33-19 Floor Proximity Emergency Escape Path Marking****System (All models and STC's)****33-19-02 Photoluminescent Lighting system**

Interval	Installed	Required	Procedure
C	1	Refer Below	

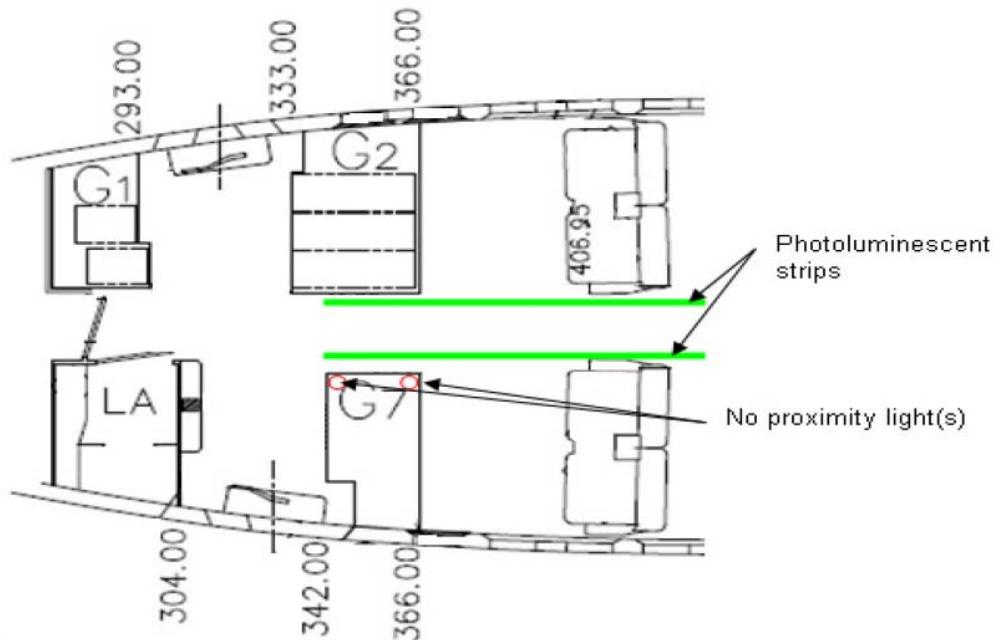
**May be inoperative provided:**

1. The colored photoluminescent escape path marking system installed by Boeing is designated by part numbers SG8826-1-xxx and SG9904-1-xxx where xxx indicates the color of the filter.
2. The following are the minimum dispatch requirements for the Boeing-installed standard or colored photoluminescent proximity lighting system for all 737 models except for the 737-900ER with the mid-exit door installed.
  - A. Sidewall exit indicators must have three of the five lamps operating.
  - B. A maximum of 5 inches of any length of colored photoluminescent strip between 15 inches and 72 inches in length may be inoperative.
  - C. A maximum of 5 inches of any length of colored photoluminescent strip between 15 inches and 79 inches in length may be inoperative.

**NOTE:** If the following restrictions are not met, there is no relief for the entire Boeing-installed standard or colored photoluminescent system. All sections of the photoluminescent strips and all five lamps in the exit identifiers at all exits are required to be operational for dispatch.

- 1) No proximity light(s) allowed on forward left hand and/or right hand monument(s).
- 2) Photoluminescent strips must terminate at or forward of aft face of forward left hand closet or galley.
- 3) Photoluminescent strips must terminate at or forward of aft face of windscreens/stowage if present.

- 4) No breaks in photoluminescent exit path allowed and/or large joggles in forward area near door 1.
- 5) Gap between forward left hand monument (stand alone windscreens/stowage only) and seats cannot exceed 39 inches (distance measured from aft face of monument to seat stud); no restriction if forward left hand monuments is not a windscreens/stowage unit (i.e. galley, closet, etc...)
- 6) Gap between forward right hand monument and seats cannot exceed 41 inches (distance measured from aft face of monument to seat stud).



The picture above depicts most of the constraints mentioned in step 2.C. Gaps are measured from aft face of the monument to the seat stud of the seat. In example above, the gap on each side of the aisle is 40.95 inches, photoluminescent strips terminate at forward face of left hand monument, and there are no proximity lights (empty circles represent the lack of proximity lights) on forward left hand monument and the configuration is therefore covered by MMEL conditions.

For SafTGlo (STG) installed Blue Slimline system (FAA STC ST01829AT):

1. Top cover or casing: Less than 10% of any 48-inch (1.22 m) length can be stained, cracked, or damaged.
2. Photoluminescent Elements: Less than 10% of any 48-inch (1.22 m) length can be missing, stained, or damaged.
3. Outboard Lateral Extensions at Exits: Cover, casing and photoluminescent insert required at all Type III hatch exits. Missing portions of casing or damaged edge flanges acceptable provided inner elements remain secure and unobstructed.
4. End Caps or Ramps: Damage is acceptable if inner elements / inserts remain secured (not applicable to encapsulated components).
5. Electrically illuminated Exit Marker: All lamps must be operative.

---

**33-19      Floor Proximity Emergency Escape Path Marking System (All models and STC's)**

**33-19-03    Seat Mounted LED and Incandescent Lighting Systems**

Interval	Installed	Required	Procedure
C	1	Refer Below	

May be inoperative provided the following minimum dispatch requirements for the Boeing designed LED or incandescent system are met:

- A. All monument mounted lights are operative.
  - B. All lights within two seat rows of a monument (including a class divider) must be operative.
  - C. All lights within two seat rows of the Type III Exit must be operative.
  - D. No two adjacent seat mounted lights may be inoperative.
  - E. All flood lights and exit identifiers must have two of the five lamps operating.
-



BOEING B737-800  
MINIMUM EQUIPMENT LIST

Section 2: ATA 33  
Lights

**33-20      LOGO Light System**

Interval	Installed	Required	Procedure
D	1	0	

---

**33-23 Master Dim System**

Interval	Installed	Required	Procedure
B	1	0	

Dim function may be inoperative provided:

- a. TEST and BRT functions operate normally.
- b. Except during light test, switch is placed in BRT.
- c. Light intensity is acceptable to flight crew.

**33-25 Service Area Light Systems (Nose, Electrical Equipment, Air Conditioning, Aft Accessory, APU, Tailcone Compartments, and Fueling Panel)**

**33-25A Day And Night Operations**

Interval	Installed	Required	Procedure
C	27	0	

NOTE: Consider dispatch under MEL 33-25B (repair interval D).

**33-25 Service Area Light Systems (Nose, Electrical Equipment, Air Conditioning, Aft Accessory, APU, Tailcone Compartments, and Fueling Panel)**

**33-25B Day Operations**

Interval	Installed	Required	Procedure
D	27	0	(M)

May be inoperative provided operations are not conducted at night.

NOTE: Consider dispatch under MEL 33-25A (day and night operations).

**MAINTENANCE (M)**

Inform MOC that the aircraft cannot fly at night until this defect is rectified.

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- 
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**34-01            Mach/Airspeed Indications**
**34-01-01        Mach Indications**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided one Mach/Airspeed warning and Mach trim system operate normally.

-----

**34-01            Mach/Airspeed Indications**
**34-01-01        Mach Indications**
**34-01-01-02      -800**

Interval	Installed	Required	Procedure
C	2	0	(M) [P]

May be inoperative provided:

- a. Airplane remains at or below FL 280.
  - b. Airspeed remains at or below 320 KIAS.
- 

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that performance is affected.

---

**34-02            Mach/Airspeed Warning Systems**  
**34-02-01        Maximum Operating Speed Indication**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided clacker warning system operates normally and is independent from Mach Indicator.

---

**34-02            Mach/Airspeed Warning Systems**
**34-02-02        Clacker**
**34-02-02-02      -800**
**34-02-02-02A One Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

---

**34-02            Mach/Airspeed Warning Systems**
**34-02-02        Clacker**
**34-02-02-02      -800**
**34-02-02-02B Airspeed Limitations Are Observed**

Interval	Installed	Required	Procedure
B	2	0	

Systems may be inoperative provided:

- Both Mach indicators operate normally.
  - .330 KIAS /.76 Mach airspeed limitations are observed.
  - If overspeed warning occurs earlier than scheduled during flight, speed must remain below point at which warning occurs.
- 

**34-02            Mach/Airspeed Warning Systems**
**34-02-02        Clacker**
**34-02-02-02      -800**
**34-02-02-02C Airspeed Limitations Are Observed, Deactivate Systems**

Interval	Installed	Required	Procedure
B	2	0	

Systems may be inoperative provided:

- Both Mach indicators operate normally.
  - .330 KIAS /.76 Mach airspeed limitations are observed.
  - If overspeed warning occurs below .76 Mach, system must be deactivated by pulling associated circuit breaker and observe speed limits.
-



BOEING B737-800  
MINIMUM EQUIPMENT LIST

Section 2: ATA 34  
Navigation

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Aug 10, 2020

Issued by the Technical Services Department, Malaysia Airlines Berhad

REV NO: 08

2.34-02.2  
Internal Use Only

**34-03 Altimeter Vibrators****34-03-01 Servo Pneumatic**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided associated air data computer operates normally.

-----

**34-03 Altimeter Vibrators****34-03-02 Pneumatic**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided VMC exist at departure and arrival airports.

-----

**34-03 Altimeter Vibrators****34-03-03 Pneumatic (With Electric /Electronic Altimeter)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided VMC exist at departure and arrival airports.

-----

**34-03 Altimeter Vibrators****34-03-04 One Pneumatic and One Servo-Pneumatic****34-03-04A Servo-Pneumatic Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

Servo-Pneumatic may be inoperative provided associated air data computer operates normally.

-----

- 34-03 Altimeter Vibrators**  
**34-03-04 One Pneumatic and One Servo-Pneumatic**  
**34-03-04B Pneumatic Inoperative**

Interval	Installed	Required	Procedure
C	2	1	

Pneumatic may be inoperative provided VMC exist at departure and arrival airports.

-----

- 34-03 Altimeter Vibrators**  
**34-03-05 Standby Altimeter Vibrator (With Electric /Electronic Altimeter)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided VMC exist at departure and arrival airports.

-----

**34-04            Static Air Temperature Indication**

Interval	Installed	Required	Procedure
D	1	0	

---

**34-05 Total Air Temperature Indication**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided an alternate air temperature indication (e.g. PDGS, FMCS, RAT, SAT) operates normally.

-----

**OPERATIONS NOTE**

With static air temperature available, the following table may be used to determine TAT:

TOTAL AIR TEMPERATURE (°C) vs STATIC AIR TEMPERATURE (°C)

SAT (°C)	TAT (°C)											
	M.50	M.60	M.68	M.70	M.72	M.74	M.76	M.78	M.80	M.82	M.84	M.86
40	56	62	69	70								
35	51	57	64	65	66	68	70					
30	45	52	58	59	61	63	65	67	68	70		
25	40	47	52	54	56	57	59	61	63	64	66	68
20	35	41	47	48	50	51	53	55	57	58	60	63
15	30	36	42	43	44	46	48	49	51	53	55	57
10	24	31	36	37	38	40	43	44	46	47	49	51
5	19	25	31	32	33	35	37	38	40	41	43	45
0	13	20	25	26	28	29	31	33	34	36	38	40
-5	8	14	20	21	22	24	26	27	29	30	32	34
-10	3	9	14	15	17	19	20	22	23	25	26	28
-15	-2	3	9	10	11	13	14	16	17	19	21	23
-20	-7	-2	3	4	6	7	9	10	12	13	15	17
-25	-12	-7	-3	-1	0	2	3	5	6	8	9	11
-30	-18	-12	-8	-7	-5	-4	-2	-1	1	2	4	6
-35	-23	-17	-13	-12	-10	-9	-8	-7	-5	-4	-2	0
-40	-28	-23	-18	-17	-16	-15	-13	-12	-11	-9	-7	-6
-45	-34	-29	-24	-23	-21	-20	-19	-17	-16	-14	-13	-11
-50	-39	-34	-29	-28	-27	-26	-24	-23	-21	-20	-19	-17
-55	-44	-39	-35	-34	-32	-31	-30	-28	-27	-26	-24	-23
-60	-49	-45	-40	-39	-38	-37	-35	-34	-33	-31	-30	-28
-65	-55	-50	-46	-45	-43	-42	-41	-40	-38	-37	-36	-34
-70	-60	-55	-51	-50	-49	-48	-47	-45	-44	-43	-41	-40

---

**34-07           Standby Horizon Indicator**

**34-07-01       Standby Attitude Indicator**

Interval	Installed	Required	Procedure
<b>B</b>	<b>1</b>	<b>0</b>	

May be inoperative provided:

- a. Operations are conducted in Day VMC only.
  - b. Operations are not conducted into known or forecast over-the-top conditions.
- 

**34-07           Standby Horizon Indicator**

**34-07-02       ILS Indication**

Interval	Installed	Required	Procedure
<b>D</b>	<b>1</b>	<b>0</b>	



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**34-08 Angle of Attack Indications**

Interval	Installed	Required	Procedure
C	1	0	

- 
- 34-11 Standby Magnetic Compass**  
**34-11A Any Combination of 3 Gyro or INS(IRU) Compass Systems Operative [NOT APPLICABLE]**

Interval	Installed	Required	Procedure
<b>B</b>	<b>1</b>	<b>0</b>	

May be inoperative provided any combination of three gyro or INS (IRU) stabilized compass systems are operative.

---

- 34-11 Standby Magnetic Compass**  
**34-11B Any Combination of 2 Gyro or INS(IRU) Compass Systems Operative**

Interval	Installed	Required	Procedure
<b>B</b>	<b>1</b>	<b>0</b>	<b>(M)</b>

May be inoperative provided:

- a. Any combination of two gyro or INS (IRU) stabilized compass systems are operative.
  - b. Airplane is operated with dual independent navigation capability and under positive radar control by ATC on enroute portion of flight.
- 

#### **MAINTENANCE (M)**

Advise MOC, FDC and OCC on sector restriction (airplane must be operated with dual independent navigation capability and under positive radar control by ATC on enroute portion of flight).



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- 34-11 Standby Magnetic Compass**  
**34-11C Two Stabilized Directional Gyro Systems Operative**  
**[NOT APPLICABLE]**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative for flights that are entirely within areas of magnetic unreliability provided two stabilized directional gyro systems are installed, operative, and used in conjunction with free gyro navigation techniques.

— (Continued from back cover) —

**34-12 Flight Director Systems**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided approach minimums do not require its use.

Note: For RNP AR Operations,

- i) One Autopilot system and two Flight Director systems must be operative for RNP0.15 (or greater) operations.
  - ii) Two Autopilot systems and two Flight Director systems must be operative for less than RNP 0.15 operations.
-

**34-13 Distance Measuring Equipment Systems**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided operating procedures do not require its use.

-----  
NOTE: Deleted

**MAINTENANCE NOTE****For -800:**

1. To prevent an inoperative DME from sending invalid position updates to the FMC, DME position updating can be inhibited by setting the DME UPDATE field on the FMC CDU NAV OPTIONS page 2/2 to OFF.
2. Alternatively the affected DME may be deactivated by opening and collaring the associated DME circuit breaker on the P6 or P18 panel.
3. The FMC will perform DME/DME position updates using a single operative DME.

**34-14 Marker Beacon Receiver System**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided approach minimums do not require its use.

-----

**34-15 Weather Radar**

Interval	Installed	Required	Procedure
-	1	1	

Must be operative.

**34-15 Weather Radar**
**34-15-03 Windshear Detection and Avoidance System  
(Predictive)**
**34-15-03A Alternate Procedures Required**

Interval	Installed	Required	Procedure
B	1	0	(O)

May be inoperative provided alternate procedures are established and used.

NOTE: Operator's alternate procedures should include reviewing windshear avoidance and windshear recovery procedures.

**OPERATIONS (O)**

Flight Crew are to ensure weather condition is suitable for flight and seeks PIREPS and windshear reports or warning prior to take off and approach. If windshear is encountered, perform Windshear Escape Maneuver as per FCOM/QRH recommendations.

Use procedures to increase flight crew awareness of airplane configuration, altitude and flight path. This may include flight crew use of all airplane systems available (autopilot, autoland, ILS, FMCS) and flight crew review of Minimum Enroute Altitudes (MEA's) and altitude call outs.

- 
- 34-15 Weather Radar**  
**34-15-03 Windshear Detection and Avoidance System (Predictive)**  
**34-15-03B Reactive Windshear Warning System Operates Normally**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- a. Alternate procedures are established and used.
  - b. Windshear Warning and Guidance System (Reactive) operates normally.
- 

### **OPERATIONS (O)**

Flight Crew are to ensure weather condition is suitable for flight and seeks PIREPS and windshear reports or warning prior to take off and approach. If windshear is encountered, perform Windshear Escape Maneuver as per FCOM/QRH recommendations.

Use procedures to increase flight crew awareness of airplane configuration, altitude and flight path. This may include flight crew use of all airplane systems available (autopilot, autoland, ILS, FMCS) and flight crew review of Minimum Enroute Altitudes (MEA's) and altitude call outs.

- 
- 34-15 Weather Radar**  
**34-15-04 Autotilt/Multiscan Function (Including STCs ST01843AT, ST01470LA-D)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided manual tilt function operates normally.

---

- 34-15 Weather Radar**  
**34-15-05 Stabilization Function**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided:

- a. Manual tilt control operates normally.
- b. Antenna is verified to scan in a horizontal plane with tilt at zero degrees.

---



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**MAINTENANCE (M)**

Because of the equipment/installation differences, airlines must establish appropriate procedures for verifying the radar antenna scans in a horizontal plane with the tilt at zero degrees.

**34-16 Radio Compass Systems (ADF)**

Interval	Installed	Required	Procedure
D	1	0	

Maybe inoperative provided there are other means of navigation such as GPS, MMR or INS is operative which provides the pilot with a visual indication of the aircraft's position relative to the intended route.

-----

**34-17 VHF Navigation Systems (VOR/ILS)**
**34-17-03 -800**
**34-17-03-01 VOR Systems**

Interval	Installed	Required	Procedure
B	2	1	

No.1 VHF navigation system must be serviceable.

-----  
NOTE: Deleted

**34-17 VHF Navigation Systems (VOR/ILS)**
**34-17-03 -800**
**34-17-03-02 ILS Systems**

Interval	Installed	Required	Procedure
B	2	1	

No.1 ILS must be serviceable

-----  
NOTE: Deleted

**OPERATIONS NOTE**

When dispatched with an inoperative R-ILS, manually tune an ILS frequency on the left Navigation Control Panel (P8) prior to takeoff to prevent display of the GPWS INOP light in flight.

NO AUTOLAND will be displayed in the flight mode annunciation autopilot status on fail operational equipped airplanes.

For one ILS inoperative, SINGLE CH will be displayed in the flight mode annunciation autopilot status.

---

**34-18            ATC Transponders and Automatic Altitude Reporting Systems****34-18A        ATC Transponders – One Inoperative**

Interval	Installed	Required	Procedure
B	2	1	

One may be inoperative.

NOTE: One altitude reporting transponder must be serviceable for RVSM operations.

---

**34-18            ATC Transponders and Automatic Altitude Reporting Systems****34-18B        ATC Transponders – Both Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M) (O)

Except for RVSM operations, both ATC Transponders may be inoperative subject to respective local ATC clearance.

NOTE: One altitude reporting transponder must be serviceable for RVSM operations.

**MAINTENANCE (M)**

1. Advise FDC to obtain ATC clearance for the sector(s) if required.
2. Inform MOC immediately and MOC to advise OCC and FDC of RVSM restriction on daily basis.
3. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase "AIRCRAFT NOT APPROVED FOR RVSM OPERATIONS."

**OPERATIONS (O)**

Obtain ATC clearance if required for sector(s).

**34-18 ATC Transponders and Automatic Altitude Reporting Systems**
**34-18C Altitude Reporting Function – One Inoperative**

Interval	Installed	Required	Procedure
B	2	1	

One may be inoperative.

NOTE: One altitude reporting transponder must be serviceable for RVSM operations.

**34-18 ATC Transponders and Automatic Altitude Reporting Systems**
**34-18D Altitude Reporting Function – Both Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M) (O)

Except for RVSM operations, both systems altitude reporting function may be inoperative on sectors not requiring this function.

NOTE: One altitude reporting transponder must be serviceable for RVSM operations.

**MAINTENANCE (M)**

1. Advise FDC to obtain ATC clearance for the sector(s) if required.
2. Inform MOC immediately and MOC to advise OCC and FDC of RVSM restriction on daily basis.
3. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase "AIRCRAFT NOT APPROVED FOR RVSM OPERATIONS."

**OPERATIONS (O)**

Obtain ATC clearance if required for sector(s).

**34-18 ATC Transponders and Automatic Altitude Reporting Systems****34-18-01 Elementary and Enhanced Downlink Aircraft Reportable Parameters not Required by 14 CFR**

Interval	Installed	Required	Procedure
A	2	0	

May be inoperative provided:

- a. Operations do not require its use.
- b. Repairs are made prior to completion of next heavy maintenance visit.

NOTE: CAR 2016 does not require Elementary or Enhanced Downlink Aircraft Reportable Parameters for operations in Malaysian airspace.

**34-18 ATC Transponders and Automatic Altitude Reporting Systems****34-18-02 ADS-B Out Extended Squitter Transmissions****34-18-02A Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided that:

- a. Other flight monitoring equipment (ACARS or SATCOM) is available and capable to cover the entire area of operation. Refer to FDC for coverage area.
- b. Authorization is obtained from ATC facilities having jurisdiction over planned route of flight.

NOTE 1: Any ADS-B Out function that operates normally may be used

NOTE 2: ADS-B is mandatory in certain airspace. Dispatch with ADS-B inoperative to such areas may required obtaining specific authorization. Consult OCC/FDC for current requirements.

**MAINTENANCE NOTE**

If aircraft is not qualified for ADS-B operations:

1. Inform MOC immediately and MOC to advise OCC and FDC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for ADS-B operations."

**OPERATIONS (O)**

1. If ADS-B not available, avoid ADS-B routing.
2. If needed and if two ADS-B are installed and one is inoperative, select transponder to operative side with ADS-B Out function.



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**34-18            ATC Transponders and Automatic Altitude Reporting Systems**

**34-18-02        ADS-B Out Extended Squitter Transmissions**

**34-18-02B      [DELETED] Required by 14 CFR**

Interval	Installed	Required	Procedure

**DELETED IN MAB REVISION NO: 08.**

-----

- 34-20      Radio Altimeter Systems**  
**34-20-01    Receiver/Transmitters**  
**34-20-01-03 -800**

Interval	Installed	Required	Procedure
C	2	1	(M) (O)

May be inoperative deactivated provided:

- a. Approach minimums or operating procedures do not require its use.
- b. Associated autopilot is not used for approach and landing.
- c. Autothrottle is not used for approach and landing.
- d. Associated flight director is not used for approach and landing.

NOTE 1 : For RNP AR Operations, two Radio Altimeter Systems must be operative.

NOTE 2 : During takeoff with one radio altimeter inoperative, the flight directors and autopilot should be controlled by the FCC on the same side as the valid radio altimeter (i.e., the first flight director and/or autopilot to be engaged must be receiving valid radio altitude data).

NOTE 3 : All MH B737-800 aircraft are equipped with FCC OPS software later than P/N 2212-HNP-03B-05.

-----

### **MAINTENANCE (M)**

Do these steps (AMM 34-00-00/901):

1. Open and collar associated P6-1/P18-1 panel Radio Altimeter circuit breaker to deactivate the inoperative radio altimeter.  
 NOTE: With one radio altimeter deactivated, the SPEED BRAKE DO NOT ARM light will illuminate on the ground when speed brake handle is moved from the DOWN detent.
2. For airplanes without FCC Operational Program Software (OPS) 2212-HNP-03B-05 or later installed, re-initialize the Flight Control Computer (FCC) associated with the inoperative radio altimeter by momentarily opening and then closing the applicable P6-2/P18-1 panel FCC circuit breaker.  
 NOTE: Rockwell Collins FCC Operational Program Software (OPS) part numbers are considered to be equivalent to Honeywell FCC OPS part number 2212-HNP-03B-05 and later.
3. For airplanes with PSEU part number 285A1600-5 or earlier, refer to MEL Item 32-17. An invalid radio altimeter signal will generate a dispatchable PSEU fault.

### **OPERATIONS (O)**

NOTE: For airplanes with -1, -2, or -3 SMYD, an invalid signal from radio altimeter number 1 will result in failure of both stick shakers to self test.

1. Ensure that weather minimums or operating procedures are not dependent upon its use.
2. With a radio altimeter inoperative, do not use the associated autopilot, associated flight director or autothrottle for approach and landing.

**NOTE:** The FCC engages LNAV when the radio altimeters indicate that airplane is 50ft above ground level (AGL). Dispatching with an inoperative radio altimeter system may generate an erroneous radio height indication of 50 ft AGL and may cause the LNAV FMA to flash when armed on ground.

**3. For airplanes with FCC Operational Program Software (OPS)**

2212-HNP-03B-05 or later installed, if the remaining radio altimeter fails:

**NOTE:** Rockwell Collins FCC Operational Program Software (OPS) part numbers are considered to be equivalent to Honeywell FCC OPS part number 2212-HNP-03B-05 and later.

A. AFDS (both sides) will limit the bank angle to a maximum of 8 degrees in all roll modes.

B. Use of the Autopilot/Flight Director System (AFDS) is at the discretion of the flight crew. AFDS may not:

1) Command sufficient bank angle to execute proper departure and/or approach maneuvers.

2) Make enroute course changes within airspace limitations.

**4. For airplanes without FCC Operational Program Software (OPS)**

2212-HNP-03B-05 or later installed, dispatch with an inoperative radio altimeter:

**NOTE:** Rockwell Collins FCC Operational Program Software (OPS) part numbers are considered to be equivalent to Honeywell FCC OPS part number 2212-HNP-03B-05 and later.

A. Results in the same side Autopilot/Flight Director System (AFDS) limiting the bank angle to 8 degrees in LNAV mode.

B. The opposite side AFDS (operative radio altimeter) is not affected.

C. Failure of the remaining radio altimeter can result in:

1) AFDS (both sides) limiting the bank angle to a maximum of 8 degrees (all roll modes) when flaps are extended, 8 degrees in LNAV with flaps retracted.

2) Use of the Autopilot/Flight Director System (AFDS) is at the discretion of the flight crew. AFDS may not:

a. Command sufficient bank angle to execute proper departure and/or approach maneuvers.

b. Make enroute course changes within airspace limitations.

**34-20            Radio Altimeter Systems**

**34-20-02        Indications**

**34-20-02A      NOT APPLICABLE [Radio Altimeters Operate Normally]**

Interval	Installed	Required	Procedure

**34-20      Radio Altimeter Systems**

**34-20-02      Indications**

**34-20-02B      Associated Receiver/Transmitter Verified To Operate Normally**

Interval	Installed	Required	Procedure
C	2	0	(M) (O)

May be inoperative provided:

- a. Associated receiver/transmitter is verified to operate normally.
  - b. Approach minimums or operating procedures do not require its use.
- - - - -

**MAINTENANCE (M)**

To verify that the associated receiver/transmitter is operating normally, refer to the Airplane Maintenance Manual for troubleshooting and system test procedures.

For -800:

Reference AMM 34-33-00.

**OPERATIONS (O)**

Ensure that weather minimums or operating procedures are not dependent upon its use.



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**34-23 True Airspeed Indication**

Interval	Installed	Required	Procedure
C	2	0	

**34-25 Altitude Alerting System**

Interval	Installed	Required	Procedure
A	1	0	(M) (O)

Except for RVSM operations, may be inoperative provided:

- a. Autopilot with altitude hold, and altitude capture operates normally.
  - b. Enroute operations, i.e. RVSM, do not require its use.
  - c. Airplane does not depart from an airport where repair or replacement can be made.
  - d. Repairs are made within three flight days.
- 

**MAINTENANCE (M)**

If airplane is not qualified for operations on RVSM routes;

1. Inform MOC immediately and MOC to advise OCC and FDC of RVSM restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "AIRCRAFT NOT APPROVED FOR RVSM OPERATIONS."

**OPERATIONS (O)**

NOTE: An operative Altitude Alerting System is required for RVSM operations.

Use procedures to increase flight crew awareness of altitude, which may include the following:

1. Determine that at least one autopilot is operating normally and that altitude hold and altitude capture are operating normally.
2. Use the autopilot and altitude hold for all operations for which it is appropriate.
3. Cross-check Captain's and First Officer's altitude displays upon reaching and departing assigned altitude. Periodically cross-check altitude indications when maintaining an assigned altitude.
4. Pilot not flying should call out approaching and departing assigned altitudes.
5. Flight Deck Crew must be aware that the usual alerts for altitude deviations will not occur.

---

**34-25 Altitude Alerting System****34-25-01 Aural Alert**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- a. Visual alert operates normally.
- b. Auto-pilot with altitude hold and altitude capture operates normally.

**34-25 Altitude Alerting System****34-25-02 Visual Alert**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

- c. Aural alert operates normally.
- d. Auto-pilot with altitude hold and altitude capture operates normally

**34-26 Terrain Awareness and Warning System (TAWS)  
34-26-01 Ground Proximity Warning System (GPWS)**

Interval	Installed	Required	Procedure
A	1	0	(M) (O)

Except for test/base training and operation in-to KTM, may be inoperative provided:

- a. Two VHF Navigation Systems operate normally.
- b. Repairs are made within two flight days.

NOTE 1: For individual GPWS modes or functions refer to subsequent MEL sub items further below.

NOTE 2: For RNP AR operations, GPWS/EGPWS must be operative.

---

**MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

**OPERATIONS (O)**

Flight Crew are to ensure weather condition is suitable for flight and seeks PIREPS and windshear reports or warning prior to take off and approach. If windshear is encountered, perform Windshear Escape Maneuver as per FCOM/QRH recommendations.

---

**34-26 Terrain Awareness and Warning System (TAWS)  
34-26-01 Ground Proximity Warning System (GPWS)  
34-26-01-01 Modes 1 thru 4**

Interval	Installed	Required	Procedure
A	4	0	(M) (O)

Except for test/base training and operation in-to KTM, may be inoperative provided:

- a. Two VHF Navigation Systems operate normally.
- b. Repairs are made within two flight days.

NOTE: For RNP AR operations, GPWS/EGPWS must be operative.

---

**MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

**OPERATIONS (O)**

Flight Crew are to ensure weather condition is suitable for flight and seeks PIREPS and windshear reports or warning prior to take off and approach. If windshear is encountered, perform Windshear Escape Maneuver as per FCOM/QRH recommendations.

**34-26 Terrain Awareness and Warning System (TAWS)**

**34-26-01 Ground Proximity Warning System (GPWS)**

**34-26-01-02 Test Mode**

Interval	Installed	Required	Procedure
<b>A</b>	<b>1</b>	<b>0</b>	

Except for test/base training and operation in-to KTM, may be inoperative provided:

- a. GPWS is considered inoperative.
- b. Repairs are made within two flight days.

**34-26 Terrain Awareness and Warning System (TAWS)**

**34-26-01 Ground Proximity Warning System (GPWS)**

**34-26-01-03 Glideslope Deviation(s) (Mode 5)**

**34-26-01-03A One Inoperative**

Interval	Installed	Required	Procedure
<b>C</b>	<b>2</b>	<b>1</b>	<b>(M)</b>

Except for test/base training and operation in-to KTM, one may be inoperative.

NOTE: For RNP AR operations, GPWS/EGPWS must be operative.

**MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

- 
- 34-26 Terrain Awareness and Warning System (TAWS)**  
**34-26-01 Ground Proximity Warning System (GPWS)**  
**34-26-01-03 Glideslope Deviation(s) (Mode 5)**  
**34-26-01-03B Both Inoperative**

Interval	Installed	Required	Procedure
A	2	0	(M)

Except for test/base training and operation in-to KTM, both may be inoperative provided repairs are made within two flight days.

NOTE: For RNP AR operations, GPWS/EGPWS must be operative.

---

### **MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
  2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."
- 

- 34-26 Terrain Awareness and Warning System (TAWS)**

- 34-26-01 Ground Proximity Warning System (GPWS)**

- 34-26-01-04 Minimums, Minimums Alert (Mode 6)**

Interval	Installed	Required	Procedure
A	1	0	(M)

Except for test/base training and operation in-to KTM, may be inoperative provided repairs are made within two flight days.

NOTE: For RNP AR operations, GPWS/EGPWS must be operative.

---

### **MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

**34-26 Terrain Awareness and Warning System (TAWS)**
**34-26-01 Ground Proximity Warning System (GPWS)**
**34-26-01-05 Windshear Warning (Mode 7)**

Interval	Installed	Required	Procedure
A	1	0	

Except for test/base training and operation in-to KTM, may be inoperative provided repairs are made within two flight days.

**34-26 Terrain Awareness and Warning System (TAWS)**
**34-26-02 Terrain System - Forward Looking Terrain Avoidance (FLTA) and Premature Descent Alert (PDA) Functions**

Interval	Installed	Required	Procedure
B	1	0	(M) (O)

May be inoperative provided alternate procedures are established and used.

NOTE: For RNP AR operations, GPWS/EGPWS must be operative.

**MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

**OPERATIONS (O)**

Flight Crew must maintain awareness of airplane altitude and flight path. Use of enroute, area and approach charts to enhance awareness is recommended while adhering to MORA, MEA and MSA.

**34-26 Terrain Awareness and Warning System (TAWS)**
**34-26-03 Terrain Displays**
**34-26-03A One Required**

Interval	Installed	Required	Procedure
C	2	1	(M)

NOTE: For RNP AR operations, GPWS/EGPWS must be operative.

**MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.

2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

---

**34-26            Terrain Awareness and Warning System (TAWS)**
**34-26-03        Terrain Displays**
**34-26-03B      All Inoperative**

Interval	Installed	Required	Procedure
B	2	0	(M)

NOTE: For RNP AR operations, GPWS/EGPWS must be operative.

---

**MAINTENANCE**

For RNP AR operation is not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR operation."

---

**34-26            Terrain Awareness and Warning System (TAWS)**
**34-26-03        Terrain Displays**
**34-26-03-01     Vision One (STC ST03355AT)**

Interval	Installed	Required	Procedure
D	2	0	

---

**34-26            Terrain Awareness and Warning System (TAWS)**
**34-26-04        Runway Awareness and Advisory System (RAAS)**

Interval	Installed	Required	Procedure
C	1	0	

NOTE: All MAB B738 aircrafts are installed with a Honeywell RAAS called Smart Runway Smart Landing.



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**34-32      Instrument Transfer Switching System**

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Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- a. Associated instruments operate normally from isolated sources.
  - b. Inoperative switches are not moved during flight.
- - - - -

**OPERATIONS (O)**

Check that associated instruments function properly from isolated sources.



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**34-34 MOVED (Standby Altimeter Vibrator)**

Interval	Installed	Required	Procedure

Moved to Item 34-3 prior to Revision 30.

-----

**34-35 Inertial Reference Systems (IRS) (-800)**

Interval	Installed	Required	Procedure
B	2	1	(M) (O) [E]

One may be inoperative provided:

- a. Remaining IRS operates normally and is used for both Attitude Indications and both HSI's.
- b. Flight is restricted to day VMC.
- c. Standby Magnetic Compass operates normally.
- d. Standby Horizon Indicator or ISFD attitude display operates normally.
- e. Both Vertical Speed Indications are switched to remaining IRS, if required.
- f. Autopilots (any mode) are not used.

NOTE: When one IRS is inoperative both autopilot systems should be considered inoperative. For dispatch with both autopilot systems considered inoperative, refer item 22-01.

- g. Aircraft is not operated for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations (where autopilot is required for these operations).
- 

**MAINTENANCE (M)**

For EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RVSM, RNP AR, RNP APCH LNAV/VNAV and Autoland operations. DO NOT USE AUTOPILOT."

**OPERATIONS (O)****For -800:**

1. Place the IRS mode selector switch for the inoperative IRS to OFF.
2. Use the remaining IRS for both attitude, heading and vertical speed indications.
3. Verify that remaining IRS is operating normally by observing attitude and heading flags are out of view on pilot's and copilot's ADI, HSI, VSI and RDMI.
4. Flight is restricted to day VMC.
5. Verify that Standby Magnetic Compass operates normally.
6. Verify Standby Horizon Indicator operates normally.
7. With one IRU inoperative, do not use the autopilots in any mode unless SB 737-22-1140 (-700IGW), 737-22-1150 (-700), or production equivalent is incorporated. With this modification incorporated, the autopilot opposite the failed IRU may be used for cruise operations only.
8. Do not use TO/GA mode of Flight Director and Autopilots (any mode).

Note: The background for not allowing use of the autopilots is because a single operating IRU supplies both pitch and roll inputs to the autopilot. The



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restriction in the MMEL/DDG is intended to prevent a dual axis hardover which, on the 737CL and 737NG airplanes, was determined to be difficult for the flight crew to recover from.

---

**34-35            Inertial Reference Systems (IRS) (-800)**  
**34-35-01        IRS Data Display (Aft Overhead Panel)**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided one FMCS CDU operates normally.

-----

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**34-35            Inertial Reference Systems (IRS) (-800)**  
**34-35-03        IRS Ground Crew Call Horn**

Interval	Installed	Required	Procedure
C	1	0	

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**34-36 Flight Management Computer System (FMCS)**
**34-36-02 -800**
**34-36-02-01 FMC Alert Lights**
**34-36-02-01A One Inoperative**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative provided:

- a. FMC is not used for the autopilot guidance during approach.
- b. Aircraft is not operated for RNP 10, RNP 4 and RNP 2 operations.

NOTE: For RNP AR operations,

- i) two FMC systems must be operative.
- ii) current NDB is required.

**MAINTENANCE (M)**

For RNP 10, RNP 4, RNP 2 and RNP AR operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP 10, RNP 4, RNP 2 and RNP AR operations."

**34-36 Flight Management Computer System (FMCS)**
**34-36-02 -800**
**34-36-02-01 FMC Alert Lights**
**34-36-02-01B Both Inoperative**

Interval	Installed	Required	Procedure
C	2	0	(M)

Both may be inoperative provided:

- a. FMC is not used for autopilot guidance.
- b. Aircraft is not operated for RNP 10, RNP 5, RNP 4, RNP 2, RNP 1 and RNP APCH LNAV/VNAV operations.

NOTE: For RNP AR operations,

- i) two FMC systems must be operative.
- ii) current NDB is required.

**MAINTENANCE (M)**

For RNP 10, RNP 5, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV and RNP AR operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP 10, RNP 5, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV and RNP AR operations."

- 
- 34-36            Flight Management Computer System (FMCS)**  
**34-36-02       -800**  
**34-36-02-02    Computer**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative provided aircraft is not operated for RNP 10, RNP 4, RNP 2, RNP 1, and RNP APCH LNAV/VNAV operations.

NOTE: For RNP AR operations,

- i) two FMC systems must be operative.
  - ii) current NDB is required.
- 

### **MAINTENANCE (M)**

For RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV and RNP AR operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV and RNP AR operations."

### **MAINTENANCE NOTE**

An inoperative FMC may be deactivated by opening and collaring the FMCS CMPTR No. 1 or No. 2 circuit breaker on the P6 or P18 panel, as appropriate.

### **OPERATIONS NOTE**

In order to conduct polar operations, the HDG REF switch must be installed, and one FMC, one CDU, and GPS-L must be operational for dispatch.

On airplanes with dual FMC's installed and one FMC inoperative, operating with the FMC Source Select Switch selected to the operational FMC (BOTH ON L or BOTH ON R) is required to accomplish all Flight Management Computing tasks.

Primary means RNP RNAV operations up to a 10 minute duration can be accomplished with a single FMC. Long range navigation requires single FMC with dual MCDUs with Alternate Navigation capability.

<b>34-36</b>	<b>Flight Management Computer System (FMCS)</b>
<b>34-36-02</b>	<b>-800</b>
<b>34-36-02-02</b>	<b>Computer</b>
<b>34-36-02-02-02</b>	<b>-800</b>

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>0</b>	<b>(M) [E]</b>

May be inoperative provided:

- a. IRS display unit (on aft overhead panel) operates normally.
- b. Speed Reference Selector operates normally.
- c. Aircraft is not operated for EDTO, RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV, RNAV 5, RNAV 1 and 2 operations.

NOTE: For RNP AR operations,

- i) two FMC systems must be operative.
- ii) current NDB is required.

### **MAINTENANCE (M)**

For EDTO, RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV, RNP AR, RNAV 5, RNAV1 and 2 operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis. Instruct FDC to plan for rerouting (via suitable non-RNAV route). Rerouting would be possible on MAB sectors. The rerouting possibly can slightly increase the flight time or fuel. However, if rerouting is not possible the flight cannot be continued.  
Note: RNAV routes are routes that contain airways with prefix L, M, N, P, Q, Y, T, and Z.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV, RNP AR, RNAV 5, RNAV 1 and 2 operations."

### **MAINTENANCE NOTE**

An inoperative FMC may be deactivated by opening and collaring the FMCS CMPTR No. 1 or No. 2 circuit breaker on the P6 or P18 panel, as appropriate.

### **OPERATIONS NOTE**

In order to conduct polar operations, the HDG REF switch must be installed, and one FMC, one CDU, and GPS-L must be operational for dispatch.

On airplanes with dual FMC's installed and one FMC inoperative, operating with the FMC Source Select Switch selected to the operational FMC (BOTH ON L or BOTH ON R) is required to accomplish all Flight Management Computing tasks. Primary means RNP RNAV operations up to a 10 minute duration can be accomplished with a single FMC. Long range navigation requires single FMC with dual MCDUs with Alternate Navigation capability.

- 
- 34-36 Flight Management Computer System (FMCS)**  
**34-36-02 -800**  
**34-36-02-03 CDU/MCDU**  
**34-36-02-03A One Operates Normally**

Interval	Installed	Required	Procedure
C	2	1	(M)

May be inoperative provided:

- Enroute procedures do not require its use.
  - Aircraft is not operated for RNP 10, RNP 4, RNP 2, RNP AR operations.
- 

### **MAINTENANCE (M)**

For RNP 10, RNP 4, RNP 2, RNP AR operations are not allowed:

- Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
- In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP 10, RNP 4, RNP 2, RNP AR operations."

### **OPERATIONS NOTE**

In order to conduct polar operations, the HDG REF switch must be installed, and one FMC, one CDU, and GPS-L must be operational for dispatch.

On airplanes with dual FMC's installed and one FMC inoperative, operating with the FMC Source Select Switch selected to the operational FMC (BOTH ON L or BOTH ON R) is required to accomplish all Flight Management Computing tasks.

Primary means RNP RNAV operations up to 10 minute duration can be accomplished with a single FMC. Long range navigation requires single FMC with dual MCDUs with Alternate Navigation capability.

- 
- 34-36 Flight Management Computer System (FMCS)**

- 34-36-02 -800**  
**34-36-02-03 CDU/MCDU**  
**34-36-02-03B Except EDTO and PBN Operations**

Interval	Installed	Required	Procedure
C	2	0	(M) [E]

May be inoperative provided:

- IRS display unit (on aft overhead panel) operates normally.
  - Unit is not required its use.
  - Aircraft is not operated for EDTO, RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV, RNAV 5, RNAV 1 and 2 operations.
-

### **MAINTENANCE (M)**

For EDTO, RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV, RNP AR, RNAV 5, RNAV1 and 2 operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for EDTO, RNP 10, RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV, RNP AR, RNAV 5, RNAV 1 and 2 operations."

### **OPERATIONS NOTE**

In order to conduct polar operations, the HDG REF switch must be installed, and one FMC, one CDU, and GPS-L must be operation for dispatch.

On airplanes with dual FMC Source Select Switch selected to operational FMC (BOTH ON L or BOTH ON R) is required to accomplish all Flight Management Computing tasks. Primary means RNP RNAV operations up to a 10 minute duration can be accomplished with a single FMC. Long range navigation requires single FMC with dual MCDUs with Alternate Navigation capability.

---

#### **34-36 Flight Management Computer System (FMCS)**

**34-36-02 -800**

#### **34-36-02-05A Navigation Databases Inoperative**

Interval	Installed	Required	Procedure
A	1	0	(M)

May be inoperative provided:

- a. Operations do not require its use.
  - b. It is not used in a primary navigation system required by CAT.IDE.A.345.
  - c. Alternate procedures are developed and used.
  - d. FDC to update ICAO Flight Plan to notify ATC of the navigation equipment status of the aircraft.
  - e. Aircraft is not operated for RNP AR, RNP 2, RNP APCH LNAV and RNP APCH LNAV/VNAV operations.
  - f. It is repaired within 10 flight days.
- 

### **MAINTENANCE (M)**

For RNP AR, RNP 2, RNP APCH LNAV and RNP APCH LNAV/VNAV operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR, RNP 2, RNP APCH LNAV and RNP APCH LNAV/VNAV operations."

**34-36 Flight Management Computer System (FMCS)****34-36-02 -800****34-36-02-05B Navigation Databases Out-of-Currency**

Interval	Installed	Required	Procedure
<b>A</b>	<b>1</b>	<b>0</b>	<b>(M)</b>

May be out-of-currency for ten calendar days provided:

- a. Current Aeronautical Charts are used to verify navigation fixes prior to dispatch.
  - b. Procedures are established and used to verify status and suitability of navigation facilities used to define route of flight.
  - c. Enroute and approach navigation radios are manually tuned and identified.
  - d. Current navigation data is available from other sources (e.g. flight plan, paper charts as applicable). To cross check waypoint coordinates between the FMC and current navigation data from other sources.
  - e. Aircraft is not operated for RNP AR, RNP 2, RNP APCH LNAV and RNP APCH LNAV/VNAV operations.
- 

**MAINTENANCE (M)**

For RNP AR, RNP 2, RNP APCH LNAV and RNP APCH LNAV/VNAV operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP AR, RNP 2, RNP APCH LNAV and RNP APCH LNAV/VNAV operations."

**OPERATIONS (O)**

1. Verify status and suitability of navigation facilities used to define route of flight using established procedures.
2. Verify navigation fixes prior to dispatch with current aeronautical charts.
3. Manually tune and identify approach navigation radios.



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**34-37            Windshear Warning and Flight Guidance System (Reactive)**  
**34-37A        Alternate Procedures Required**

Interval	Installed	Required	Procedure
B	1	0	(O)

May be inoperative provided alternate procedures are established and used.

NOTE: Operator's alternate procedures should include reviewing windshear avoidance and windshear recovery procedures.

-----

**OPERATIONS (O)**

Flight Crew are to ensure weather condition is suitable for flight and seeks PIREPS and windshear reports or warning prior to take off and approach. If windshear is encountered, perform Windshear Escape Maneuver as per FCOM/QRH recommendations.

**34-37            Windshear Warning and Flight Guidance System (Reactive)**  
**34-37B        Predictive Windshear Warning System Operates Normally**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- Alternate procedures are established and used.
  - Windshear Detection and Avoidance System (Predictive) operates normally.
- 

**OPERATIONS (O)**

Flight Crew are to ensure weather condition is suitable for flight and seeks PIREPS and windshear reports or warning prior to take off and approach. If windshear is encountered, perform Windshear Escape Maneuver as per FCOM/QRH recommendations.



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**34-38 Pitch Limit Indication (PLI)**

Interval	Installed	Required	Procedure
C	2	0	

**34-40 Traffic Collision and Avoidance System (TCAS)  
(Includes STC ST03355AT and ST03362AT)**

Interval	Installed	Required	Procedure
B	1	0	(M) (O)

Except ex-KUL (KLIA), may be inoperative provided:

- System is deactivated and secured.
- Enroute or approach procedures do not require its use.

NOTE: For individual TCAS functions, refer to subsequent MEL sub-items further below.

-----

**MAINTENANCE (M)**

For -800:

- Deactivate and secure the system by opening and collaring the TCAS Circuit Breaker (AMM 34-00-00/901).
- Ensure that OCC is informed about this MEL item.

**OPERATIONS (O)**

- Observe operative indications and advisories. Respond as appropriate.
- If TCAS becomes inoperative while the aircraft is in flight within, or on a flight into Australia Territory, or prior to departure from within Australia, the pilot in command must:
  - If the airplane is in controlled airspace – inform air traffic control of the unserviceability as soon as practicable, or
  - If the airplane is not in controlled airspace – take all reasonable steps to inform air traffic control of the unserviceability before entering controlled airspace.
- If TCAS becomes inoperative during flight to Japan, notify ATC of the situation. ATC does not refuse permission to fly into Fukuoka FIR.
- For operations into Emirates FIR with TCAS inoperative, ensure that the unserviceability is indicated in the flight plan.

---

**34-40**      **Traffic Collision and Avoidance System (TCAS)**  
**(Includes STC ST03355AT and ST03362AT)**

**34-40-01**      **Combined Traffic Alert (TA) and Resolution Advisory (RA) Dual Display**

Interval	Installed	Required	Procedure
C	2	1	

May be inoperative on non-flying pilot side provided:

- a. TA and RA visual display is operative on flying pilot side.
  - b. TA and RA audio function is operative on flying pilot side.
- 

---

**34-40**      **Traffic Collision and Avoidance System (TCAS)**  
**(Includes STC ST03355AT and ST03362AT)**

**34-40-02**      **Resolution Advisory (RA) Display System(s)**

**34-40-02A**      **Inoperative For Non-Flying Pilot**

Interval	Installed	Required	Procedure
C	2	1	

May be inoperative on non-flying pilot side.

-----

---

**34-40**      **Traffic Collision and Avoidance System (TCAS)**  
**(Includes STC ST03355AT and ST03362AT)**

**34-40-02**      **Resolution Advisory (RA) Display System(s)**

**34-40-02B**      **Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided:

- a. Traffic Alert (TA) visual display and audio functions are operative.
  - b. TA only mode is selected by crew.
  - c. Enroute or approach procedures do not require its use.
- 

## **OPERATIONS (O)**

Observe operative indications and advisories. Respond as appropriate.

**34-40 Traffic Collision and Avoidance System (TCAS)**

(Includes STC ST03355AT and ST03362AT)

**34-40-03 Traffic Alert (TA) Display System(s)**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided:

- RA visual display and audio functions are operative.
  - Enroute or approach procedures do not require its use.
- 

**OPERATIONS (O)**

Observe operative indications and advisories. Respond as appropriate.

**34-40 Traffic Collision and Avoidance System (TCAS)**

(Includes STC ST03355AT and ST03362AT)

**34-40-04 Audio Functions**

Interval	Installed	Required	Procedure
B	1	0	

May be inoperative provided enroute or approach procedures do not require use of TCAS.

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**34-42            Radio Magnetic Indicators (RMI)**

**34-42-03       -800**

**34-42-03-01    EFIS/Map**

Interval	Installed	Required	Procedure
C	3	1	

Two may be inoperative provided Captain's RMI or Standby RMI operates normally.

---

---

**34-42            Radio Magnetic Indicators (RMI)**

**34-42-03       -800**

**34-42-03-02    PFD/ND**

Interval	Installed	Required	Procedure
C	1	0	

Standby RMI may be inoperative provided Captain's Inboard DU is connected to Standby Power.

---



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**34-43 Radio Height Alert**

Interval	Installed	Required	Procedure
D	2	0	

**34-45            Global Positioning System (GPS)**  
**34-45A        Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	2	0	(M)

Maybe inoperative provided:

- a. Enroute operations do not require its use.
- b. Aircraft is not operated for RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV and RNP AR operations (where both GPS are required for these operations).
- c. The remaining navigation capability is confirmed to be sufficient for the flight.

NOTE: For all types of RNP/RNAV/PBN navigation capability, GPS is the preferred means of navigation. If GPS is unavailable, DME/DME or VOR/DME can be used to provide RNAV 5 (B-RNAV), RNAV 1 and 2 (P-RNAV) capability in airspace within navaid coverage. However, most of other types of RNP/RNAV/PBN navigation will require GPS.

NOTE 1: If ADS-B system installed, the airplane must also be dispatched using MEL item 34-18-02 for associated ADS-B system.

NOTE 2: If installed, the associated Automatic UTC Update Function(s) will be inoperative. The airplane must also be dispatched using MMEL item 31-01-01.

**MAINTENANCE (M)**

For RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV and RNP AR operations are not allowed:

1. Inform MOC and MOC to advise FDC and OCC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, "Aircraft is not approved for RNP 4, RNP 2, RNP 1, RNP APCH LNAV/VNAV and RNP AR operations."

**OPERATIONS NOTE**

1. In order to conduct polar operations, the HDG REF switch must be installed, and one FMC, one CDU and GPS-L must be operational for dispatch.
2. ADS-B Out parameter for position data will be inoperative when associated GPS system is inoperative. If needed and if two ADS-B are installed and one ADS-B is inoperative, select transponder to the operative side with ADS-B Out function.

**34-45            Global Positioning System (GPS)  
34-45B          Procedures Do Not Require Its Use**

Interval	Installed	Required	Procedure
<b>D</b>	<b>2</b>	<b>0</b>	

May be inoperative provided procedures do not require its use.

Note: For RNP4, RNP 2, RNP1, RNP APCH LNAV/VNAV and RNP AR operations, two GPS systems must be operative

NOTE 1: If ADS-B system installed, the airplane must also be dispatched using MMEL item 34-18-02 for associated ADS-B system.

NOTE 2: If installed, the associated Automatic UTC Update Function(s) will be inoperative. The airplane must also be dispatched using MMEL item 31-01-01.

**OPERATIONS NOTE**

1. In order to conduct polar operations, the HDG REF switch must be installed, and one FMC, one CDU, and GPS-L must be operational for dispatch.
2. ADS-B Out parameter for position data will be inoperative when associated GPS system is inoperative. If needed and if two ADS-B are installed and one ADS-B is inoperative, select transponder to the operative side with ADS-B Out function.

**34-47 ILS Beam Deviation Lights**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided approach minimums do not require their use.

-----

- 
- 34-48 EFIS Control Panel**  
**34-48-03 Decision Height/MINS Selector (-800)**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided approach procedures do not require its use.

-----

- 
- 34-48 EFIS Control Panel**  
**34-48-04 Map Switches (-800)**  
**34-48-04-01 POS**

Interval	Installed	Required	Procedure
C	2	1	

- 
- 
- 34-48 EFIS Control Panel**  
**34-48-04 Map Switches (-800)**  
**34-48-04-02 STA**

Interval	Installed	Required	Procedure
C	2	1	

- 
- 
- 34-48 EFIS Control Panel**  
**34-48-04 Map Switches (-800)**  
**34-48-04-03 ARPT**

Interval	Installed	Required	Procedure
C	2	1	

- 
- 
- 34-48 EFIS Control Panel**  
**34-48-04 Map Switches (-800)**  
**34-48-04-04 DATA**

Interval	Installed	Required	Procedure
C	2	1	

- 
- 34-48 EFIS Control Panel**  
**34-48-04 Map Switches (-800)**  
**34-48-04-05 WPT**

Interval	Installed	Required	Procedure
C	2	1	

---

**34-49 Right IRS DC Power Supply System (-800)**

Interval	Installed	Required	Procedure
B	1	0	(O)

May be inoperative provided:

- a. Remaining IRS Mode Selector Unit lights are not illuminated.
  - b. Autopilot dual channel mode is not used during approach.
- 

**OPERATIONS (O)**

If the left IRS DC FAIL light illuminates during flight, assume that both IRS DC FAIL lights are illuminated. Refer to the Flight Crew Operations Manual - IRS DC FAIL Non-Normal Checklist.

**34-50 MOVED (ILS System (-800)**

Interval	Installed	Required	Procedure

Deleted in Revision 37, relief incorporated into Item 34-17.

-----

**34-53 Automatic Dependent Surveillance - Broadcast (ADS-B) System**

Interval	Installed	Required	Procedure
D	2	0	

May be inoperative provided that other flight monitoring equipment (ACARS or SATCOM) is available and capable to cover the entire area of operation. Refer to FDC for coverage area.

NOTE 1: Any ADS-B Out function that operates normally may be used.

NOTE 2: ADS-B is mandatory in certain airspace. Dispatch with ADS-B inoperative to such areas may required obtaining specific authorization. Consult OCC/FDC for current requirements.

**MAINTENANCE NOTE**

If aircraft is not qualified for ADS-B operations:

1. Inform MOC immediately and MOC to advise OCC and FDC of this restriction on daily basis.
2. In AMOS Workorder (APN 1418) TRANSFER wizard against ACTION TEXT column add the phrase, " Aircraft is not approved for ADS-B operations."

**OPERATIONS (O)**

1. If ADS-B not available, avoid ADS-B routing.

**34-53 DELETED (Automatic Dependent Surveillance - Broadcast (ADS-B) System)**
**34-53-01 Cockpit Display and Traffic Information (CDTI)**

Interval	Installed	Required	Procedure

Deleted due to not installed.

**34-53 DELETED (Automatic Dependent Surveillance - Broadcast (ADS-B) System)**
**34-53-02 CDTI Control Panel**

Interval	Installed	Required	Procedure

Deleted due to not installed.

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**34-53            DELETED (Automatic Dependent Surveillance - Broadcast  
(ADS-B) System)****34-53-03        Data Link Transmitter(s)**

Interval	Installed	Required	Procedure

Deleted due to not installed.

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**34-53            DELETED (Automatic Dependent Surveillance - Broadcast  
(ADS-B) System)****34-53-04        Data Link Receivers**

Interval	Installed	Required	Procedure

Deleted due to not installed.

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**34-53            DELETED (Automatic Dependent Surveillance - Broadcast  
(ADS-B) System)****34-53-05        ADS-B Applications**

Interval	Installed	Required	Procedure
D	-	0	

Deleted due to not installed.

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- 
- 34-54 Integrated Standby Systems**  
**34-54-01 Integrated Standby Flight Display (ISFD)**  
**34-54-01-01 Attitude Display**

Interval	Installed	Required	Procedure
B	1	0	

May be inoperative provided:

- a. Operations are conducted in Day VMC only.
  - b. Operations are not conducted into known or forecast over-the-top conditions.
- 

- 
- 34-54 Integrated Standby Systems**  
**34-54-01 Integrated Standby Flight Display (ISFD)**  
**34-54-01-02 ILS Indication**

Interval	Installed	Required	Procedure
D	1	0	

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- 
- 34-54 Integrated Standby Systems**  
**34-54-01 Integrated Standby Flight Display (ISFD)**  
**34-54-01-03 Heading Display**

Interval	Installed	Required	Procedure
C	1	0	

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- 
- 34-54 Integrated Standby Systems**  
**34-54-01 Integrated Standby Flight Display (ISFD)**  
**34-54-01-04 Metric Altimeter Display**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided operations do not require its use.

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- 
- 34-54 Integrated Standby Systems**  
**34-54-05 Integrated Standby Flight Display (ISFD)**  
**34-54-01-05 Dedicated Battery**

Interval	Installed	Required	Procedure
C	1	0	

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**34-55            Vertical Situation Display (VSD) System (-800)**
**34-55A        Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	1	0	(O)

Except for operation in-to KTM, may be inoperative provided alternate procedures are established and used.

Note: VSD is optional equipment only installed on 9M-MXseries, 9M-MLF onwards, 9M-MSseries and 9M-FFF. Aircraft without VSD are 9M-MLD thru MLE.

**OPERATIONS (O)**

VSD is a situational awareness enhancement tool. When unserviceable, use enroute, area and approach charts for reference in enhancing situational and terrain awareness.

**34-55            Vertical Situation Display (VSD) System (-800)**
**34-55B        Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

---

**34-56            Global Navigation Satellite Landing System (GLS) (-800)**

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Interval	Installed	Required	Procedure
D	2	0	

May be inoperative provided approach minimums do not require its use.

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**Section 2**  
**Table of Contents****ATA 35**  
**Oxygen**

- 35-01 Crew Oxygen System**
- 35-02 Passenger Service Units (PSUs)**
- 35-02-01 Automatic Presentation
- 35-02-02 Door Latches
- 35-03 Oxygen Pressure Indicators**
- 35-03-01 Flight Deck Crew Oxygen Indicator
- 35-03-02 External Service Panel Crew Oxygen Indicator
- 35-03-04 Flight Deck Crew/Passenger Oxygen Indicator (-800)
- 35-03-05 Overpressure Discharge Indication Disk
- 35-04 Portable Oxygen Dispensing Units (Bottle and Mask)**
- 35-04-02 -800**
- 35-04-03 Infant Oxygen Mask**
- 35-05 Passenger Oxygen System**
- 35-05A *Passenger Operations*
- 35-05C *Operations at or below 10,000 feet MSL*
- 35-06 Portable Protective Breathing Equipment (PBE)**
- 35-06-01 Cockpit
- 35-06-02 Cabin
- 35-06-02 -02 -800
- 35-06-03 MOVED [Infant Oxygen Mask]
- 35-07 External Service Panel, Oxygen Fill Station**

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**35-01 Crew Oxygen System**
**35-01A System Inoperative**

Interval	Installed	Required	Procedure
-	1	1	

Must be operative.

**35-01 Crew Oxygen System**
**35-01B Low Pressure**

Interval	Installed	Required	Procedure
B	1	1	(M)

Pressure may be below 1000 PSI provided that the cylinder pressure is above 3-men crew minimum dispatch pressure (refer table below).

NOTE: For all B737-800, refer Table 1 (extracted from FPPM) shown below for 114/115 cubic ft cylinder minimum dispatch pressure.

BOTTLE TEMPERATURE		NUMBER OF CREW USING OXYGEN		
deg C	deg F	2	3	4
-10	14	430	600	770
-5	23	440	610	785
0	32	445	620	800
5	41	455	635	815
10	50	460	645	830
15	59	470	655	840
20	68	480	670	860
25	77	485	680	870
30	86	495	690	885
35	95	505	700	900
40	104	510	715	915
45	113	520	725	930
50	122	530	735	945

TABLE 1. MINIMUM DISPATCH PRESSURE (PSI)  
FOR 114/115 CUBIC FEET CYLINDER  
(EXTRACTED FROM FPPM)

**MAINTENANCE (M)**

For aircrafts without an operative External Service Panel/Oxygen Fill station:  
 Crew oxygen can only be serviced by replacing the 76/114/115 cubic ft oxygen cylinder with a cylinder that meets the minimum dispatch pressure.

NOTE: FFF, MLE – MLJ does not have External Service Panel/Oxygen Fill station

**35-02 Passenger Service Units (PSUs)**

Interval	Installed	Required	Procedure
B	56	0	(M)

May be inoperative provided:

- a. Associated seats are blocked and placarded to prevent occupancy.
- b. Units operate normally for all usable lavatory and flight attendant locations.

**MAINTENANCE (M)**

1. Close the inoperative oxygen mask door and secure it using adhesive tape.
2. Block the seats with the inoperative units to prevent passenger use.
3. If inoperative unit is in a lavatory, secure the associated lavatory door closed to prevent passenger use.
4. **Advise MOC, FDC and OCC. Flight planning may be affected.**

**35-02 Passenger Service Units (PSUs)****35-02-01 Automatic Presentation**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [P]

May be inoperative provided:

- a. Alternate deployment system is verified to operate normally.
- b. Airplane remains at or below FL 300.

**MAINTENANCE (M)**

1. Check passenger oxygen manual deploy system per AMM 35-21-00, A/T (bottle system) or 35-22-00, A/T (chemical oxygen).
2. **Advise MOC, FDC and OCC, flight altitude is limited to FL 300.**

**OPERATIONS (O)**

1. Be prepared to deploy passenger masks manually using the PASS OXYGEN Switch or Actuation/Reset Handle (if installed).
2. Flight altitude is limited to FL 300.

**35-02 Passenger Service Units (PSUs)****35-02-02 Door Latches**

Interval	Installed	Required	Procedure
B	56	0	(M) [P]

Automatic opening feature of door latch(es) may be inoperative unlatched, and taped closed provided:

- a. PSU oxygen system operates normally.
- b. Flight remains at or below FL 250.
- c. Passenger(s) occupying seat(s) with inoperative door latch(es) are briefed on oxygen mask procedure.

**MAINTENANCE (M)****For -800:**

Check masks in affected PSU and tape door closed (AMM 35-00-00/901).

**For All Models:**

1. For airplanes with bottle passenger oxygen:
  - A. Tape all oxygen mask compartment doors closed.
  - B. Pressurize system using an external source connected to the low pressure manifold via the test/vent connection or by switching the airplane passenger oxygen system on.
  - C. Check masks in the affected PSU for oxygen flow.
  - D. Replace valve actuating pins, pack masks in compartment, and tape door closed. Fashion the tape so that a non adhesive "handle", approximately 4 inches long, is left pendant. This "handle" will be used in case of need by the passenger to strip the securing tape down, thus allowing the door to fall open.
  - E. Disconnect oxygen source or reset aircraft system by moving PASS OXY switch to the RESET position.
  - F. Remove tape from all operative oxygen mask compartment doors.
2. For airplanes with chemical passenger oxygen:
  - A. Verify that related generator has not been expended. Color band will be black if generator has been expended and generator must be replaced.
  - B. Tape door closed. Fashion the tape such that a non adhesive "handle", approximately 4 inches long, is left pendant. This "handle" will be used in case of need by the passenger to strip the securing tape down, thus allowing the door to fall open.
3. **Advise MOC, FDC and OCC, flight altitude is limited to FL 250.**

---

**35-03            Oxygen Pressure Indicators**  
**35-03-01        Flight Deck Crew Oxygen Indicator**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided an alternate procedure is used to verify that oxygen supply is above minimum requirements for dispatch.

---

**MAINTENANCE (M)****For -800:**

Check oxygen cylinder pressure indicator and ensure oxygen supply is above minimum required for flight (AMM 35-00-00-901).

**For All Models:**

1. Check crew oxygen cylinder pressure indicator prior to each takeoff.
2. Ensure supply is above minimum required for flight. See Boeing Flight Planning and Performance Manual, Flight Planning Section, or refer to MEL 35-01B, for minimum dispatch bottle pressure.

**OPERATIONS (O)**

Verify the current oxygen cylinder pressure prior to each flight with maintenance crew while ensuring that the minimum required by Flight Planning and Performance Manual is complied or refer MEL 35-01B, for minimum dispatch bottle pressure

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**35-03            Oxygen Pressure Indicators**  
**35-03-02        External Service Panel Crew Oxygen Indicator**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided an alternate procedure is used to verify that oxygen supply is above minimum requirements for dispatch.

---

**MAINTENANCE (M)****For -800:**

Check oxygen cylinder pressure indicator and ensure oxygen supply is above minimum required for flight (AMM 35-00-00-901).

**For All Models:**

1. Check crew oxygen cylinder pressure indicator prior to each takeoff.
2. Ensure supply is above minimum required for flight. See Boeing Flight Planning and Performance Manual, Flight Planning Section, or refer to MEL 35-01B, for minimum dispatch bottle pressure.

**OPERATIONS (O)**

Flight Crew is required to check the oxygen pressure from the Flight Crew Oxygen indicator while ensuring that the minimum required by Flight Planning and Performance Manual is complied or refer MEL 35-01B, for minimum dispatch bottle pressure.

---

**35-03           Oxygen Pressure Indicators**
**35-03-04       Flight Deck Crew/Passenger Oxygen Indicator (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided an alternate procedure is used to verify that oxygen supply is above minimum requirements for dispatch.

- - - - -

**MAINTENANCE (M)**

Check oxygen cylinder pressure indicator and ensure oxygen supply is above minimum required for flight (AMM 35-00-00/901).

1. Check oxygen cylinder pressure indicator prior to each takeoff.
2. Ensure supply is above minimum required for flight. See Boeing Flight Planning and Performance Manual, Flight Planning Section, or refer **MEL 35-01B** for minimum dispatch bottle pressure.

---

**35-03           Oxygen Pressure Indicators**
**35-03-05       Overpressure Discharge Indication Disk**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be damaged or missing.

- - - - -

**OPERATIONS (O)**

When dispatching with the overpressure discharge indication disk damaged or missing, verify that oxygen pressure is adequate for dispatch by observing system pressure using the flight deck crew and passenger (if installed) oxygen pressure indicator on the aft overhead panel or using the pressure indicator on the external service panel (if installed) or oxygen cylinder.

**35-04 Portable Oxygen Dispensing Units (Bottle and Mask)**  
**35-04-02 -800**

Interval	Installed	Required	Procedure
C	Refer Note	4	(M)

NOTE 1: Refer to LEEL for number of portable oxygen dispensing units installed.

NOTE 2: Oxygen masks installed in MAB fleets are suitable for all ages.

Except ex-KUL, may be inoperative or missing provided:

- Minimum number of bottles and masks are sufficient for the number of passengers on board as per table below.

Minimum number of Serviceable Units	Number of passengers allowed
4	151 to 200
3	101 to 150
2	0 to 100

- Ensure serviceable unit are distributed evenly throughout the airplane.
- Bottles not properly serviced are replaced, removed or serviced at the next available maintenance facility.
- Placard indicating location for the associated inoperative bottle is removed or obscured.

**MAINTENANCE (M)**

- Advise MOC on the number of inoperative or missing portable oxygen bottle to be replaced.
- Ensure required distribution of serviceable units is maintained throughout the airplane.
- Until the inoperative unit(s) can be serviced or removed from the airplane at the next available maintenance base, stow inoperative unit(s) in a location where they will not be used.
- If units at a specific storage location are inoperative or missing, remove or obscure the associated location placarding for the affected units.
- Raise NTC to inform flight crew.

**35-04 Portable Oxygen Dispensing Units (Bottle and Mask)**  
**35-04-03 Infant Oxygen Mask**

Interval	Installed	Required	Procedure

Oxygen masks installed in MAB fleets are suitable for all ages. Refer MEL Item 35-04-02 for dispatch.



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MINIMUM EQUIPMENT LIST

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Oxygen

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**35-05 Passenger Oxygen System  
35-05A Passenger Operations**

Interval	Installed	Required	Procedure
B	1	0	(M) (O) [P]

May be inoperative provided:

- a. Flight is not conducted where minimum enroute altitude is above 14,000 feet MSL.
  - b. Both air conditioning packs operate normally.
  - c. Remaining components of pressurization system operate normally.
  - d. Airplane remains at or below FL 250.
  - e. Portable oxygen units are provided for 10% of passengers.
  - f. Passengers are appropriately briefed.
- 

**MAINTENANCE (M)**

1. Ensure that there is portable oxygen units for at least 10 percent of the passengers.
2. **Advise MOC, FDC and OCC. Flight planning may be affected.**

**OPERATIONS (O)**

1. Plan flight over route with minimum enroute altitudes (MEA) equal to or lower than 14,000 feet.
2. Maximum flight altitude shall not exceed FL 250.
3. Prior to flight, the pilot in command shall brief cabin crew on the alternate emergency procedures that will be used.

**35-05 Passenger Oxygen System  
35-05C Operations at or below 10,000 feet MSL**

Interval	Installed	Required	Procedure
B	1	0	(M) [P]

May be inoperative provided flight is conducted at or below 10,000 feet MSL

---

**MAINTENANCE (M)**

1. **Advise MOC, FDC and OCC, flight altitude is limited to 10,000 feet MSL.**

**35-06 Portable Protective Breathing Equipment (PBE)**
**35-06-01 Cockpit**

Interval	Installed	Required	Procedure
	1	1	

Must be serviceable

**35-06 Portable Protective Breathing Equipment (PBE)**
**35-06-02 Cabin**
**35-06-02-02 -800**

Interval	Installed	Required	Procedure
C	6	5	(M)

One may be inoperative.

NOTE: Inoperative PBE units removed from a certified location, or removed from the aircraft, are subjected to dangerous goods regulations.

**MAINTENANCE (M)**

1. Ensure that at least one serviceable PBE is positioned in certified locations nearest to each cabin crew on duty. Ensure that the serviceable PBEs are near to a serviceable fire extinguisher.
2. Until it can be removed from the airplane at the next available maintenance base, obscure locator placards for the inoperative units.

**35-06 Portable Protective Breathing Equipment (PBE)**
**35-06-03 MOVED [Infant Oxygen Mask]**

Interval	Installed	Required	Procedure

Moved to MEL 35-04-03.

**35-07            External Service Panel, Oxygen Fill Station**  
**[Not applicable to FFF, MLE – MLJ]**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative provided leak-tight integrity of oxygen supply system is not affected.

**MAINTENANCE (M)****For -800:**

To verify that the leak-tight integrity of the oxygen supply system is not affected:  
(AMM 35-00-00-/901).

**For All Models:**

To verify that the leak-tight integrity of the oxygen supply system is not affected:

1. Visually check high-pressure tubing to ensure that there are no open connections.
2. Ensure that crew and passenger oxygen system pressures (as applicable) indicated on applicable flight deck or cylinder pressure gauge(s) meet dispatch requirement pressures.
3. Monitor crew and passenger oxygen system pressure (as applicable) for 15 minutes to ensure there are no detectable leaks.

**Section 2**  
**Table of Contents****ATA 36**  
**Pneumatics**

- 36-01      Manifold Isolation Shutoff Valve**
  - 36-01-03 -800
- 36-02      Ground Pneumatic Connector Check Valve**
  - 36-02A     Valve Inoperative Open
  - 36-02B     Valve Inoperative Closed
- 36-03      Precooler Control Valves**
  - 36-03-02 -800
    - 36-03-02A Inoperative in Any Position
    - 36-03-02B Inoperative in Full Open Position
- 36-04      Pneumatic Pressure Indication Systems**
- 36-05      Engine Bleed Air Shutoff Valves (PRSOV)**
  - 36-05-02 -800
- 36-06      Dual Bleed Light System**
- 36-08      Engine Bleed Trip Off Lights**
- 36-09      High Stage Valves**

Intentionally Blank

**36-01            Manifold Isolation Shutoff Valve  
36-01-03        -800**

Interval	Installed	Required	Procedure
C	1	0	(M)

Except for EDTO operations beyond 120 minutes, may be inoperative provided:

- a. Valve remains closed except for engine start.
  - b. Airplane is not operated in known or forecast icing conditions.
- 

**MAINTENANCE (M)**

Deactivate the bleed air isolation valve (AMM 36-00-00/901).

1. Position both engine BLEED switches to OFF.
2. Position APU Bleed Air switch to OFF.
3. Position both PACK switches to OFF.
4. Open and collar the P6-4 panel circuit breaker AIR CONDITIONING BLEED AIR VALVE ISOLATION.
4. Remove, cap and stow the connector from bleed air isolation valve.

NOTE: It may be necessary to temporarily remove the air conditioning duct segment located in front of keel beam access hole.

5. Manually move valve to the closed position using the manual override handle.

NOTE: The isolation valve must be manually opened for engine start and then manually closed after the engines are started.

**36-02            Ground Pneumatic Connector Check Valve  
36-02A        Valve Inoperative Open**

Interval	Installed	Required	Procedure
<b>B</b>	<b>1</b>	<b>0</b>	<b>(M) (O) [P]</b>

Except for EDTO operations beyond 120 minutes, may be inoperative open provided:

- a. Right pneumatic manifold remains depressurized after starting right engine.
- b. Airplane is not operated in known or forecast icing conditions.
- c. Altitude remains at or below FL 250.

**MAINTENANCE (M)***For -800:*

Ground Pneumatic Connector Check valve inoperative open (AMM

36-00-00/901):

1. Use a ground pneumatic source for starting the right engine.
2. Prior to removing the ground pneumatic source, verify with flight crew that the right pneumatic duct is depressurized (right engine bleed OFF and isolation valve CLOSE).
3. Ground pneumatic source will be required at down line stations if right engine is shutdown.
4. Advise MOC, FDC and OCC, flight altitude is limited to FL 250.

**OPERATIONS (O)***For -800:*

NOTE: When dispatching with a single engine bleed on for takeoff (airplane pressurized, V1(MCG) should be determined based on AC packs OFF.

Takeoff performance should be based on packs AUTO.

1. Following engine start, depressurize the right pneumatic duct prior to removing the ground pneumatic source. Operate airplane with:
  - Right bleed OFF
  - Right pack OFF
  - Isolation valve CLOSE
2. Operate the left pack using the left engine bleed or APU bleed with isolation valve CLOSE.

NOTE 1: At altitudes 17,000 feet and below, increased airflow will occur when flaps are extended (takeoff and landing) and the APU is used instead of engine bleed to supply bleed air to the operating pack. Refer to Boeing Operations Manual, NO ENGINE BLEED TAKEOFF AND LANDING Supplementary Procedure.

NOTE 2: With the PACK switch in AUTO, the pack will operate in the high flow mode when the APU is used as the bleed source.

3. Maximum altitude is FL 250.



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Pneumatics

**36-02    Ground Pneumatic Connector Check Valve**

**36-02B    Valve Inoperative Closed**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative closed.

NOTE: With the ground pneumatic connector check valve inoperative closed, engines cannot be started from ground source. Use APU as air source for starting engines.

**36-03      Precooler Control Valves****36-03-02    -800****36-03-02A   Inoperative in Any Position**

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>0</b>	<b>(O) (M) [P]</b>

Except for EDTO operations beyond 120 minutes, may be inoperative in any position provided:

- a. Associated engine bleed shutoff valve remains closed.
- b. Airplane is not operated in known or forecast icing conditions.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that performance is affected.

**OPERATIONS (O)**

NOTE 1: Use of the APU bleed air is limited to 17,000 feet. One air conditioning pack will be unusable when dispatching with: the left engine bleed unusable and flight altitude greater than 17,000 feet, the right engine bleed unusable, or both engine bleeds unusable.

NOTE 2: When dispatching with a single engine bleed on for takeoff (airplane pressurized), V1(MCG) should be determined based on AC packs OFF. Takeoff performance should be based on AC packs AUTO.

1. Do not dispatch into known or forecast icing conditions.
2. Position the associated engine BLEED switch to OFF.
3. For left engine bleed unusable:
  - A. At altitudes 17,000 feet and below, operate the left pack using the APU bleed air, the right pack using the right engine bleed and the isolation valve CLOSE.
  - B. At altitudes above 17,000 feet, operate with the APU bleed air OFF.
    - 1) Limit altitude to FL 250.
    - 2) Operate the left pack using the right engine bleed, the right pack OFF and isolation valve OPEN.
4. For right engine bleed unusable:
  - A. Limit altitude to FL 250.
  - B. Operate the left pack using the left engine bleed, right pack OFF, and isolation valve CLOSE.

NOTE: At altitudes 17,000 feet and below, increased air flow will occur when flaps are extended (takeoff and landing) and the APU is used instead of engine bleed to supply bleed air to the operating pack. Refer to Boeing Operations Manual, NO ENGINE BLEED TAKEOFF AND LANDING PROCEDURE.
5. For both engine bleeds unusable:
  - A. Limit altitude to 17,000 feet.
  - B. Operate the left pack using APU bleed and isolation valve CLOSE. Refer to Boeing Operations Manual, NO ENGINE BLEED TAKEOFF AND LANDING PROCEDURE.

- 36-03              Precooler Control Valves**  
**36-03-02          -800**  
**36-03-02B        Inoperative in Full Open Position**

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>0</b>	<b>(O) (M) [P]</b>

Except for EDTO operations beyond 120 minutes, may be inoperative in full open position provided:

- a. Airplane is not operated in known or forecast icing conditions.
- b. Appropriate performance adjustments are applied.

#### **MAINTENANCE (M)**

##### **For -800**

Deactivate precooler control valve in full open position (AMM 36-00-00/901).

For Precooler Control Valve P/N 3289562-5/-6/-7:

1. Set each engine start lever in the CUTOFF position.
2. Remove pressure from the pneumatic system (AMM 36-00-00/201).
3. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
4. Deactivate the associated thrust reverser (AMM 78-31-00/201).
5. Gain access to the precooler control valve by opening the appropriate thrust reverser (AMM 78-31-00/201).
6. Remove the supply pressure sense line between the precooler control valve, bleed air regulator, and intersection manifold duct (AMM 36-12-02/401).
7. On the precooler control valve supply pressure port, remove tubing fitting union J522P53 and replace with undrilled tubing fitting union C36002-1.
8. Reinstall the supply pressure sense line between the precooler control valve, bleed air regulator, and intersection manifold duct (AMM 36-12-02/401).
9. Supply pressure to pneumatic system using supply pressure upstream of the PRSOV and perform a leak check of all distributed tubing fittings using snoop leak detector or equivalent soap solution (AMM 36-00-00/201).
10. Verify that the visual position indicator on the precooler control valve indicates that the valve is in the full open position.
11. Remove pressure from the pneumatic system (AMM 36-00-00/201).
12. Close thrust reverser (AMM 78-31-00/201).
13. Activate thrust reverser (AMM 78-31-00/201).
14. Activate leading edge slats (AMM 27-81-00/201).
15. Advise MOC, FDC and OCC that performance is affected.

For Precooler Control valve P/N 63292146-1:

1. Set each engine start lever in the CUTOFF position.
2. Remove pressure from the pneumatic system (AMM 36-00-00/201).
3. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
4. Deactivate the associated thrust reverser (AMM 78-31-00/201).
5. Gain access to the precooler control valve by opening the appropriate thrust reverser (AMM 78-31-00/201).

6. Remove and reinstall pneumatic lock plug into engaged/locked position.  
Ensure plug bottoms in bore. Apply 95-105 in-lb of torque on the pneumatic lock hex.
7. Supply Pressure Upstream of the PRSOV and verify that the valve remain in the full open position as evidenced by visual inspection.
8. Remove pressure from pneumatic system (AMM 36-00-00/201).
9. Close thrust reverser (AMM 78-31-00/201).
10. Activate thrust reverser (AMM 78-31-00/201).
11. Activate leading edge slats (AMM 27-81-00/201).

## **OPERATIONS (O)**

### **For -800**

Performance adjustments.

1. Takeoff and landing performance limit weights are reduced by 1120 lb (508 kg) for associated precooler control valve.
2. Enroute climb limit weight is reduced by 1,530 lb (694 kg) for associated precooler control valve.
3. Apply a fuel mileage decrement of 0.4% for associated engine.

**36-04 Pneumatic Pressure Indication Systems**

Interval	Installed	Required	Procedure
C	2	0	(O)

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

-----

**OPERATIONS (O)**

1. The Flight Crew normally uses the Pneumatic Pressure Indication System to verify the following during engine starts:
  - A. Minimum recommended pneumatic pressure for engine start.
  - B. Closure of the engine start valve if START VALVE OPEN lights are not installed.
2. With an inoperative Pneumatic Pressure Indication System, confirmation of minimum recommended pneumatic pressure is not required for engine start.
3. For verification of start valve closure:
  - A. On airplanes with START VALVE OPEN lights installed or equipped with the START VALVE OPEN indication on the Display Unit (DU), the Flight Crew can verify that the engine start valve has closed by noting that the START VALVE OPEN lights have extinguished.
  - B. On airplanes without START VALVE OPEN lights installed, the APU must be used for engine starts. The Flight Crew should monitor the APU EGT and note a pronounced drop at starter cutout.

**36-05            Engine Bleed Air Shutoff Valves (PRSOV)**  
**36-05-02        -800**

Interval	Installed	Required	Procedure
<b>B</b>	<b>2</b>	<b>0</b>	<b>(M) (O) [E] [P]</b>

Except for EDTO operations beyond 120 minutes, may be inoperative provided:

- a. Valve is secured closed before engine start.
  - b. Airplane is not operated in known or forecast icing conditions.
- 

**MAINTENANCE (M)***For -800:*

Lock the associated engine bleed air valve in the closed position (AMM 36-00-00/901).

*For All Models:*

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser (AMM 78-31-00/201).
3. Gain access to the engine bleed air valve by opening the appropriate fan cowl panel (AMM 71-11-02/201) and thrust reverser (AMM 78-31-00/201).
4. Lock the engine bleed air valve in the CLOSED position.
  - A. Turn the override nut to align the position indicator with the CLOSED position.
  - B. Loosen the lock screw/knob bolt and push in locking knob to lock valve in closed position.
  - C. Retighten lock screw/knob bolt.
5. Close fan cowl panel (AMM 71-11-02/201) and thrust reverser (AMM 78-31-00/201).
6. Activate the thrust reverser (AMM 78-31-00/201).
7. Activate the leading edge slats (AMM 27-81-00/201).
8. Advise MOC, FDC and OCC that performance is affected.

**OPERATIONS (O)**

NOTE 1: Use of the APU bleed air is limited to 17,000 feet. One air conditioning pack will be unusable when dispatching with: (1) the right engine bleed inoperative, (2) the left engine bleed inoperative and flight altitude greater than 17,000 feet, or (3) both engine bleeds inoperative.

NOTE 2: When dispatching with a single engine bleed on for takeoff (airplane pressurized), V1(MCG) should be determined based on AC packs OFF. Takeoff performance should be based on AC packs AUTO.

1. Do not dispatch into known or forecast icing conditions.
2. Associated engine bleed switch is selected to the OFF position.

3. For left engine bleed inoperative:
  - A. At altitudes 17,000 feet and below, operate the left pack using the APU bleed air, the right pack using the right engine bleed and the isolation valve CLOSE.
  - B. At altitudes above 17,000 feet, operate with the APU bleed air OFF.
    - 1) Limit altitude to FL 250.
    - 2) Operate the left pack using the right engine bleed, the right pack OFF and isolation valve OPEN.
4. For right engine bleed inoperative:
  - A. Limit altitude to FL 250.
  - B. Operate the left pack using the left engine bleed, right pack OFF, and isolation valve CLOSE.

NOTE: At altitudes 17,000 feet and below, increased air flow will occur when flaps are extended (takeoff and landing) and the APU is used instead of engine bleed to supply bleed air to the operating pack. Refer to Boeing Operations Manual, NO ENGINE BLEED TAKEOFF AND LANDING PROCEDURE.
5. For both engine bleeds inoperative:
  - A. Limit altitude to 17,000 feet.
  - B. Operate the left pack using APU bleed and isolation valve CLOSE. Refer to Boeing Operations Manual, NO ENGINE BLEED TAKEOFF AND LANDING PROCEDURE.

**36-06      Dual Bleed Light System**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- a. APU bleed air is not used in flight.
- b. APU bleed valve is verified closed before each departure.

NOTE: Please refer item 49-07, APU Bleed Air System for item dispatchability.

-----

**OPERATIONS (O)**

Prior to takeoff verify that the APU bleed valve is closed:

1. Set the manifold isolation valve switch to CLOSE position.
2. With APU running, set the APU BLEED air switch to OFF.
3. Set the left air conditioning PACK and the left engine BLEED air switches to OFF.
4. Confirm the left pneumatic duct pressure decreases to 10 PSI or less.
5. Set bleed and air conditioning configuration as required for takeoff.

**36-08 Engine Bleed Trip Off Lights**

Interval	Installed	Required	Procedure
B	2	0	(M) (O) [P]

Except for EDTO operations beyond 120 minutes, may be inoperative provided:

- a. Associated engine bleed is not used except for engine start.
- b. Airplane is not operated in known or forecast icing conditions.

**MAINTENANCE (M)**

1. Advise MOC, FDC and OCC that performance is affected.

**OPERATIONS (O)**

NOTE 1: Use of the APU bleed air is limited to 17,000 feet. One air conditioning pack will be unusable when dispatching with; (1) the right engine bleed unusable, (2) the left engine bleed unusable and flight altitude greater than 17,000 feet, or (3) both engine bleeds unusable.

NOTE 2: When dispatching with a single engine bleed on for takeoff (airplane pressurized), V1(MCG) should be determined based on AC packs OFF. Takeoff performance should be based on packs AUTO.

1. Do not dispatch into known or forecast icing conditions.
2. After engine start, position the associated engine BLEED switch to OFF.
3. For left engine bleed unusable:

- A. At altitudes 17,000 feet and below, operate the left pack using the APU bleed air, the right pack using the right engine bleed and the isolation valve CLOSE.
- B. At altitudes above 17,000 feet, operate with the APU bleed air OFF.
  - 1) Limit altitude to FL 250.
  - 2) Operate the left pack using the right engine bleed, the right pack OFF and isolation valve OPEN.

4. For right engine bleed unusable:
  - A. Limit altitude to FL 250.
  - B. Operate the left pack using the left engine bleed, right pack OFF, and isolation valve CLOSE.

NOTE: At altitudes 17,000 feet and below, increased air flow will occur when flaps are extended (takeoff and landing) and the APU is used instead of engine bleed to supply bleed air to the operating pack. Refer to Boeing Operations Manual, NO ENGINE BLEED TAKEOFF AND LANDING PROCEDURE.

5. For both engine bleeds unusable:
  - A. Limit altitude to 17,000 feet.
  - B. Operate the left pack using APU bleed and isolation valve CLOSE. Refer to Boeing Operations Manual, NO ENGINE BLEED TAKEOFF AND LANDING PROCEDURE.

**36-09      High Stage Valves**

Interval	Installed	Required	Procedure
C	2	1	(M)

One may be inoperative locked closed provided a minimum of 60% N1 is maintained on associated engine during flight in icing conditions.

- - - - -

**MAINTENANCE (M)****For -800:**

Lock the high stage valve closed (AMM 36-00-00/901).

NOTE: Only one high stage valve may be locked in the closed position for dispatch. Dispatch with the opposite high stage valve locked closed under MEL item 30-03 is not allowed.

**For All Models:**

1. Set each engine start lever in the CUTOFF position.
2. Remove pressure from the pneumatic system.
3. Open fan cowl and thrust reverser (AMM 78-31-00).
4. Manually lock closed the high stage valve.
  - A. Manually wrench the high stage valve to the CLOSE position.
  - B. Loosen the position indicator screw.
  - C. Slide the lock into the recess in the cover plate.
  - D. Tighten the position indicator screw.
5. Close fan cowl and thrust reverser (AMM 78-31-00).

**OPERATION NOTE**

Apply the following fuel mileage decrement to account for flight in icing conditions which require a minimum of 60% N1 on the associated engine:

1. 2.0% for trip distances less than or equal to 1000 nautical miles.
2. 1.0% for trip distances greater than 1000 nautical miles.

**Section 2**  
**Table of Contents****ATA 38**  
**Water / Waste**

<b>38-01</b>	<b>Potable Water Systems</b>	
38-01A	<i>Components Deactivated or Isolated</i>	
38-01B	<i>System Drained</i>	
<b>38-02</b>	<b>Lavatory Waste Systems (Including Wheelchair Accessible Lavatories)</b>	
38-02A	<i>Components Deactivated or Isolated</i>	
38-02B	<i>Lavatory Not Used</i>	
38-02-01	Waste Blower System (-800)	

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**38-01            Potable Water Systems**
**38-01A        Components Deactivated or Isolated**

Interval	Installed	Required	Procedure
C	1	-	(M)

Note: The potable water system consist of passenger water system, water heating system and water quantity indication system.

Individual components may be inoperative provided:

- a. Associated components are deactivated or isolated.
- b. Associated system components are verified not to have leaks.

NOTE: Any portion of system which operates normally may be used.

**MAINTENANCE (M)**

1. Deactivate or isolate inoperative components.
2. Verify associated system components do not have leaks.

NOTE: Due to the wide variety of galley, lavatory and drinking fountain installations and various component failure possibilities, operators must develop procedures tailored to their specific installations.

**38-01            Potable Water Systems**
**38-01B        System Drained**

Interval	Installed	Required	Procedure
C	1	-	(M)

May be inoperative provided:

- a. System is drained.
- b. Procedures are established to ensure that system is not serviced.

**MAINTENANCE (M)**

For -800:

2. Drain potable water system (AMM 12-14-01/301).
3. Establish procedures to ensure the potable water system is not serviced.

**OPERATIONS NOTE**

In the event that the potable water system is inoperative and drained. Ensure there is no water from galleys or lavatories tap.

**38-02            Lavatory Waste Systems (Including Wheelchair****Accessible Lavatories)****38-02A        Components Deactivated or Isolated**

Interval	Installed	Required	Procedure
C	Refer Note	Refer Note	(M)

Note: Lavatory Waste Systems consist of a Gray Water System, Vacuum Waste System and a Waste Tank Quantity Indication System

Individual components may be inoperative provided:

- a. Associated components are deactivated or isolated.
- b. Associated system components are verified not to have leaks.

NOTE1: Any portion of system which operates normally may be used.

NOTE2: Refer MEL item 38-02-01 for -800 waste blower system.

NOTE3: Also refer MEL item 25-40 for forward lavatory.

**MAINTENANCE (M)**

1. Deactivate or isolate inoperative components.
2. Verify associated system components do not have leaks.

NOTE: Due to the wide variety of lavatory installations and various component failure possibilities, operators must develop procedures tailored to their specific installations.

**38-02            Lavatory Waste Systems (Including Wheelchair****Accessible Lavatories)****38-02B        Lavatory Not Used**

Interval	Installed	Required	Procedure
C	3	Refer Note	(M)

Associated lavatory system(s) may be inoperative provided:

- a. Associated components are deactivated or isolated to prevent leaks.
- b. Forward lavatory is not affected.
- c. Associated lavatory door(s) is secured closed and placarded "INOPERATIVE - DO NOT ENTER".

NOTE1: These provisions are not intended to prohibit inspections by crewmembers.

NOTE2: Refer MEL item 38-02-01 for -800 waste blower system.

NOTE3: Also refer MEL item 25-40 for forward lavatory.

**MAINTENANCE (M)**

1. Deactivate or isolate inoperative components.
2. Verify associated system components do not have leaks.  
NOTE: Due to the wide variety of lavatory installations and various component failure possibilities, operators must develop procedures tailored to their specific installations.
3. Secure the associated lavatory door closed.

**38-02            Lavatory Waste Systems (Including Wheelchair Accessible Lavatories)**
**38-02-01        Waste Blower System (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) (O)

May be inoperative provided:

- a. Associated components are deactivated or isolated.
  - b. Associated system components are verified not to have leaks.
  - c. There are no other defects affecting lavatory flushing.
  - d. Lavatories are only used when aircraft is above 16,000 ft.
  - e. Duration of flight (considering the altitude limitation on lavatory usage) is acceptable to Pilot-in-Command.
- 

**MAINTENANCE (M)**

1. Raise NTC: "Waste blower inop (MEL 38-02-01) – Toilets can only be flushed during pressurized flight above 16,000 FT"
2. Ensure flight crew and cabin crew are informed.
3. Deactivate or isolate inoperative components. Pull circuit breaker C1389 (Grid No. F002, Vacuum Waste Blower) on the P91 Power Distribution Panel 1.
4. Verify associated system components do not have leaks.

**OPERATIONS (O)**

1. Immediately inform cabin attendants that the toilet(s) can only be flushed in flight above 16,000 feet. Cabin crew to ensure temporary placards are in place, and toilet(s) are not used until notified by flight crew.
2. Upon reaching 16,000 feet, notify cabin attendants (via interphone, PA, switching off fasten seat belt sign, or verbally). Cabin crew to remove temporary placards, and verify that toilet(s) flush properly, prior to first use.
3. During descent, at least 10 minutes prior to reaching 16,000 feet, notify cabin attendants (via interphone, PA or verbally). Cabin crew to restore temporary placards, and ensure toilet(s) are not used below 16,000 feet.

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**ATA 46**  
**Information Systems**

**46-01      Electronic Flight Bag (EFB) System**

46-01-05    Power Connection

*46-01-05A Alternate Procedures Required*

*46-01-05B Procedures Do Not Require Use*

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**46-01 Electronic Flight Bag (EFB) System**
**46-01-05 Power Connection**
**46-01-05A Alternate Procedures Required**

Interval	Installed	Required	Procedure
C	2	0	(O)

May be inoperative provided that an alternate power source is available and can be used for the planned duration on the affected EFB.

**OPERATIONS (O)**

The EFB cannot be charged through Power Connection. Ensure that the affected EFB is sufficiently charged for the planned duration of usage.

Ensure that an alternate power source is available for the affected EFB to be charged.

**46-01 Electronic Flight Bag (EFB) System**
**46-01-05 Power Connection**
**46-01-05B Procedures Do Not Require Use**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided procedures do not require its use.

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**ATA 47**  
**Inert Gas System**

**47-01      Nitrogen Generation System (NGS)**

47-01-01    Nitrogen Generation Degraded

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**47-01      Nitrogen Generation System (NGS)**

Interval	Installed	Required	Procedure
A	1	0	(M)

NOTE: Nitrogen Generation System is installed in all MAB B738 fleet except 9M-MLE.

May be inoperative provided:

- a. NGS shutoff valve is deactivated closed.
  - b. Repairs are made within ten flight days.
- 

**MAINTENANCE (M)**
For -800:

For either the amber INOPERATIVE - UNSERVICEABLE indicator light illuminated or for no operability indicator lights illuminated, deactivate the NGS shutoff valve in the closed position (AMM 47-00-00/901).

**47-01      Nitrogen Generation System (NGS)**
**47-01-01    Nitrogen Generation Degraded**

Interval	Installed	Required	Procedure
C	1	0	

NOTE: Nitrogen Generation System is installed in all MAB B738 fleet except 9M-MLE.

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**Section 2**  
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**Airborne Auxiliary Power**

- 49-01      Auxiliary Power Unit**
- 49-02      APU Annunciator LOW OIL PRESSURE and OVER SPEED Lights**
- 49-04      APU Annunciator LOW OIL Quantity/MAINT Light**
- 49-05      APU EGT Indicator**
  - 49-05-01    Model GTCP85-129
  - 49-05-02    Models GTCP36-280, APS-2000 and AS 131-9B
- 49-06      APU Inlet Door**
  - 49-06A     *APU is Used*
  - 49-06B     *APU is Not Used*
- 49-07      APU Bleed Air Valve**
  - 49-07A     *Bleed Air Valve Closed*
  - 49-07B     *APU Not Operated*
- 49-09      APU Surge Control System**
  - 49-09-02    Surge Control Valve (Model AS 131-9B) (-800)
  - 49-09-02A   *Surge Control Valve Inoperative Open*
  - 49-09-02B   *Surge Control Valve Inoperative Closed*
- 49-12      APU Annunciator HIGH OIL TEMP/FAULT Light**
- 49-15      Start Power Unit (-800)**
  - 49-15-01    AC/DC Start Systems
- 49-16      Start Converter Unit (-800)**
  - 49-16-01    Voltage Regulator Function

Intentionally Blank

**49-01      Auxiliary Power Unit**

Interval	Installed	Required	Procedure
C	1	0	(O) [E]

Except for EDTO operations, may be inoperative provided:

- a. Procedures do not require its use.
  - b. Perform a visual inspection of the tail area and the adjacent control surfaces to confirm that there is no evidence of heat damage or delamination.
- 

**MAINTENANCE NOTE****For -800:**

Aircraft may be operated with the APU removed (AMM 49-11-02, APU Power Plant - Maintenance Practices - requires APU Deletion Tool Kit C49009-1). Also refer to AMM 49-00-00/901.

Advise FDC, OCC for weight and index as given under Operations. Advise MOC, FDC and OCC that APU is removed/inoperative (as appropriate), and that EDTO is not allowed.

**OPERATIONS (O)**

NOTE: Aircraft may be operated with the APU removed in accordance with the AMM provided the resulting changes in weight and balance are accounted for.

Perform a visual inspection of the tailcone area and adjacent control surfaces to confirm that there is no evidence of heat damage or delamination.

**For -800:**

Weight Reduction is 181 kg. Trim Chart Index effect is minus 3.04

---

**49-02            APU Annunciator LOW OIL PRESSURE and OVER SPEED Lights**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided APU Auto Shutdown System operates normally.

- - - - -

**MAINTENANCE NOTE**

APU Auto Shutdown may be checked by starting and shutting down the APU normally.

**49-04 APU Annunciator LOW OIL Quantity/MAINT Light**

Interval	Installed	Required	Procedure
C	1	0	(M) [R]

May be inoperative and APU used provided oil quantity is checked once each flight day.

-----

**MAINTENANCE (M)****For -800:**

1. If the APU is to be used, check APU oil quantity once each flight day (AMM 49-00-00/901).
2. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**49-05 APU EGT Indicator****49-05-01 Model GTCP85-129**

Interval	Installed	Required	Procedure
C	1	0	(O) (M)

May be inoperative provided:

- a. All warning and caution lights operate normally.
  - b. APU is used to supply electrical power and for starting one engine only.
  - c. Passengers are not permitted on board until APU has been shutdown.
- 

**MAINTENANCE (M)**

1. Raise NTC to inform operating crew that passenger is not to board until the APU is shutdown.

**OPERATIONS (O)**

1. Inform FDC/Traffic passengers may not be loaded until APU has been shutdown.
2. On all flight, crew to give boarding clearance to traffic.
3. Electrical load on the APU should be limited to the minimum required for engine start.
4. Start No. 2 Engine only, using APU.
5. Shut down APU.
6. Load passengers.
7. Start No. 1 engine using cross bleed.

**49-05 APU EGT Indicator****49-05-02 Models GTCP36-280, APS-2000 and AS 131-9B**

Interval	Installed	Required	Procedure
C	1	0	

-----

**49-06      APU Inlet Door**  
**49-06A     APU is Used**

Interval	Installed	Required	Procedure
C	1	0	(O) [P]

May be inoperative open.

-----

**MAINTENANCE NOTE**

Advise MOC, FDC and OCC that performance is affected.

For -800:

1. Prepare the airplane for flight with the APU air inlet door inoperative
  - A. Make sure the APU switch is off.
  - B. Open and collar the AUX POWER UNIT CONT and APU FIRE SW POWER circuit breakers.
  - C. Open the stabilizer trim access door.
  - D. Put the air inlet door in the fully open position.
  - E. Close the stabilizer trim access door.
  - F. Close the AUX POWER UNIT CONT and APU FIRE SW POWER circuit breakers.

**OPERATIONS (O)**

The following performance penalties can be used to account for the increased drag resulting from the APU inlet door being inoperative in the open position (either fully or partially open) and the APU not running. Fuel burn will be increased by 2.8%.

MODEL	TAKEOFF & APPROACH/LANDING CLIMB	ENROUTE CLIMB
-800	410 LBS / 186 KG	830 LBS / 376 KG

NOTE: Enroute climb penalties are based on single engine operating speeds that approximate maximum lift-to-drag ratio speed. To account for the difference in level off altitude when operating at other speeds, multiply the enroute climb weight penalty listed above by the appropriate factor listed in DDG Section 3, Enroute Diversion Speed Effects.

**49-06            APU Inlet Door  
49-06B          APU is Not Used**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E] [P]

Except for EDTO operations, may be inoperative in any other position if APU is not used.

-----

**MAINTENANCE (M)**

1. Advise MOC, FDC and OCC that APU cannot be used and operation at downline stations may be affected, performance is affected and EDTO (if applicable) is not allowed.
2. If sufficient time is available, close the air inlet door as described in the MAINTENANCE NOTE, and inform MOC, OCC, FDC and flight crew that the optional task has been accomplished. This is to avoid the performance penalties for air inlet door inoperative in the partial or full open position.  
NOTE: It may be worthwhile to delay the flight to accomplish the optional MAINTENANCE NOTE, as the performance penalty is significant.

**MAINTENANCE NOTE**

For -800:

Prepare the airplane for flight with the APU air inlet door inoperative:

1. Make sure the APU switch is off.
2. Open and collar the AUX POWER UNIT CONT, AUX POWER UNIT SCU FAN POWER, APU FIRE SW POWER, and APU START CONV circuit breakers.
3. Open the stabilizer trim access door.
4. If desired, put the air inlet door in the closed position to avoid airplane performance penalties and fuel burn penalty described in the Operations Note below.
5. Close the stabilizer trim access door.

**OPERATIONS (O)**

1. Dispatch is not allowed if the APU is required by other procedures.
2. APU is not used.

The following performance penalties can be used to account for the increased drag resulting from the APU inlet door being inoperative in the open position (either fully or partially open) and the APU not running. Fuel burn will be increased by 2.8%.

MODEL	TAKEOFF & APPROACH/LANDING CLIMB	ENROUTE CLIMB
-800	410 LBS / 186 KG	830 LBS / 376 KG



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NOTE: Enroute climb penalties are based on single engine operating speeds that approximate maximum lift-to-drag ratio speed. To account for the difference in level off altitude when operating at other speeds, multiply the enroute climb weight penalty listed above by the appropriate factor listed in DDG Section 3, Enroute Diversion Speed Effects.

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**49-07            APU Bleed Air Valve**  
**49-07A          Bleed Air Valve Closed**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative closed.

NOTE: 1. APU may be used to provide electrical power.  
       2. Please refer to item 36-06, Dual Bleed Light System for item dispatchability.

---

**MAINTENANCE (M)**

Advise MOC, FDC and OCC since ground operation at downline stations may be affected.

For -800:

2. For MODEL AS 131-9B:
  - A. Ensure valve is closed by using either the Input Monitoring page of APU BITE TEST or the following procedure (AMM 49-00-00/901):
    - 1) Make sure the APU BLEED switch on the P5 overhead panel is OFF.
    - 2) Gain access to the APU bleed air valve and check that the indication on the valve shows CLOSED.
    - 3) Close the APU cowl door.

---

**49-07            APU Bleed Air Valve**
**49-07B          APU Not Operated**

Interval	Installed	Required	Procedure
C	1	0	(O) [E]

Except for EDTO operations, may be inoperative provided:

- a. APU bleed air check valve operates normally.
- b. APU is not operated.

NOTE: Please refer to item 36-06, Dual Bleed Light System for item dispatchability.

---

**OPERATIONS (O)**

1. Dispatch is not allowed if the APU is required by other procedures.
2. Do not operate APU.

- 49-09 APU Surge Control System**  
**49-09-02 Surge Control Valve (Model AS 131-9B) (-800)**  
**49-09-02A Surge Control Valve Inoperative Open**

Interval	Installed	Required	Procedure
C	1	0	(M)

May be inoperative in open position provided APU bleed air is not used.  
 NOTE: APU may be used to provide electrical power.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC since ground operation at downline stations may be affected.

- 49-09 APU Surge Control System**  
**49-09-02 Surge Control Valve (Model AS 131-9B) (-800)**  
**49-09-02B Surge Control Valve Inoperative Closed**

Interval	Installed	Required	Procedure
C	1	0	(M) (O) [E]

Except for EDTO operations, may be inoperative in closed position provided APU is not used.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC since ground operation at downline stations may be affected, and EDTO (if applicable) is not allowed.

**OPERATIONS (O)**

1. Dispatch is not allowed if the APU is required by other procedures.
2. APU must not be started.

**49-12 APU Annunciator HIGH OIL TEMP/FAULT Light**

Interval	Installed	Required	Procedure
C	1	0	

---

**49-15 Start Power Unit (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) [E]

Except for EDTO operations, may be inoperative provided procedures do not require use of APU.

-----

**MAINTENANCE (M)**

Deactivate the start power unit (AMM 49-00-00/901):

1. Position the APU switch OFF.
2. Open and collar the following circuit breakers:
  - A. P6-4 panel AUX POWER UNIT CONT
  - B. P6-4 panel AUX POWER UNIT SCU FAN POWER
  - C. P6-2 panel APU FIRE SW POWER
  - D. P91 panel APU START CONV
3. Disconnect, cap and stow the battery type connector to the SPU, located on the E2-2 Shelf in EE Bay.
4. Advise MOC, FDC and OCC since ground operation at downline stations may be affected, and EDTO (if applicable) is not allowed.

**49-15 Start Power Unit (-800)**
**49-15-01 AC/DC Start Systems**

Interval	Installed	Required	Procedure
C	2	1	

**49-16 Start Converter Unit (-800)**

Interval	Installed	Required	Procedure
C	1	0	(M) [E]

Except for EDTO operations, may be inoperative provided procedures do not require use of APU.

- - - - -

**MAINTENANCE (M)**

Deactivate the start converter unit (AMM 49-00-00/901):

1. Position the APU switch OFF.
2. Open and collar the following circuit breakers:
  - A. P6-4 panel AUX POWER UNIT CONT
  - B. P6-4 panel AUX POWER UNIT SCU FAN POWER
  - C. P6-2 panel APU FIRE SW POWER
  - D. P91 panel APU START CONV
3. Advise MOC, FDC and OCC since ground operation at downline stations may be affected, and EDTO (if applicable) is not allowed.

**49-16 Start Converter Unit (-800)****49-16-01 Voltage Regulator Function**

Interval	Installed	Required	Procedure
C	1	0	(M) [E]

Except for EDTO operations, may be inoperative provided APU generator is not used for electrical power.

NOTE: APU may be used as a pneumatic source.

- - - - -

**MAINTENANCE (M)**

Advise MOC, FDC and OCC since ground operation at downline stations may be affected, and EDTO (if applicable) is not allowed.

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**52-03           Door Warning Light System**  
**52-03-01       Entry/Service/Cargo/Equipment/Airstair**


---

Interval	Installed	Required	Procedure
C	8	0	(M) [R]

May be inoperative provided associated door is verified closed and locked before each departure.

NOTE: On -800, if two or more entry/service door warning lights are inoperative due to failed door sensors, overwing exit flight lock system will not function properly. Refer to MEL item 52-15.

---

### **MAINTENANCE (M)**

#### *For -800:*

Visually inspect the affected door(s) to ensure that door is closed and locked (AMM 52-00-00/901).

NOTE: If desired, deactivate the faulty door indication(s).

1. To deactivate a faulty forward or aft cargo door indication switch, do these steps (AMM 52-00-00/901):
  - A. Disconnect ground wire from the forward or aft cargo door indication switch (AMM 52-71-31-000-801). Secure disconnected wire.
  - B. Visually inspect the affected door(s) to ensure that door is closed and locked.
  - C. Confirm that the affected (FWD or AFT) CARGO door warning and MASTER CAUTION lights are on after the affected door is closed and locked.
  - D. Press and release MASTER CAUTION light to reset.
2. To deactivate a faulty forward entry door indication, do these steps:
  - A. Remove wire W2216-0002-24 at the connector D1406 pin 8 on P5-20 per WDM 52-71-11. Cap and stow the disconnected wire.
  - B. Confirm that the FWD ENTRY door light remains off while the door is open.
  - C. Confirm that the forward entry door is closed and latched.
3. To deactivate a faulty aft entry door indication, do these steps:
  - A. Remove wire W2216-0003-24 at the connector D1406 pin 5 on P5-20 per WDM 52-71-11. Cap and stow the disconnected wire.
  - B. Confirm that the AFT ENTRY door light remains off while the door is open.
  - C. Confirm that the aft entry door is closed and latched.
4. To deactivate a faulty forward service door indication, do these steps:
  - A. Remove wire W2216-0004-24 at the connector D1406 pin 2 on P5-20 per WDM 52-71-11. Cap and stow the disconnected wire.
  - B. Confirm that the FWD SERVICE door light remains off while the door is open.
  - C. Confirm that the forward service door is closed and latched.

5. To deactivate a faulty aft service door indication, do these steps:
  - A. Remove wire W2216-0005-24 at the connector D1406 pin 3 on P5-20 per WDM 52-71-11. Cap and stow the disconnected wire.
  - B. Confirm that the SERVICE door light remains off while the door is open.
  - C. Confirm that the aft service door is closed and latched.
6. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

---

**52-03           Door Warning Light System**  
**52-03-02       Overwing (-800)**

Interval	Installed	Required	Procedure
C	4	0	(M) [R]

May be inoperative provided:

- a. Associated door is verified closed and latched before each departure.
  - b. Associated flight lock is verified to operate normally.
- - - - -

**MAINTENANCE (M)**

1. Verify affected door is closed and latched, and the associated flight lock operates normally (AMM 52-00-00/901).
  - A. Exit exterior flush with fuselage skin.
  - B. Vent panel(s) closed and faired.
  - C. Exit liner faired with cabin interior.
  - D. Inside handle(s) rotated to the latched position.
  - E. Handle covers installed.
2. Check PSEU BITE to verify that the associated flight lock is operating normally.  
NOTE: If flight lock failed open faults are present, dispatch is permitted under MEL Item 52-15.
3. (m) Ensure MOC is informed about this MEL repetitive maintenance item.



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MINIMUM EQUIPMENT LIST

Section 2: ATA 52  
Doors

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Aug 10, 2020

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2.52-03.3  
Internal Use Only

**52-05 Left Main Cabin Door Pressure Stop Fittings****52-05-01 Aft Airstair Door and Forward Entry Door****52-05-01B Digital Cabin Pressure Control System (-800)**

Interval	Installed	Required	Procedure
<b>B</b>	<b>14</b>	<b>13</b>	<b>(M) (O) [P]</b>

One per door may be broken or missing provided:

- a. There are no visible defects on other fittings for associated door.
- b. Pressure differential does not exceed 6.0 psi.
- c. Digital cabin pressure control system AUTO or ALTN control mode operates normally.
- d. Alternate procedures are established and used.

**NOTE:** This item provides dispatch relief for only the forward main entry door and aft main entry door on the left side of the airplane. A door pressure stop consists of two mating stop fittings, one being attached to the door and the other attached to the fuselage. Either or both stop fittings may be broken or missing at a single door pressure stop location.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that enroute altitude should be limited to 27,000 feet so that a cabin altitude of 8,000 feet can be maintained.

**For -800:**

Visually inspect remaining fittings for possible defects on affected door(s), body frames and sills (if installed) (AMM 52-00-00/901).

**OPERATIONS (O)**

**NOTE:** Do not exceed the maximum pressure differential of 6.0 psi. Limit flight altitude to 27,000 feet or lower to maintain a cabin altitude of less than 8,000 feet.

1. Select a landing altitude of 8,000 ft. MSL on the cabin pressure control panel. Cabin altitude will ascend to slightly less than 8,000 ft. during climb to cruise altitude.

**NOTE:** Actual landing airport altitude may be selected if flight altitude is limited to 13,000 feet.

2. Monitor differential pressure indicator during climb to ensure maximum pressure differential of 6.0 psi is not exceeded.
3. Select actual landing airport altitude after initiating descent. If required to hold during descent, it may be necessary to increase the landing altitude in accordance with the Differential Pressure Schedule below.
4. Lower cabin altitudes may be obtained by appropriate selection of flight altitude and cabin/landing altitude in accordance with the Differential Pressure Schedule below.



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Doors

FLIGHT ALTITUDE (FT)	CABIN ALTITUDE (FT) (6.0 PSI PRESSURE DIFFERENTIAL)
14000	100
15000	800
16000	1400
17000	2000
18000	2700
19000	3300
20000	3900
21000	4500
22000	5000
23000	5600
24000	6200
25000	6700
26000	7300
27000	7800
28000	8300

**52-05 Left Main Cabin Door Pressure Stop Fittings****52-05-02 Aft Door Without Airstairs****52-05-02B Digital Cabin Pressure Control System (-800)**

Interval	Installed	Required	Procedure
<b>B</b>	<b>14</b>	<b>13</b>	<b>(M) (O) [P]</b>

One per door may be broken or missing provided:

- a. There are no visible defects on other fittings for associated door.
- b. Pressure differential does not exceed 3.4 psi.
- c. Digital cabin pressure control system AUTO or ALTN control mode operates normally.
- d. Alternate procedures are established and used.

**NOTE:** This item provides dispatch relief for only the aft main entry door on the left side of the airplane. A door pressure stop consists of two mating stop fittings, one being attached to the door and the other attached to the fuselage. Either or both stop fittings may be broken or missing at a single door pressure stop location.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that enroute altitude should be limited to 17,000 feet so that a cabin altitude of 8,000 feet can be maintained.

**For -800:**

Visually inspect remaining fittings for possible defects on affected door, body frames and sills (if installed) (AMM 52-00-00/901).

**OPERATIONS (O)**

**NOTE:** Do not exceed the maximum pressure differential of 3.4 psi. Limit flight altitude to 17,000 feet or lower to maintain a cabin altitude of less than 8,000 feet.

1. Select a landing altitude of 8,000 ft. MSL on the cabin pressure control panel. Cabin altitude will ascend to slightly less than 8,000 ft. during climb to cruise altitude.

**NOTE:** Actual landing airport altitude may be selected if flight altitude is limited to 7,000 feet.

2. Monitor differential pressure indicator during climb to ensure maximum pressure differential of 3.4 psi is not exceeded.
3. Select actual landing airport altitude after initiating descent. If required to hold during descent, it may be necessary to increase the landing altitude in accordance with the Differential Pressure Schedule below.
4. Lower cabin altitudes may be obtained by appropriate selection of flight altitude and cabin/landing altitude in accordance with the Differential Pressure Schedule below.



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FLIGHT ALTITUDE (FT)	CABIN ALTITUDE (FT) (3.4 PSI PRESSURE DIFFERENTIAL)
7000	0
8000	800
9000	1600
10000	2400
11000	3200
12000	4000
13000	4700
14000	5400
15000	6100
16000	7000
17000	7700
18000	8300

**52-06 Lower Cargo Doors Pressure Stop Fittings  
52-06-01 All models (one per door)**

Interval	Installed	Required	Procedure
A	24	22	(M)

Any one may be broken or missing on each door or frame provided:

- a. No defects are visible on other fittings for associated door.
- b. Cabin pressure controller AUTO mode operates normally.
- c. Adjacent stop fittings are inspected within 25 flights.
- d. Not more than 50 flights are made before the completion of repairs or replacements.

NOTE: A door pressure stop consists of two mating stop fittings, one being attached to the door and the other attached to the fuselage. The number installed shown above is the number of stop locations. For pressurized flight, either or both stop fittings may be broken or missing at a single door pressure stop location.

**MAINTENANCE (M)****For -800:**

1. Visually inspect remaining fittings for possible defects on affected door, body frames and sills (AMM 52-00-00/901).

**For All Model**

2. Inspection is repeated within 25 flights.
3. Repairs are completed within 50 flights.

**52-06 Lower Cargo Doors Pressure Stop Fittings  
52-06-03 -800 (two per door)**

Interval	Installed	Required	Procedure
C	24	20	(M) (O) [P]

Two may be broken or missing on each door or frame provided airplane is operated in an unpressurized configuration only.

NOTE: A door pressure stop consists of two mating stop fittings, one being attached to the door and the other attached to the fuselage. The number installed shown above is the number of stop locations. For unpressurized flight, either or both stop fittings may be broken or missing at two door pressure stop locations.

**MAINTENANCE (M)**

1. Configure airplane for unpressurized flight by using the manual mode of the Cabin Pressure Control System to position the outflow valve to the full open position. Hold outflow valve toggle switch in the OPEN position for 10 seconds (Analog System) or 30 seconds (Digital System) (AMM 52-00-00/901).



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MINIMUM EQUIPMENT LIST

Section 2: ATA 52  
Doors

- 
2. Advise MOC, FDC and OCC that performance is affected.

**OPERATIONS (O)**

For unpressurized flight, use MEL Item 21-14 Operations Procedures.

**52-07      Entry/Service Door Hold-Open Latch Assemblies (Gust Lock)**

Interval	Installed	Required	Procedure
-	4	4	

Must be operative for passenger operations. Release mechanism may be inoperative, refer MEL 52-07-01.

-----

**52-07      Entry/Service Door Hold-Open Latch Assemblies (Gust Lock)**  
**52-07-01    Latch Release Lever**

Interval	Installed	Required	Procedure
C	4	0	(M) (O)

**OPERATIONS (O)**

Contact engineer/technician to assist cabin crew to release the hold open latch.

**MAINTENANCE (M)**

Refer to AMM Task 52-07-00-210-801 to release the entry/service door hold-open latch.

**52-09 Lower Cargo Doors Door Balance Mechanism**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided a safety hold open device is used when door is in open position.

- - - - -

**MAINTENANCE (M)**

Operators should select an appropriate procedure/tool to hold the cargo door open.

---

**52-14            Lower Cargo Doors Hold Open Mechanism/Device**  
**52-14A        Door Balance Mechanism Operates Normally**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided Door Balance Mechanism operates normally.

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**52-14            Lower Cargo Doors Hold Open Mechanism/Device**  
**52-14B        Cargo Compartment Remains Empty**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided cargo compartment remains empty.

-----

**52-15            Flight Lock System  
 52-15-01        Overwing Exit (-800)**

Interval	Installed	Required	Procedure
C	4	0	(M) (O) [R]

May be inoperative provided:

- Each affected exit is verified to be capable of being unlatched and opened before each departure.
  - A person employed by operator is designated to remain seated in passenger seat nearest affected exit when cabin differential pressure is less than 4.0 psi.
- 

**MAINTENANCE (M)**

NOTE: After performing the following maintenance procedure, the PSEU may indicate nuisance non-dispatchable flight lock switch fault(s) after using the airplane battery to power up the airplane. Fault codes 52-72106(L Fwd), 52-72107(L), 52-72108(R), 52-72109 (R Fwd) may appear depending on which door was deferred. In this instance, fault(s) can be cleared by performing AMM task 32-09-00-860-802 paragraph D. (6). (a) - (e).

Verify the associated exit is capable of being unlatched and opened, and the flight lock including the input to the Master Caution System is deactivated (AMM 52-00-00/901)

- Verify the associated exit is capable of being unlatched and opened.
- Deactivate the flight lock including input to Master Caution System.  
Disconnect, cap and stow the associated PSEU connector wire and then jumper the PSEU connector as indicated in the table below.

MODEL	AFFECTED EXIT DOOR	ASSOCIATED CONNECTOR	REMOVE WIRE (CAP & STOW) FROM PIN NUMBER	PIN NUMBERS TO BE JUMPERED
-600/-700	Left	D10986	Pin 20	Pin 40 to Pin 20
-600/-700	Right	D10988	Pin 02	Pin 53 to Pin 02
-800/-900	Left Aft	D10986	Pin 20	Pin 40 to Pin 20
-800/-900	Left Forward	D10986	Pin 53	Pin 40 to Pin 53
-800/-900	Right Aft	D10988	Pin 02	Pin 53 to Pin 02
-800/-900	Right Forward	D10988	Pin 52	Pin 53 to Pin 52

NOTE: Use 20 AWG wire gauge for the jumpers installed in Step 2.

- Verify that the flight lock input to Master Caution is deactivated.

**CAUTION: DO NOT PERFORM THIS TEST WITH ENGINES RUNNING.**

- Establish electrical power to airplane.

- B. Open P6-2 Panel circuit breakers OVERWING FLIGHT LOCK LEFT and OVERWING FLIGHT LOCK RIGHT.
  - C. Open P6-3 Panel circuit breakers FUEL SPAR VALVE ENG 1 and FUEL SPAR VALVE ENG 2.
  - D. Open P6-1 Panel circuit breaker WEATHER RADAR RT.
  - E. Without automatic ignition:
    - Verify that both ENGINE START switches are in the OFF position.
  - F. With automatic ignition:
    - Verify that both ENGINE START switches are in the AUTO position.
  - G. Position both engine start levers to IDLE position.
    - NOTE: Start levers must be in IDLE position for at least 5 minutes prior to advancing thrust levers (Step 3J).
  - H. Verify that at least 3 of the 4 Entry/Service Doors are closed.
  - I. Verify that all of the Overwing Exit Doors are closed.
  - J. Advance fully both thrust levers.
  - K. Verify that the overhead panel Overwing Light(s) associated with the inoperative flight lock(s) is extinguished.
  - L. Retard fully both thrust levers.
  - M. Close P6-2 Panel circuit breakers OVERWING FLIGHT LOCK LEFT and OVERWING FLIGHT LOCK RIGHT.
  - N. Advance fully both thrust levers.
  - O. Verify that the all overhead panel Overwing Lights are extinguished.
  - P. Press Master Caution recall.
  - Q. Verify that the PSEU Light is extinguished.
  - R. Retard fully both thrust levers.
  - S. Position both engine start levers to CUTOFF position.
  - T. Close P6-3 Panel circuit breakers FUEL SPAR VALVE ENG 1 and FUEL SPAR VALVE ENG 2.
  - U. Close P6-1 Panel circuit breaker WEATHER RADAR RT.
4. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

### **OPERATIONS (O)**

- 1. When cabin differential pressure is less than 4.0 psi, each affected door must be monitored by a designated employee, such as a flight attendant, pilot or mechanic, to ensure door handle is not operated by passengers.
- 2. Flight crew is to inform cabin crew when monitoring is required.

**52-17 Enhanced Flight Deck Security Door Automatic Locking System**

Interval	Installed	Required	Procedure
A	1	0	(M) (O)

May be inoperative provided:

- a. Automatic locking system is deactivated.
  - b. Door dead bolt operates normally and is used to lock door.
  - c. Alternate procedures are established and used for locking and unlocking door using dead bolt.
  - d. Repairs are made within two flight days.
- 

**MAINTENANCE (M)**

Position Flight Deck Access System switch OFF (guard extended) to deactivate the automatic locking system.

NOTE: LOCK FAIL light will remain illuminated when the Flight Deck Access System switch is in the OFF position (guard extended).

**OPERATIONS (O)**

Additional Flight Crew / Cabin Crew is required in the flight deck throughout the absence of the other operating flight crew during the flight to cater for pilot incapacitation occurrence. For detailed explanation, refer SEP manual.

**52-17 Enhanced Flight Deck Security Door Automatic Locking System**
**52-17-01 Flight Deck Access Panel System (Keypad, Door Chime)**

Interval	Installed	Required	Procedure
B	1	0	(M) (O)

May be inoperative provided:

- a. Keypad is deactivated.
  - b. Alternate procedures are established and used.
- 

**MAINTENANCE (M)**

For -800:

Deactivate the keypad (AMM 52-00-00/901):

For All Models:

1. Open the circuit breaker for the flight deck door lock.
2. Disconnect the keypad electrical connector at the chime module side.
3. Close the circuit breaker for the flight deck door lock.

NOTE: When flight deck door is closed with the flight deck not occupied, make sure the Flight Deck Access System switch is in the OFF position (guard extended).

**OPERATIONS (O)**

Cabin Crew is required to establish communication with flight deck crew through interphone prior to entry. Flight Crew is required to positively identify cabin crew through the CDSS prior to granting access. When flight deck door is closed with the flight deck not occupied, make sure the Flight Deck Access System switch is in the OFF position (guard extended). For detailed explanation, refer SEP manual.

- 
- 52-17 Enhanced Flight Deck Security Door Automatic Locking System**  
**52-17-01 Flight Deck Access Panel System (Keypad, Door Chime)**  
**52-17-01-01 LEDs**

Interval	Installed	Required	Procedure
C	3	0	(O)

May be inoperative provided alternate procedures are established and used.

-----

**OPERATIONS (O)**

Cabin Crew is required to establish communication with flight deck crew through the interphone prior to entry. Flight Crew is required to positively identify cabin crew through the CDSS prior to granting access. For detailed explanation, refer SEP manual.

- 
- 52-17 Enhanced Flight Deck Security Door Automatic Locking System**  
**52-17-01 Flight Deck Access Panel System (Keypad, Door Chime)**  
**52-17-01-02 Door Bell Mode**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided alternate procedures are established and used.

-----

**OPERATIONS (O)**

Cabin Crew is required to establish communication with flight deck crew through the interphone prior to entry. Flight Crew is required to positively identify cabin crew through the CDSS prior to granting access. Once the door LED green light illuminates, crew may enter. For detailed explanation , refer SEP manual.

---

**52-17 Enhanced Flight Deck Security Door Automatic Locking System**

**52-17-01 Flight Deck Access Panel System (Keypad, Door Chime)**  
**52-17-01-03 Switch Guard**

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative or missing provided flight deck door LOCK FAIL light operates normally.

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**52-17 Enhanced Flight Deck Security Door Automatic Locking System**

**52-17-02 Flight Deck Door LOCK FAIL Light**

Interval	Installed	Required	Procedure
B	1	0	(M)

May be inoperative provided automatic lock controls are verified to operate normally.

-----

### **MAINTENANCE (M)**

#### **For -800:**

Verify automatic lock controls are operating normally (AMM 52-00-00/901):

#### **For All Models:**

1. With the flight deck door open, supply electrical power on the airplane (AMM 24-22-00/201).
2. Position Flight Deck Access System switch NORM (guard closed).
3. Position the Flight Deck Door Lock selector AUTO.
4. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you cannot rotate the strike).
5. Enter keypad access code and verify the door chime sounds.
6. Position the Flight Deck Door Lock selector DENY.
7. Before the DENY time delay has expired, enter the keypad access code and verify the door chime does not sound.
8. Position and hold Flight Deck Door Lock selector UNLKD.
9. Verify the electric strike is in the unlocked position (solenoid pin in the electric strike will retract down such that you can rotate the strike).
10. Position the Flight Deck Door Lock selector AUTO.
11. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you cannot rotate the strike).

**52-17 Enhanced Flight Deck Security Door Automatic Locking System****52-17-03 Flight Deck Door AUTO UNLK Light**

Interval	Installed	Required	Procedure
B	1	0	(M)

May be inoperative provided:

- a. Automatic lock controls are verified to operate normally.
  - b. Door chime operates normally.
- - - - -

**MAINTENANCE (M)****For -800:**

Verify automatic lock controls are operating normally (AMM 52-00-00/901):

**For All Models:**

1. With the flight deck door open, supply electrical power on the airplane (AMM 24-22-00/201).
2. Position Flight Deck Access System switch NORM (guard closed).
3. Position the Flight Deck Door Lock selector AUTO.
4. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you cannot rotate the strike).
5. Enter keypad access code and verify the door chime sounds.
6. Position the Flight Deck Door Lock selector DENY.
7. Before the DENY time delay has expired, enter the keypad access code and verify the door chime does not sound.
8. Position and hold Flight Deck Door Lock selector UNLKD.
9. Verify the electric strike is in the unlocked position (solenoid pin in the electric strike will retract down such that you can rotate the strike).
10. Position the Flight Deck Door Lock selector AUTO.
11. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you cannot rotate the strike).

**52-17 Enhanced Flight Deck Security Door Automatic Locking System****52-17-04 Flight Deck Door Lock Control Selector**

Interval	Installed	Required	Procedure
B	1	0	(M) (O)

May be inoperative provided:

- a. Keypad is deactivated.
  - b. Automatic lock is verified to operate normally.
  - c. Alternate procedures are established and used.
- - - - -

**MAINTENANCE (M)****For -800:**

1. Deactivate the keypad (AMM 52-00-00/901):
  - A. Open the circuit breaker for the flight deck door lock.
  - B. Disconnect the keypad electrical connector at the chime module side.
  - C. Close the circuit breaker for the flight deck door lock.

NOTE: When flight deck door is closed with the flight deck not occupied, make sure the Flight Deck Access System switch is in the OFF position (guard extended).
2. Verify the automatic lock is operating normally (AMM 52-00-00/901):
  - A. With the flight deck door open, supply electrical power on the airplane (AMM 24-22-00/201).
  - B. Position Flight Deck Access System switch NORM (guard closed).
  - C. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you cannot rotate the strike).
  - D. Position Flight Deck Access System switch OFF (guard extended).
  - E. Verify the electric strike is in the unlocked position (solenoid pin in the electric strike will retract down such that you can rotate the strike).
  - F. Position Flight Deck Access System switch NORM (guard closed).
  - G. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you cannot rotate the strike).

**OPERATIONS (O)**

Cabin Crew are to establish communication with flight deck crew through the interphone prior to entry. Flight Crew are to positively identify cabin crew through the CDSS prior to granting access. When flight deck door is closed with the flight deck not occupied, make sure the Flight Deck Access System switch is in the OFF position (guard extended). For detailed explanation, refer SEP manual.

---

**52-17            Enhanced Flight Deck Security Door Automatic Locking System****52-17-05        MOVED (Flight Deck Door Pressure Relief Panels)**

Interval	Installed	Required	Procedure

Item moved to 52-20, Revision 46

-----

---

**52-18 Enhanced Flight Deck Security Door Dead Bolt**

---

Interval	Installed	Required	Procedure
A	1	0	

May be inoperative provided:

- a. Automatic lock controls operate normally.
  - b. Repairs are made within two flight days.
-



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Section 2: ATA 52  
Doors

- 
- 52-20            Flight Deck Door Pressure Relief Panels**  
**52-20-02       Enhanced Flight Deck Security Door**
- 

Interval	Installed	Required	Procedure
<b>A</b>	<b>2</b>	<b>0</b>	

May be inoperative provided:

- a. Panels are in the latched position.
  - b. Repairs are made within two flight days.
-

---

**52-21            Cockpit Door's Mechanical Latches**

---

Interval	Installed	Required	Procedure
B	2	1	

One may be inoperative.

---



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MINIMUM EQUIPMENT LIST

Section 2: ATA 52  
Doors

---

**52-22            Flight Deck Door Hold Open Device (e.g. Door Stop,  
                  Foot Plunger, etc.)**

---

Interval	Installed	Required	Procedure
D	1	0	

---

---

**52-23      Flight Deck Door Viewing Port**  
**52-23A     Alternate Procedures Required**

Interval	Installed	Required	Procedure
A	1	0	(O)

May be inoperative provided:

- a. Alternate procedures are established and used.
  - b. Repairs are made within three flight days.
- 

**OPERATIONS (O)**

Alternate procedures must be established and used to ensure the area outside the flight crew compartment door is secure.

---

**52-23      Flight Deck Door Viewing Port**  
**52-23B     Electronic Flight Deck Door Visual Surveillance System Operates Normally**

Interval	Installed	Required	Procedure
C	1	0	(O)

May be inoperative provided:

- a. An electronic flight deck door visual surveillance system is installed and operates normally.
  - b. Alternate procedures are established and used.
- 

**OPERATIONS (O)**

Alternate procedures must be established and use to ensure the area outside the flight crew compartment door is secured.

**52-25      Cargo Door Exterior Handle Recess/Hinge Spring Assemblies**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative or missing provided the affected cargo door exterior handle is secured in a recessed position flush with the fuselage

Note: This MEL item may be applied to an inoperative exterior handle recess spring/spring assembly and/or to an inoperative flapper door hinge spring assembly.

**MAINTENANCE (M)**

Secure the affected cargo door exterior handle in a recessed position flush with the fuselage (AMM 52-00-00/901).

Note: Speed Tape may be used to secure affected cargo door exterior handle in a recessed position flush with the fuselage. If speed tape is used, the area where the tape is applied should be cleaned with solvent prior to application, and new speed tape should be applied each time the affected cargo door exterior handle is used to operate the door during the MEL deferral period.

**52-50 Main Entry Door/Slides**

Interval	Installed	Required	Procedure
-	4	4	-

Must be operative.

Note: Main Entry Door (Pax Door)/Slides is a NO-GO item based on MMEL and FAA policy i.e. not allowing dispatch relief for this item on narrow body airplanes.

-----



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Section 2: ATA 56  
Windows

**Section 2**  
**Table of Contents**

**ATA 56**  
**Windows**

**56-10      Flight Compartment/Cockpit Windows**

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**56-10 Flight Compartment/Cockpit Windows**

Interval	Installed	Required	Procedure
-	<b>6</b>	<b>6</b>	<b>(M)</b>

For dispatch, refer the approved maintenance manual on the allowable damage and its associated limitations. Damage verification against maintenance manual limits are required prior to every flight.

**MAINTENANCE (M)**

Inspect and evaluate the damage as per the approved maintenance manual. For deferrable defect (i.1996e. damage within limit of the Maintenance Manual) describe the actual damage and its associated maintenance manual limit in airplane technical log.

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**Section 2  
Table of Contents****ATA 73  
Engine Fuel & Control**

- 73-04      Fuel Filter Differential Pressure Warning Systems**  
    73-04-02    -800
- 73-05      Fuel Flow Indication Systems**
- 73-06      Fuel Used Indicators**
- 73-10      Fuel Control ENG VALVE CLOSED Indicating System (-800)**
- 73-11      Electronic Engine Control (EEC) (-800)**  
    73-11-01    Normal (ON) Mode
- 73-12      Electronic Engine Control (EEC) Alternate Power Supply  
                System (-800)**

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**73-04                    Fuel Filter Differential Pressure Warning Systems**  
**73-04-02                -800**

Interval	Installed	Required	Procedure
C	2	1	(M) [E]

One may be inoperative provided malfunction is verified to be in warning system.

-----

**MAINTENANCE (M)**
**For -800:**

Verify that the malfunction is in the fuel filter bypass warning system (AMM 73-00-00/901):

1. If the FILTER BYPASS light illuminates with the engine not operating either with the EEC powered (start switch in CONT) or EEC not powered (start switch in OFF/AUTO), the fuel filter bypass warning system is faulty. Proceed to step 3 below to replace the fuel filter.
2. If the FILTER BYPASS light does NOT illuminate with the engine not operating, perform the following:
  - A. If FUEL FILTER BYPASS light was ON prior to engine shutdown, check EEC BITE-RECENT FAULTS for a "FUEL FILTER SIGNALS DISAGREE" fault message (AMM 73-21-00). If this fault message is present, proceed to step 3 below to replace the fuel filter.  
NOTE: Other EEC fault messages may need to be addressed prior to dispatch.
  - B. Check DEU for fault messages. A CDS MAINT message may indicate a DEU fault that affects the fuel filter bypass indication.  
NOTE: A CDS FAULT must be addressed prior to dispatch.
  - C. If the Fuel FILTER BYPASS light is inoperative OFF, do EEC TEST, AMM task 73-21-00-700-804-F00.  
NOTE: Remaining indication lights in the EEC test should illuminate normally.
3. Replace fuel filter with a new filter (AMM 73-11-02).  
NOTE: Except for ER operations, one flight is permitted prior to filter replacement provided that fuel drained from filter housing drain plug is free of visible, gross contamination.

**OPERATIONS NOTE**

If the remaining FILTER BYPASS light illuminates, assume both engine fuel filters have an impending bypass condition.

**73-05      Fuel Flow Indication Systems**

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided:

- a. N1, N2 for associated engine operate normally.
  - b. Both main tank fuel quantity indicators operate normally.
-



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Section 2: ATA 73  
Engine Fuel & Control

**73-06      Fuel Used Indicators**

Interval	Installed	Required	Procedure
C	2	0	

---

**73-10            Fuel Control ENG VALVE CLOSED Indicating System (-800)**

Interval	Installed	Required	Procedure
C	2	0	(M)

May be inoperative provided associated valve is verified to operate normally.

---

**MAINTENANCE (M)**

Verify associated fuel shutoff valve operates normally (AMM 73-00-00/901).

1. Open and collar the P6-3 Panel ENGINE FUEL ENGINE (1/2) HPSOV IND circuit breaker
2. Start engine and allow it to stabilize.
3. Open the associated engine P6-3 Panel SPAR VALVE ENG circuit breaker.
4. Set each engine start lever to CUTOFF position.
5. Verify that the engine immediately decelerates.
6. Close the P6-3 Panel SPAR VALVE ENG circuit breaker.

**73-11                  Electronic Engine Control (EEC) (-800)**  
**73-11-01              Normal (ON) Mode**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [P]

May be inoperative provided:

- a. Both engines are operated in ALTERNATE mode.
- b. Strut/wing leading edge over-braided wire bundles are installed per Boeing Service Bulletin or production equivalent.
- c. Applicable AFM performance adjustments are applied.

NOTE 1: Dispatch is not allowed with ENGINE CONTROL light(s) illuminated or inoperative.

NOTE 2: Operation with Electronic Engine Controls (EEC's) in Alternate (ALTN) mode requires that Boeing Service Bulletin SB 737-73-1015 (or production equivalent) is installed on 737-800 airplanes prior to line number 147. All MAB -800 have production equivalent of SB 737-73-1015.

**MAINTENANCE (M)**

Advise MOC, FDC and OCC that performance is affected.

**OPERATIONS (O)**

NOTE: Maximum rated thrust may be reached at a reduced thrust lever position.

1. Position both EEC Mode switches to ALTN.
2. For 18K through 24K thrust ratings, use full rated takeoff thrust (derated and/or assumed temperature method reduced thrust takeoffs are not allowed).
3. For 26K or 27K thrust ratings takeoff thrust derates utilizing thrust levels down to and including 24K are not permissible.  
(Deleted)
4. For takeoff at the 26K or 27K thrust levels: Do not use FMC-computed V-speeds or takeoff thrust N1 values. Refer to AFM-DPI for appropriate takeoff performance adjustments, V-speeds and takeoff thrust N1 values (use manual takeoff thrust setting procedures).

**73-12            Electronic Engine Control (EEC) Alternate Power Supply System (-800)**

Interval	Installed	Required	Procedure
A	4	3	(M)

May be inoperative deactivated provided repairs are made in accordance with the times established in Boeing Maintenance Planning Data document D626A001, Section 1, Items 73-020-01 and 73-020-02.

The following times established is extracted from Boeing Maintenance Planning Data document D626A001, Section 1, Items 73-020-01 and 73-020-02 dated 15<sup>th</sup> October 2011. In case of conflict, Boeing MPD will override this time established. For Boeing MPD Item Number 73-020-01 (left engine faults) or 73-020-02 (right engine faults):

1. Interrogate the FMC CDU for left or right engine faults (basic and DAC engine).
2. INTERVAL NOTE:

A. Short-time fault: 150 flt hours

If any short time faults are found, corrective action for their repair is required immediately. The frequency of this check may be modified provided the new interval plus the time the fault corrective action may be deferred does not exceed 150 hrs total, as required per ATA 05-17-01 of the engine shop manual CFMI-TP.SM.10. For example, check recent faults every 70 hrs and fix the reported short time faults within the next 80 hrs.

B. Long-time fault: 425 flt hours

If any long time faults are found, corrective action for their repair is required with 425 hrs. The frequency of this check may be modified provided one half of the new interval plus the time the fault corrective action may be deferred does not exceed 500 hrs total, as required per ATA 05-17-01 of the engine shop manual CFMI-TP.SM.10. For example, check recent faults every 70 hrs and fix the reported long time faults within the next 465 flight hours.

C. Economic fault: 120 days

If any economic faults are found, repair is recommended on an opportunity basis.

-----  
NOTE: Dispatch is not allowed with ENGINE CONTROL light(s) illuminated or inoperative.

### **MAINTENANCE (M)**

Deactivate inoperative EEC Alternate Power Supply System (AMM 73-00-00/901)

1. For number 1 engine:
  - A. Open and collar the P18-2 panel circuit breaker ENG 1 ALTN PWR CHAN A or ENG 1 ALTN PWR CHAN B, as appropriate.
2. For number 2 engine:
  - A. Open and collar the P6-2 panel circuit breaker ENG 2 ALTN PWR CHAN A or ENG 2 ALTN PWR CHAN B, as appropriate.

**Section 2**  
**Table of Contents****ATA 74**  
**Engine Ignition****74-01      Ignition Systems**

74-01-02    -800

74-01-02-01    Left Ignition Systems

    74-01-02-01A    *EDTO Operations Allowed*    74-01-02-01B    *Except EDTO Operations*

74-01-02-02    Right Ignition Systems

    74-01-02-02A    *EDTO Operations Allowed*    74-01-02-02B    *Except EDTO Operations*

Intentionally Blank

**74-01 Ignition Systems**
**74-01-02 -800**
**74-01-02-01 Left Ignition Systems**
**74-01-02-01A EDTO Operations Allowed**

Interval	Installed	Required	Procedure
B	2	1	[E]

One may be inoperative provided:

- a. Ignition Select Switch remains in BOTH position.
  - b. Right ignition systems operate normally.
- 

**74-01 Ignition Systems**
**74-01-02 -800**
**74-01-02-01 Left Ignition Systems**
**74-01-02-01B Except EDTO Operations**

Interval	Installed	Required	Procedure
C	2	0	(O) [E]

Except for EDTO operations, may be inoperative provided:

- a. Ignition Select Switch remains in BOTH position.
  - b. Associated engine right ignition system operates normally.
- 

**OPERATIONS (O)**

Normal operation of the operable ignition system may be confirmed as follows:

1. Set Ignition Select switch to IGN R for starting the associated engine.
2. After engine start, set Ignition Select switch to BOTH.

**74-01 Ignition Systems**
**74-01-02 -800**
**74-01-02-02 Right Ignition Systems**
**74-01-02-02A EDTO Operations Allowed**

Interval	Installed	Required	Procedure
B	2	1	(M) (O) [E]

One may be inoperative provided:

- a. Ignition Select Switch remains in BOTH position.
- b. Left ignition systems operate normally.
- c. Associated engine left igniter is connected to AC Standby Bus by an acceptable configuration.

For -800:

NOTE: Dispatch is not permitted if the ignition failure is due to an EEC right igniter fault (AMM 74-00-00, EEC BITE Igniters Test).

**MAINTENANCE (M)**

For -800:

Right Ignition System(s), connect the LEFT igniter to AC Standby Bus (AMM 74-00-00/901):

1. Open applicable P18-2/P6-2 Panel circuit breakers:
  - A. Engine No. 1 - ENGINE 1 IGNITION RIGHT and ENGINE 1 IGNITION LEFT
  - B. Engine No. 2 - ENGINE 2 IGNITION RIGHT and ENGINE 2 IGNITION LEFT
2. Without automatic ignition:  
Verify that start levers are in the CUTOFF position and ENGINE START switch is in the OFF position
3. With automatic ignition:  
Verify that the start levers are in the CUTOFF position and ENGINE START switch is in the AUTO position.
4. Open fan cowl on the associated engine.

**WARNING: MAKE SURE THE IGNITION EXCITERS ARE DE-ENERGIZED BEFORE WORKING ON THE IGNITION SYSTEM. WAIT FOR A MINIMUM OF FIVE MINUTES TO RELEASE THE HIGH VOLTAGE FROM IGNITION EXCITER.**

5. Disconnect LEFT/RIGHT power supply cables from the LEFT/RIGHT ignition exciter.
6. Connect cables as follows:
  - A. LEFT power supply cable to RIGHT exciter.
  - B. RIGHT power supply cable to LEFT exciter.
7. Close the circuit breakers opened in Step 1.
8. Perform Audible Test of Ignition System - EEC BITE.
9. Close fan cowl on the associated engine.

**OPERATIONS (O)**

For -800:

Normal operation of the operable ignition system may be confirmed as follows:

1. Set the Ignition Select switch to IGN R for starting the associated engine for airplanes not equipped with R913/R914 Power Sense relays.

NOTE: MH B738 fleet is not equipped with R913/R914 Power Sense relays.

2. After engine start, set the Ignition Select switch to BOTH.

- 74-01 Ignition Systems**  
**74-01-02 -800**  
**74-01-02-02 Right Ignition Systems**  
**74-01-02-02B Except EDTO Operations**

Interval	Installed	Required	Procedure
C	2	0	(M) (O) [E]

Except for EDTO operations, may be inoperative provided:

- a. Ignition Select Switch remains in BOTH position.
- b. Associated engine left ignition system operates normally.
- c. Associated engine left igniter is connected to AC Standby Bus by an acceptable configuration.

For -800:

NOTE: Dispatch is not permitted if the ignition failure is due to an EEC right igniter fault (AMM 74-00-00, EEC BITE Igniters Test).

### **MAINTENANCE (M)**

For -800:

Right Ignition System(s), connect the LEFT igniter to AC Standby Bus (AMM 74-00-00/901):

1. Open applicable P18-2/P6-2 Panel circuit breakers:
  - A. Engine No. 1 - ENGINE 1 IGNITION RIGHT and ENGINE 1 IGNITION LEFT
  - B. Engine No. 2 - ENGINE 2 IGNITION RIGHT and ENGINE 2 IGNITION LEFT
2. Without automatic ignition:  
 Verify that start levers are in the CUTOFF position and ENGINE START switch is in the OFF position.
3. With automatic ignition:  
 Verify that the start levers are in the CUTOFF position and ENGINE START switch is in the AUTO position.
4. Open fan cowl on the associated engine.

**WARNING: MAKE SURE THE IGNITION EXCITERS ARE DE-ENERGIZED BEFORE WORKING ON THE IGNITION SYSTEM. WAIT FOR A MINIMUM OF FIVE MINUTES TO RELEASE THE HIGH VOLTAGE FROM IGNITION EXCITER.**

5. Disconnect LEFT/RIGHT power supply cables from the LEFT/RIGHT ignition exciter.
6. Connect cables as follows:
  - A. LEFT power supply cable to RIGHT exciter.
  - B. RIGHT power supply cable to LEFT exciter.
7. Close the circuit breakers opened in Step 1.
8. Perform Audible Test of right Ignition System - EEC BITE.
9. Close fan cowl on the associated engine.

## **OPERATIONS (O)**

### **For -800:**

Normal operation of the operable ignition system may be confirmed as follows:

1. Set the Ignition Select switch to IGN R for starting the associated engine for airplanes not equipped with R913/R914 Power Sense relays

NOTE: MH B738 fleet is not equipped with R913/R914 Power Sense relays.

2. After engine start, set the Ignition Select switch to BOTH.

**Section 2**  
**Table of Contents****ATA 77**  
**Engine Indicating****77-02 N1 Tachometers**

- 77-02-02 -800
- 77-02-02-01 Digital Counters
- 77-02-02-02 Reference N1 Bugs
- 77-02-02-03 Manual Set Indication

**77-03 N2 Tachometers**

- 77-03-03 Digital Counters

**77-04 MOVED (Fuel Flow Meters)****77-05 Vibration Indicating Systems**

- 77-05-02 -800

**77-06 EGT Indicators****77-08 MOVED (Fuel Used Indicators)****77-09 Abnormal Start Indication Systems (-800)**

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Section 2: ATA 77  
Engine Indicating

- 
- 77-02            N1 Tachometers  
77-02-02        -800  
77-02-02-01     Digital Counters

Interval	Installed	Required	Procedure
B	2	0	(O)

Except for EIS/CDS equipped airplanes, may be inoperative provided autothrottle is used for takeoff thrust setting.

NOTE: An indicator with an operating pointer is considered to operate normally.

-----

### **OPERATIONS (O)**

For non-EIS equipped airplanes with actual digital counter(s) inoperative, use the autothrottle system to set and maintain takeoff thrust.

- 
- 77-02            N1 Tachometers  
77-02-02        -800  
77-02-02-02     Reference N1 Bugs

Interval	Installed	Required	Procedure
C	2	1	

- 
- 
- 77-02            N1 Tachometers  
77-02-02        -800  
77-02-02-03     Manual Set Indication

Interval	Installed	Required	Procedure
C	2	0	

**77-03            N2 Tachometers**  
**77-03-03        Digital Counters**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative except for EIS/CDS equipped airplanes.

NOTE: An indicator with an operating pointer is considered to operate normally.

NOTE: N2 indication failures may also affect engine starter auto cutout. Refer to MEL item 80-2.



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Section 2: ATA 77  
Engine Indicating

**77-04                  MOVED (Fuel Flow Meters)**

Interval	Installed	Required	Procedure

Moved to Item 73-05 prior to Revision 30.

-----

**77-05            Vibration Indicating Systems**  
**77-05-02       -800**

Interval	Installed	Required	Procedure
C	2	1	

For -800:

NOTE 1: Operating the airplane with one number 1 bearing vibration sensor deactivated per AMM 77-31-05/201 meets all design flight deck engine vibration Indication (refer to Boeing Service Letter 737-SL-77-016), and therefore MEL relief is not required.



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Section 2: ATA 77  
Engine Indicating

**77-06 EGT Indicators**

Interval	Installed	Required	Procedure
-	2	2	

Must be operative.

**77-08                  MOVED (Fuel Used Indicators)**

Interval	Installed	Required	Procedure

Moved to Item 73-06 prior to Revision 30.

-----



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Section 2: ATA 77  
Engine Indicating

**77-09            Abnormal Start Indication Systems (-800)**

Interval	Installed	Required	Procedure
C	2	0	

---

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**Section 2**  
**Table of Contents**

**ATA 78**  
**Engine Exhaust**

**78-01      Thrust Reverser Systems**

78-01-03    -800

**78-07      REVERSER Lights (Aft Overhead Panel) (-800)**

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**78-01            Thrust Reverser Systems**
**78-01-03        -800**

Interval	Installed	Required	Procedure
B	2	1	(M) (O) [P]

Except for operation in-to (not out-of) KTM, one may be inoperative provided:

- a. Thrust reverser is locked in forward thrust position.
- b. Appropriate performance adjustments are applied.

NOTE 1: Both reversers MUST be serviceable for operations into airports with Landing Distance Available (LDA) less than 6,500 ft (1,981 m), e.g. IPH.

NOTE 2: Thrust reverser credit is not included in MAB wet runway STC for B737-800.

**MAINTENANCE (M)**

1. Deactivate and secure the associated thrust reverser (AMM 78-00-00/901).

NOTE: With the thrust reverser secured closed, one or both sync locks may be inoperative provided the sync lock is verified to be in the locked position.

2. Prevent movement of the reverse thrust handle by any appropriate means (e.g. lockwire the thrust reverser handle to the appropriate forward thrust lever).
3. Advise MOC, FDC and OCC about this defect.

**OPERATIONS (O)**

NOTE: Thrust reverser deactivation per AMM can result in the illumination of the MASTER CAUTION and ENG annunciation when performing a Master Caution recall.

1. Use of reverse thrust is left to the discretion of the Pilot-in-Command. Techniques for controlling the aircraft with unsymmetrical reverse thrust should be familiar to the operating crew if unsymmetrical reverse thrust is to be used.
2. For takeoff performance sources other than MAB B737-800 wet runway STC, thrust reverser credit may normally be included. In such cases, the wet runway/obstacle limited weight and associated V1 must be reduced to account for the inoperative thrust reverser. Refer to the Takeoff and Landing Section of the Flight Planning and Performance Manual for the appropriate penalties.

**78-07 REVERSER Lights (Aft Overhead Panel) (-800)**

Interval	Installed	Required	Procedure
B	2	1	(M) [P]

One may be inoperative provided associated reverser is locked in closed (forward thrust) position.

- - - - -

**MAINTENANCE (M)**

1. Advise MOC, FDC and OCC that performance is affected.
2. Deactivate and secure the affected thrust reverser (see MEL Item 78-01 Maintenance procedure).

**OPERATIONS NOTE**

Use MEL Item 78-01 Operations procedure.

**Section 2**  
**Table of Contents****ATA 79**  
**Engine Oil****79-01      Oil Quantity Indication Systems****79-02      Oil Filter Bypass Warning Systems**

79-02-01    -800 (without Magnetic Chip Detector inspection)

79-02-02    -800 (with Magnetic Chip Detector inspection)

**79-04      Oil Low Pressure Warning Systems**

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**79-01      Oil Quantity Indication Systems**

Interval	Installed	Required	Procedure
B	2	1	(M) [E] [R]

Except for EDTO operations, one may be inoperative provided:

- a. Oil tank is filled to maximum recommended capacity at each refueling.
  - b. There is no evidence of above normal oil consumption or leakage.
  - c. Associated low oil pressure warning system operates normally.
- 

**MAINTENANCE (M)****For -800:**

Service affected oil system and verify that there is no evidence of oil leakage or above normal consumption (AMM 79-00-00/901).

**For All Models:**

1. Within 30 minutes of engine shutdown, replenish engine oil if necessary per AMM 12-13-11
2. Check airplane flight log and maintenance records to make sure oil consumption is within limits.
3. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**79-02      Oil Filter Bypass Warning Systems  
79-02-01    -800 (without Magnetic Chip Detector inspection)**

Interval	Installed	Required	Procedure
C	2	1	(M) [R]

One may be inoperative provided:

- a. Malfunction is in warning system.
  - b. Oil filter is inspected for presence of contaminants once each flight day.
- 

**MAINTENANCE (M)****For -800:**

Verify the cause of malfunction and inspect oil filter for contamination (AMM 79-00-00/901).

1. Remove the scavenge oil filter element (AMM 79-21-06/401).
  2. Visually inspect the scavenge oil filter element. If the filter element is not contaminated, the malfunction is in the bypass warning system.
  3. Visually inspect the scavenge oil filter element for contaminants once each flight day.
  4. (m) Ensure MOC is informed about this MEL repetitive maintenance item.
- 

**79-02      Oil Filter Bypass Warning Systems  
79-02-02    -800 (with Magnetic Chip Detector inspection)**

Interval	Installed	Required	Procedure
C	2	1	(M) [R]

One may be inoperative provided:

- a. Malfunction is in warning system.
  - b. All three Magnetic Chip Detectors are inspected for presence of contaminants once each flight day.
  - c. Oil supply filter pop-out indicator is confirmed not extended once each flight day.
- 

**MAINTENANCE (M)****For -800:**

For dispatch, perform the following verification steps once each flight day:

1. Verify the malfunction is in the bypass warning system:
  - A. Verify presence of fault code 79-n112x on the FMC CDU (AMM 73-21-00/501).
  - B. If fault code 79-n112x is not present, access the CDU INPUT MONITORING / OIL FILTER screen on the FMC CDU and verify FILTER BYPASS state is "CLOGGED", which corresponds to the following FILTER INPUTS displayed on the FMC CDU: Switch 1 (Channels A and B) OPEN, Switch 2 (Channels A and B) CLOSED.
2. Inspect all three Magnetic Chip Detectors for contaminants (AMM 79-00-00/601).



BOEING B737-800  
MINIMUM EQUIPMENT LIST

Section 2: ATA 79  
Engine Oil

3. Verify the oil supply filter pop-out indicator is not extended (AMM 79-00-00/601).
4. If Magnetic Chip Detector inspection reveals no contaminants and oil supply filter pop-out indicator is not extended, then the malfunction is in the warning system.
5. (m) Ensure MOC is informed about this MEL repetitive maintenance item.

**79-04      Oil Low Pressure Warning Systems**

Interval	Installed	Required	Procedure
B	2	0	

May be inoperative provided associated oil pressure, oil temperature and oil quantity indicators operates normally.

- - - - -



**Section 2**  
**Table of Contents**

**ATA 80**  
**Starting**

**80-01 Starter Valve Open Indications**

80-01-02 -800

**80-02 Engine Starter Auto Cutout**

80-02-03 -800

**80-03 Starter Valves**

80-03-03 -800

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**80-01 Starter Valve Open Indications**
**80-01-02 -800**

Interval	Installed	Required	Procedure
C	2	1	(O)

One may be inoperative provided it is checked after engine start that associated valve is closed.

*For -800:*

NOTE 1: The associated PRSOV will be commanded closed when the START VALVE OPEN light is inoperative ON. This will result in loss of the associated engine bleed. MMEL Item 36-5 restrictions for PRSOV inoperative closed must be observed.

**OPERATIONS (O)**

Check that the associated start valve is closed after engine start.

1. Use normal start procedures except for the following:
  - A. Prior to selecting ENGINE START switch to GRD position note the duct pressure.
  - B. For airplanes without automatic ignition, as ENGINE START switch moves to OFF, verify that duct pressure returns to the pre-start value or higher.
  - C. For airplanes with automatic ignition, as ENGINE START switch moves to AUTO, verify that duct pressure increases to the pre-start value or higher.
2. If the duct pressure does not return to the prestart value or higher, dispatch is not allowed. In this case, shutdown the affected engine as follows:
  - A. Position the ISOLATION VALVE switch to CLOSE.
  - B. Position the affected engine BLEED air switch to OFF.
  - C. If the affected engine is the left engine and APU bleed air is being used, position the APU BLEED air switch to OFF.
  - D. Remove ground air source, if being used.
  - E. Set the affected engine start lever in the CUTOFF position.

**80-02            Engine Starter Auto Cutout**  
**80-02-03        -800**

Interval	Installed	Required	Procedure
C	2	0	

May be inoperative provided flight crew manually selects Start Switch to OFF or AUTO at 55% N2.

NOTE: This item provides relief for the ENGINE START switch holding solenoid not releasing at the N2 cutout speed and/or the solenoid not holding the ENGINE START switch in the GRD position.

**OPERATIONS NOTE**

1. Position ENGINE START switch to GRD and hold if required.
2. Without automatic ignition:  
Position ENGINE START switch to OFF at 55% N2 RPM.  
With automatic ignition:  
Position ENGINE START switch to AUTO at 55% N2 RPM.

**80-03            Starter Valves**  
**80-03-03        -800**

Interval	Installed	Required	Procedure
C	2	1	(M) (O) [E]

Except for EDTO operations, one may be inoperative provided:

- a. Associated start valve indication operates normally.
  - b. Manual override start procedures are used.
- 

**MAINTENANCE (M)**

Observe engine ground safety precautions and use Start the Engine Procedure (Manual Override of the Starter Air Valve) (AMM 71-00-00).

**OPERATIONS (O)**

NOTE: Inflight Engine Start: For engines shut down more than one hour, a windmill start may not be possible.

1. Perform normal start procedure with following additions:
  - A. When positioning associated ENGINE START switch to GRD position, instruct ground crew to open start valve.
  - B. Inform ground crew when N2 is rotating.
  - C. Instruct ground crew to close the start valve when indication is 56% N2 RPM.
  - D. Without automatic ignition:  
Verify that the ENGINE START switch moves to OFF.  
With automatic ignition:  
Verify that the ENGINE START switch moves to AUTO.

NOTE: If an inflight engine start is necessary, a cross bleed start will not be available on the associated engine. Ensure that airspeed is sufficient for a windmill start.

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**Table of Contents****Introduction**

- General Notes
- Limitations
- Weight Reductions
- Enroute Diversion Speed Effects
- Enroute Fuel Mileage Effects

**ATA 21 - Air Conditioning****ATA 23 - Communications****ATA 28 - Fuel****ATA 30 - Ice and Rain Protection****ATA 32 - Landing Gear****ATA 33 - Lights****ATA 38 - Water and Waste****ATA 49 - Auxiliary Power Unit****ATA 52 - Doors****ATA 53 - Fuselage****ATA 55 - Stabilizer****ATA 57 - Wings****ATA 78 – Engine Exhaust**

BOEING B737-800  
CONFIGURATION DEVIATION LIST



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## Section 3

## Introduction

**General Notes**

This section contains locations, illustrations and performance information for all of the CDL items from the 737 Airplane Flight Manual (AFM) Appendix Configuration Deviation List (CDL).

**Limitations**

The associated limitations must be listed on a placard affixed in the cockpit in clear view of the pilot-in-command and other appropriate crew members.

Operation with those missing parts requiring a reduction of VMO/MMO is permitted only when the airplane has the maximum airspeed limit indication and the Mach airspeed warning system programmed for the altitude/speed schedule specified for the applicable missing part.

The pilot in command will be notified of each operation with missing parts by listing the missing parts in the flight or dispatch release. The operator will list in the aircraft logbook an appropriate notation covering the missing parts on each flight. If an additional part is lost in flight the airplane may not depart the airport at which it landed following this event until it again complies with CDL limitations. This does not preclude the issuance of a ferry permit to allow the airplane to be flown to a point where the necessary repairs or replacements can be made.

No more than one part for any one sub-system in the CDL may be missing unless specifically designated combinations are indicated. Unless otherwise specified, parts from different sub-systems may be missing.

The CDL does not provide information regarding dispatch with missing fasteners. Refer to Structural Repair Manual (SRM) Section 51-10-05 for conditions and limitations which permit operations with fasteners.

**Weight Reductions**

The performance penalties are cumulative unless specifically designated penalties for combination of missing parts are indicated. Where performance penalties are listed as negligible, no more than three negligible items may be missing without taking further penalty. For each missing item more than three, reduce the takeoff, landing and enroute climb limits by 100 pounds (46 kilograms). Where performance penalties are listed as no penalty, any accumulative number of items listed as no penalty may be missing without further penalty.

---

**Enroute Diversion Speed Effects**

The enroute climb weight penalties listed are based on operating speeds that approximate the maximum lift-to-drag ratio speed. To account for the difference in level off altitude when operating at other speeds, multiply the enroute climb weight penalty listed by the following appropriate factor:

Diversion Speed	Factor
LRC	1.5
280 KIAS	3.9
290 KIAS	4.5
310 KIAS	5.4
320 KIAS	6.4
330 KIAS	7.5

---

**Enroute Fuel Mileage Effects**

The drag effects of many 737 CDL items are so small that the changes in flight planning fuel are negligible. For items that have enroute climb weight penalties listed, an increase in flight planning fuel of 0.15% per 100 lb (46 kg) of enroute climb weight penalty (non-factored penalty) may be used to account for the drag increase.

**Table of Contents****21-51-01 Ram Air Inlet Lip Cover Panel****21-51-02 Ram Air inlet Lip Seal To Front Spar**

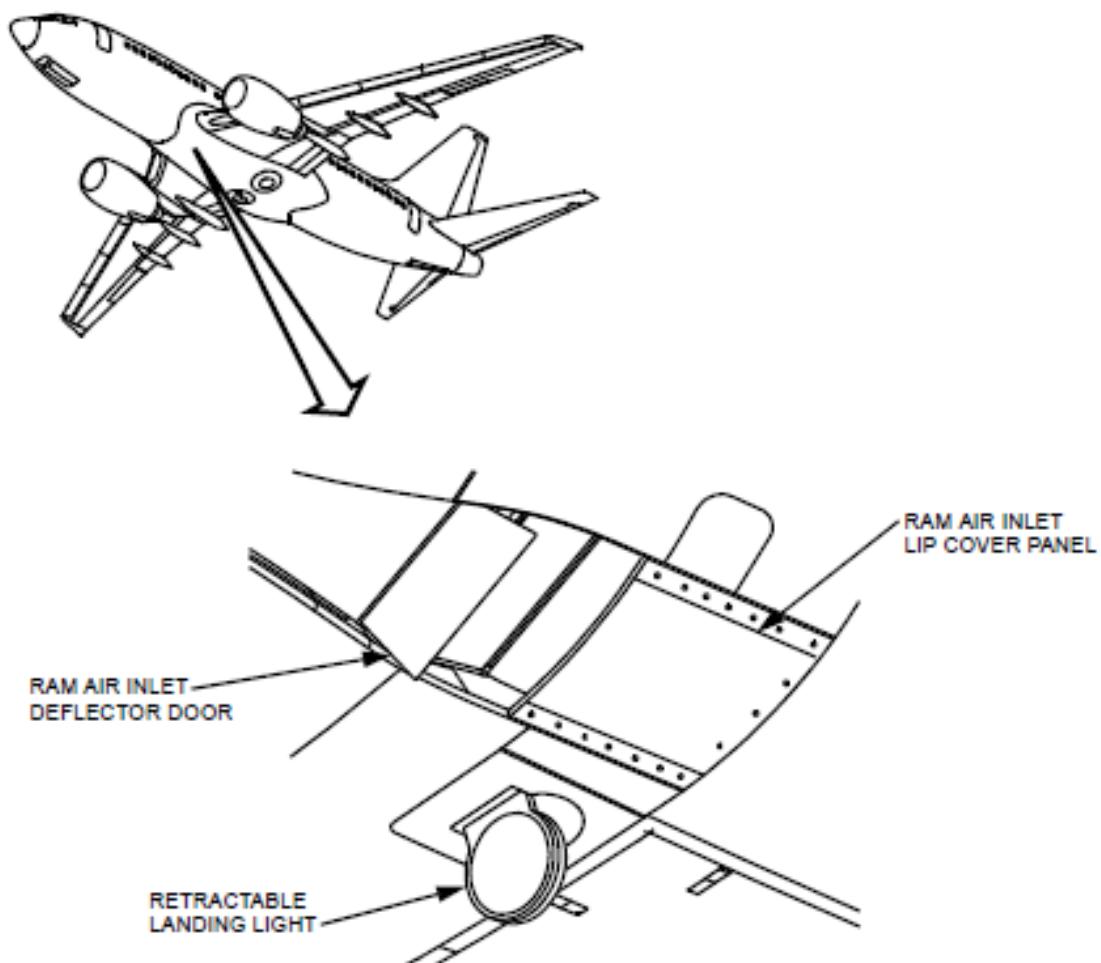
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**21-51-01 Ram Air Inlet Lip Cover Panel**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing panel:

Number Installed	Takeoff & Landing	Enroute Climb
One or both may be missing.		
2	Negligible penalty	Negligible penalty

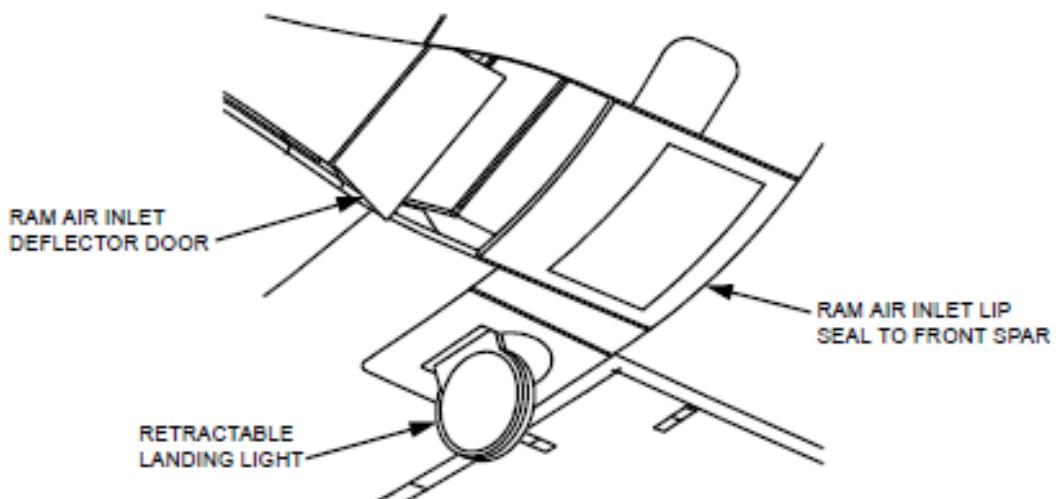
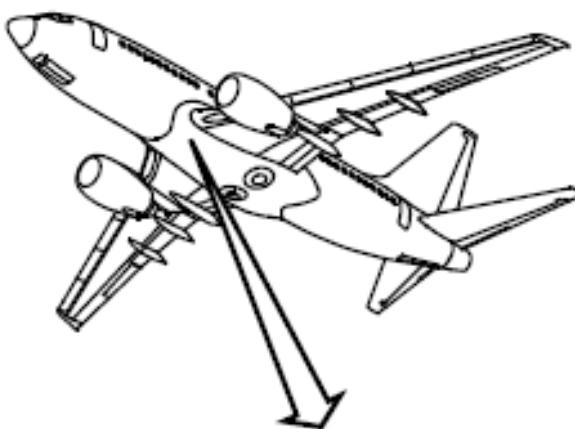


**21-51-02 Ram Air Inlet Lip Seal To Front Spar**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing seal:

Number Installed	Takeoff & Landing	Enroute Climb
One or both may be missing.		
2	Negligible penalty	Negligible penalty



**Table of Contents****23-60-01 Static Dischargers****23-61-01 DME and Marker Beacon Antennas**

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**23-60-01      Static Dischargers**

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

**All Models Without Winglets:**

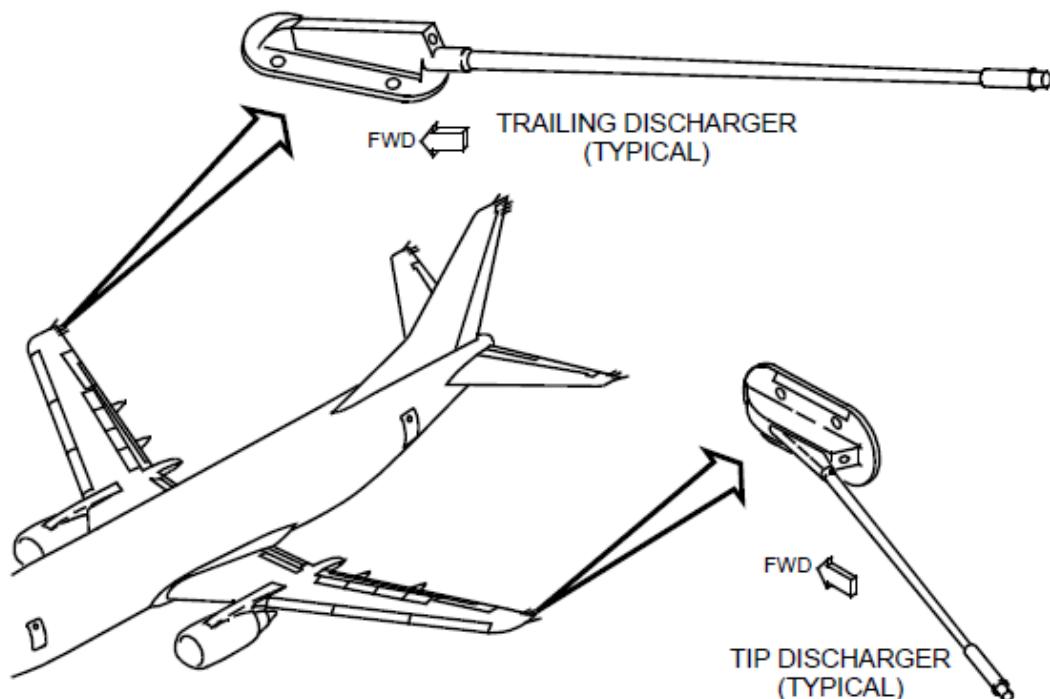
A maximum of 6 static dischargers may be missing. At least two dischargers are required on each wing and horizontal stabilizer and one is required on the vertical stabilizer. Where there are only two on a given surface, one of the two must be in the tip position or in the outermost trailing position.

18	No penalty	No penalty
----	------------	------------

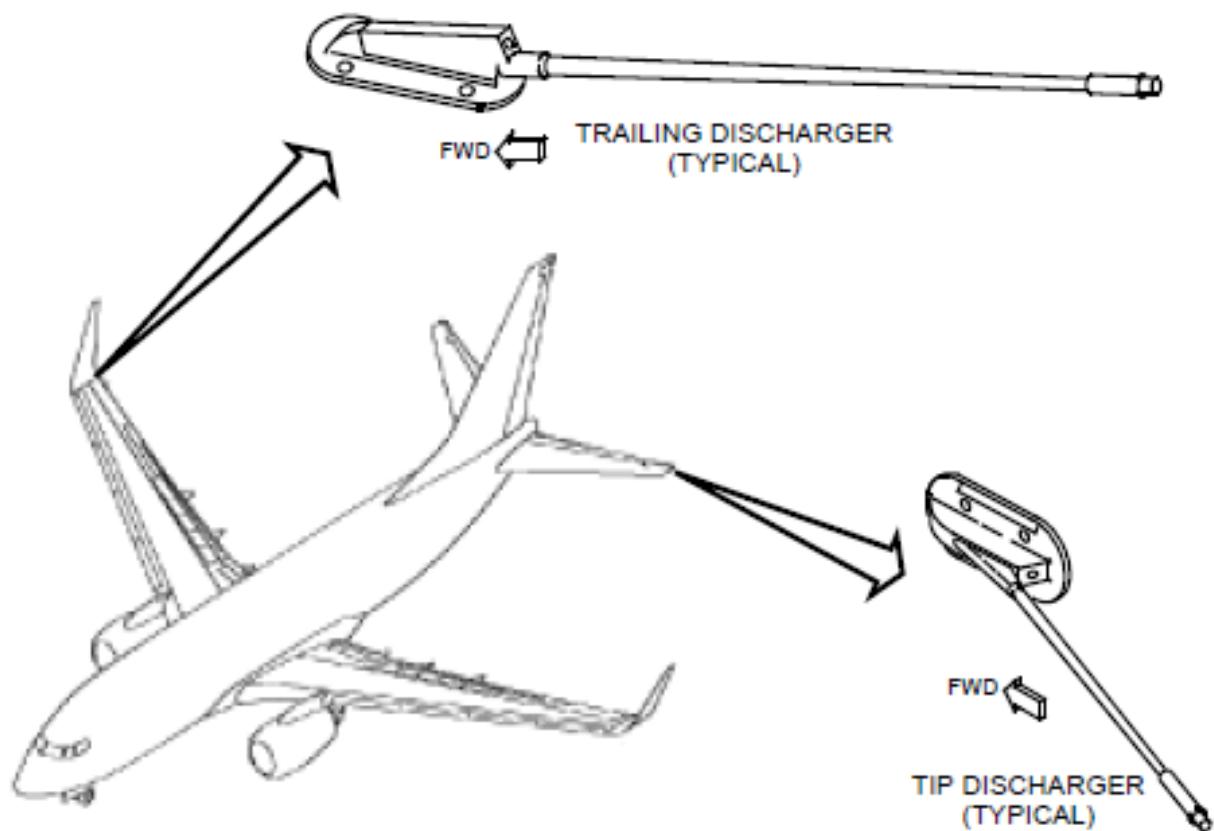
**For -600/-700/-800/-900/-900ER With Winglets:**

A maximum of 2 dischargers may be missing. At least one discharger is required on each wing. Where there is only one discharger on a wing, it must be in the outermost trailing position. At least 2 dischargers are required on each horizontal stabilizer. Where there are only two dischargers on a horizontal stabilizer, one of the two must be in the tip position or in the outermost trailing position. At least two dischargers are required on the vertical stabilizer. Where there are only two dischargers on the vertical stabilizer, one must be in the top-most position.

14	No penalty	No penalty
----	------------	------------

**All Models Without Winglets:**


For -600/-700/-800/-900/-900ER With Winglets:



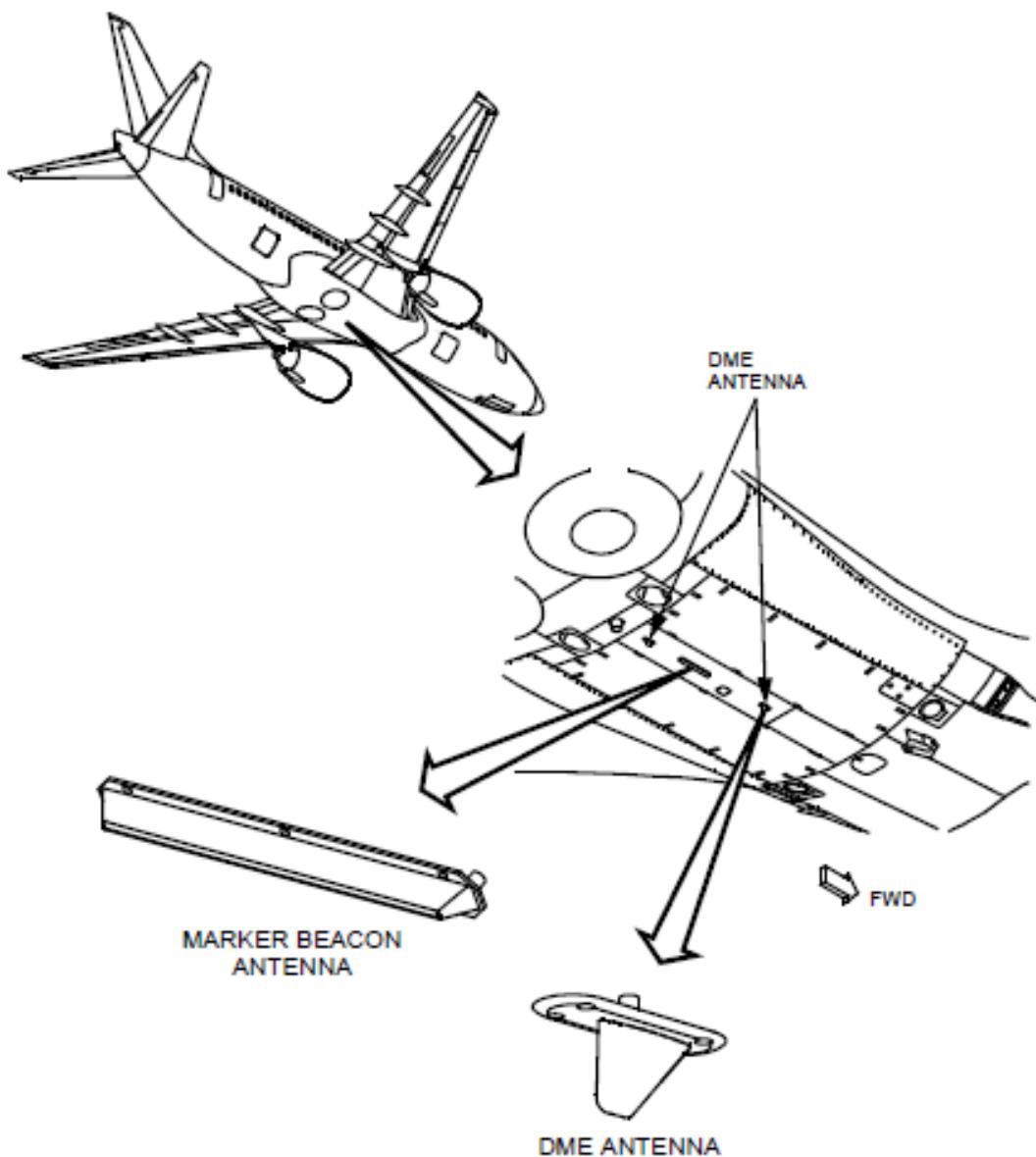
**23-61-01 DME and Marker Beacon Antennas**

For -600/-700/-800/-900/-900ER:

NOTE: For a missing Distance Measuring Equipment Antenna, dispatch under MMEL item 34-13, DME Systems. For a missing Marker Beacon antenna, dispatch under MMEL item 34-14, Marker Beacon Receiver System.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
Any number may be missing.		
3	No penalty	No penalty



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## **30-10-01 TAI Telescoping Duct Door (Trombone Fairing Panel)**

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**30-10-01 TAI Telescoping Duct Door (Trombone Fairing Panel)**

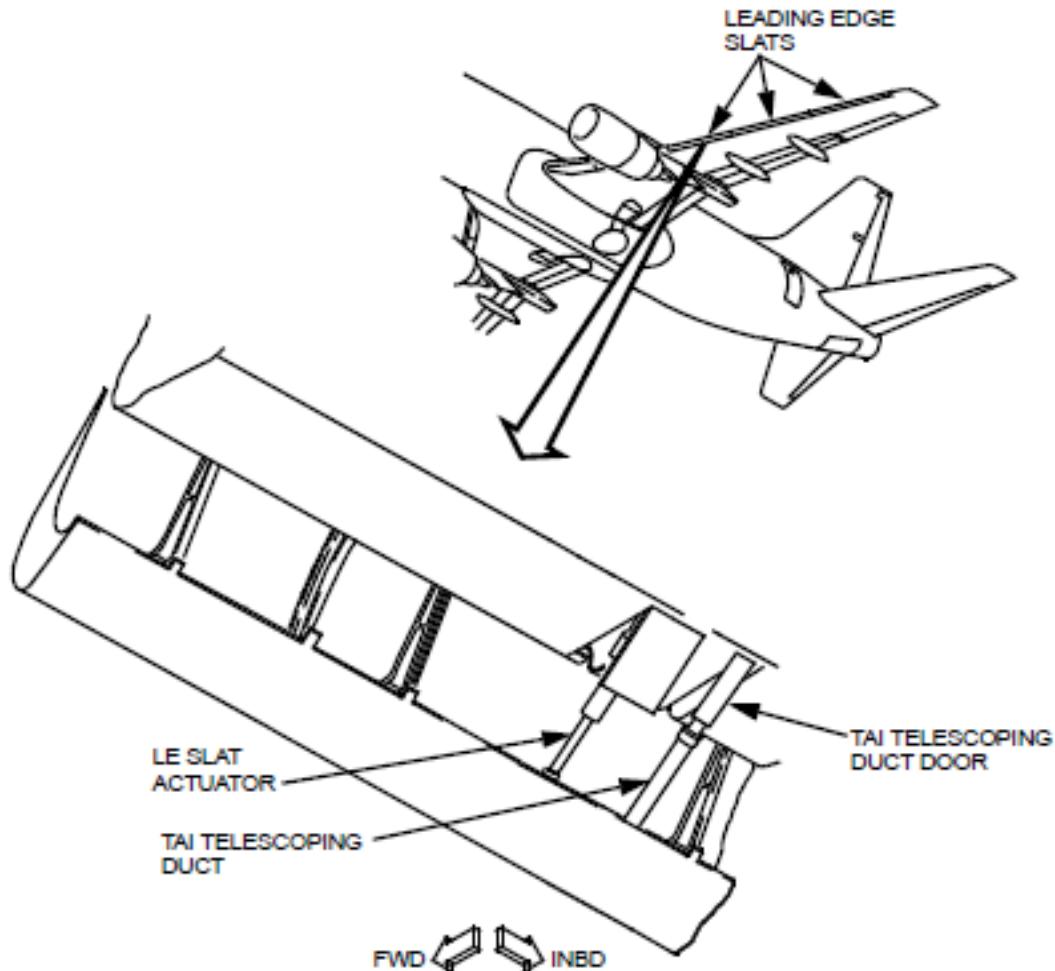
Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

For -600/-700/-800/-900:

May be missing from slats 2, 3, 6 and 7. Performance penalty is for each missing item. The TAI fairing on slats 4 and 5 may not be missing.

6	Negligible penalty	Negligible penalty
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Section 3

ATA 32

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- 32-10-02      Main Gear Doors - Outer**
- 32-10-03      Main Gear Doors – Center and Inner**
- 32-10-04      Main Gear Doors - Inner**
- 32-10-05      Nose Gear Door Seal**
- 32-10-06      MLG Door Seal Assembly on Wheel Well**
- 32-10-07      Main Gear Wheel Well Blade Seal Assemblies**
- 32-10-08      Main Gear Wheel Well Ski Jump Fairings**
- 32-41-01      Main Gear Outboard Wheel Speed Transducer Cover And Hubcap Fairing Assembly**
- 32-41-02      Main Gear Outboard Wheel Hubcap Fairing Assembly**
- 32-41-03      Main Gear Outboard Wheel Hubcap Center Cover Assemblies**

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**32-10-02 Main Gear Doors - Outer**

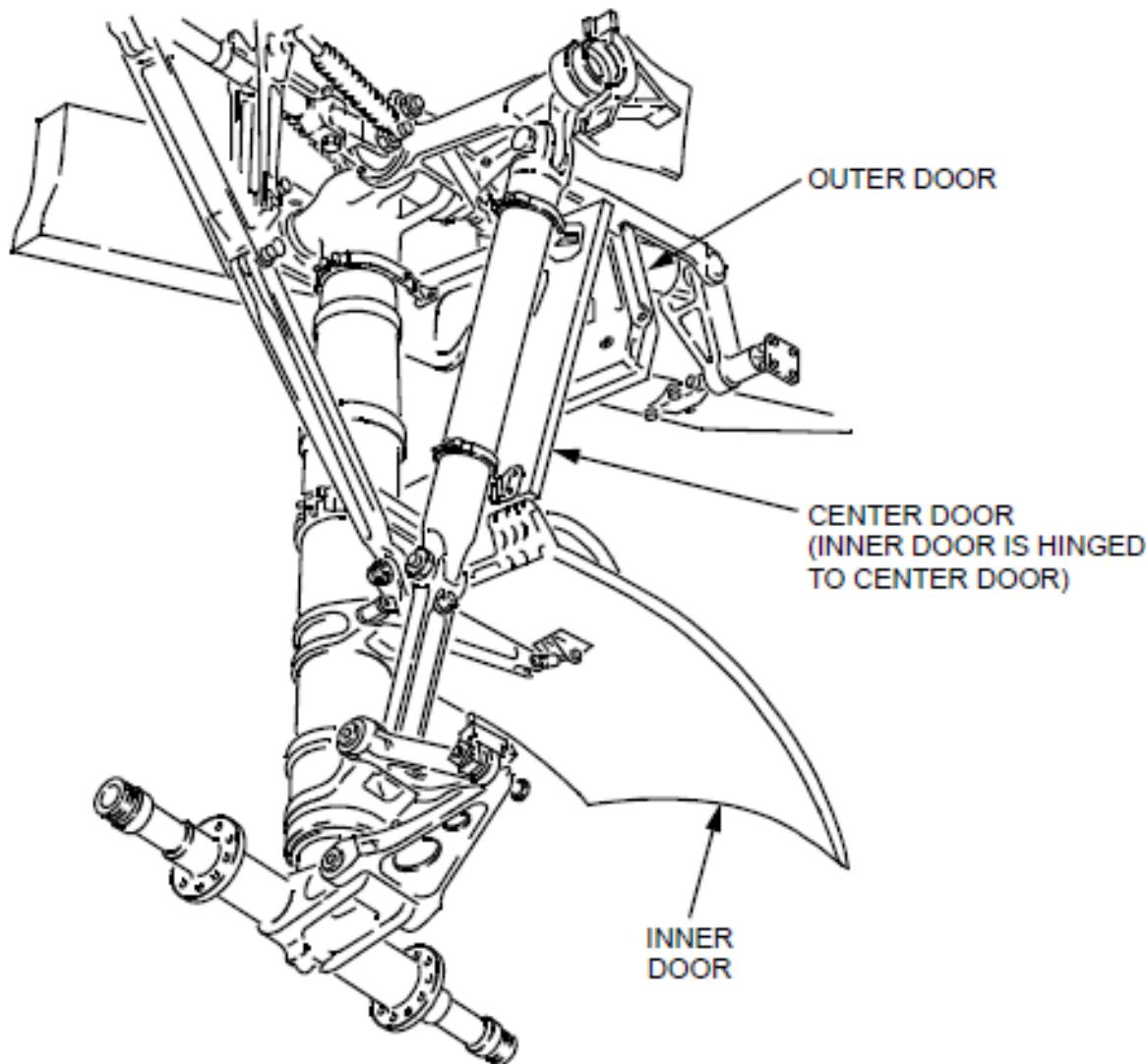
Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

For -600/-700/-800:

One or both may be missing.

2	Negligible penalty	Negligible penalty
---	--------------------	--------------------



**32-10-03 Main Gear Doors - Center and Inner****For -600/-700/-800/-900:**

NOTE 2: When the center and inner doors are removed, specific hardware must be left in place to secure a bracket. See AMM 32-13-11/401.

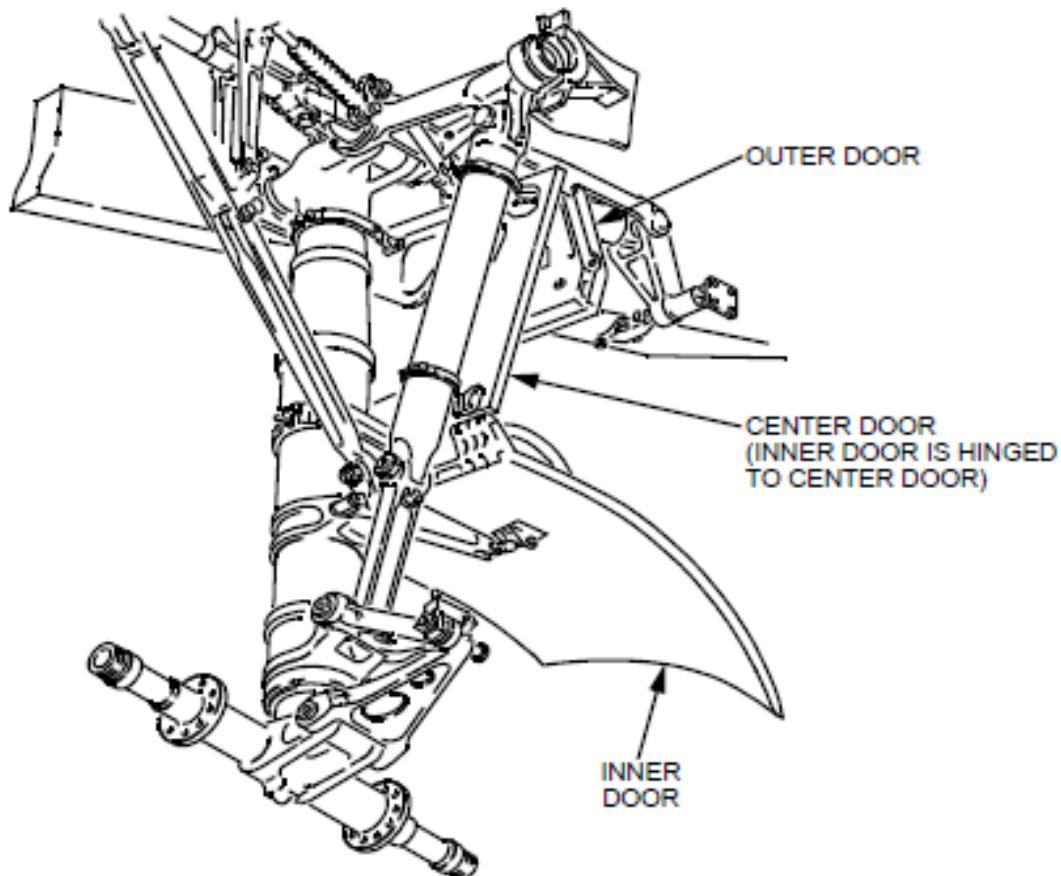
Performance limited weights are reduced by the following for each combination:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

**For -600/-700/-800:**

One or both combinations of center and inner doors may be missing.

4	200 lb (91 kg)	350 lb (160 kg)
---	----------------	-----------------



**32-10-04 Main Gear Doors - Inner**
**For -600/-700/-800/-900:**

NOTE 2: When the inner door is removed, ensure all hardware, bonding jumper and tie rod is removed. See AMM Task 32-13-11-000-804.

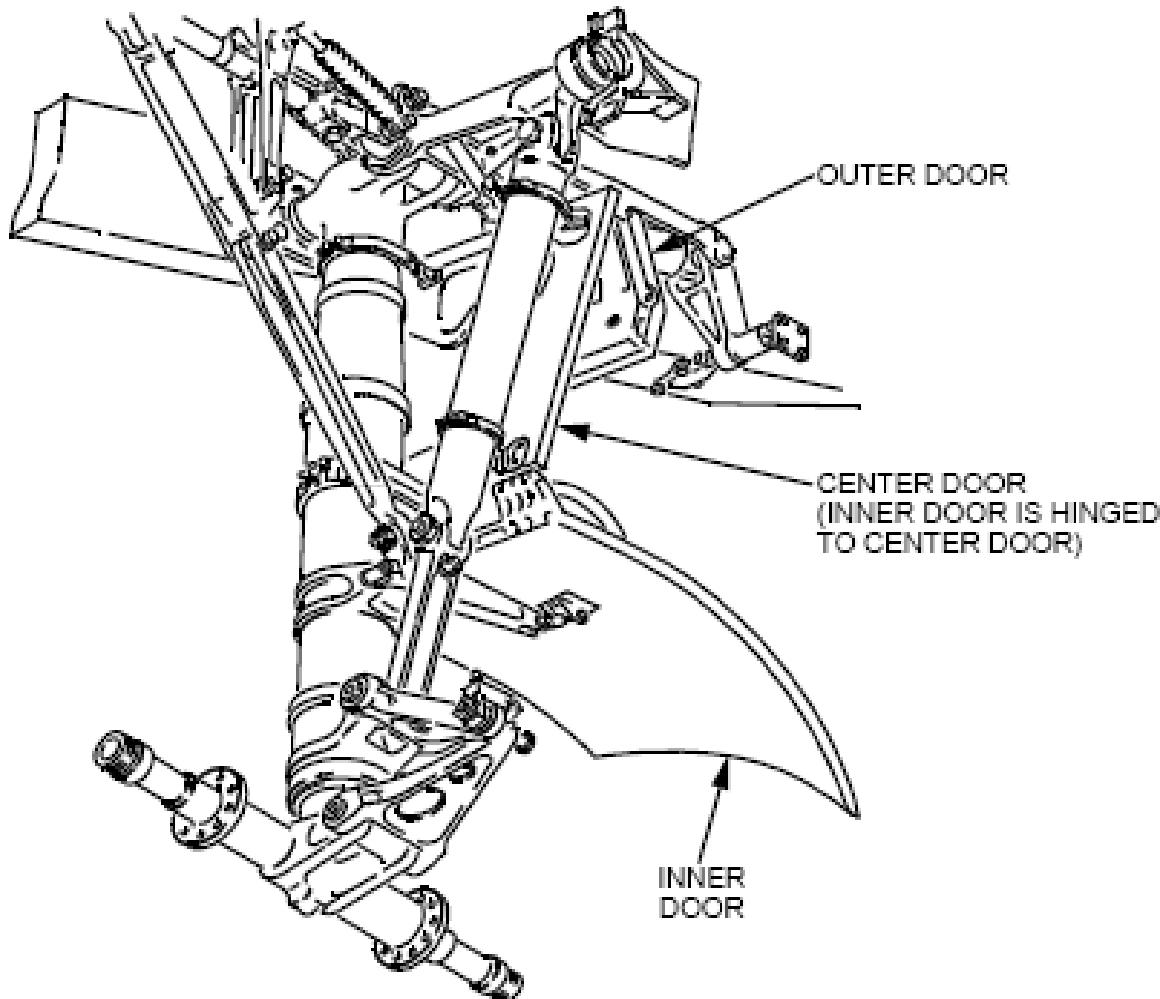
Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

**For -600/-700/-800:**

One or both may be missing.

2	Negligible	150 lb (68 kg)
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**32-10-05      Nose Gear Door Seal**

For -600/-700/-800/-900/-900ER:

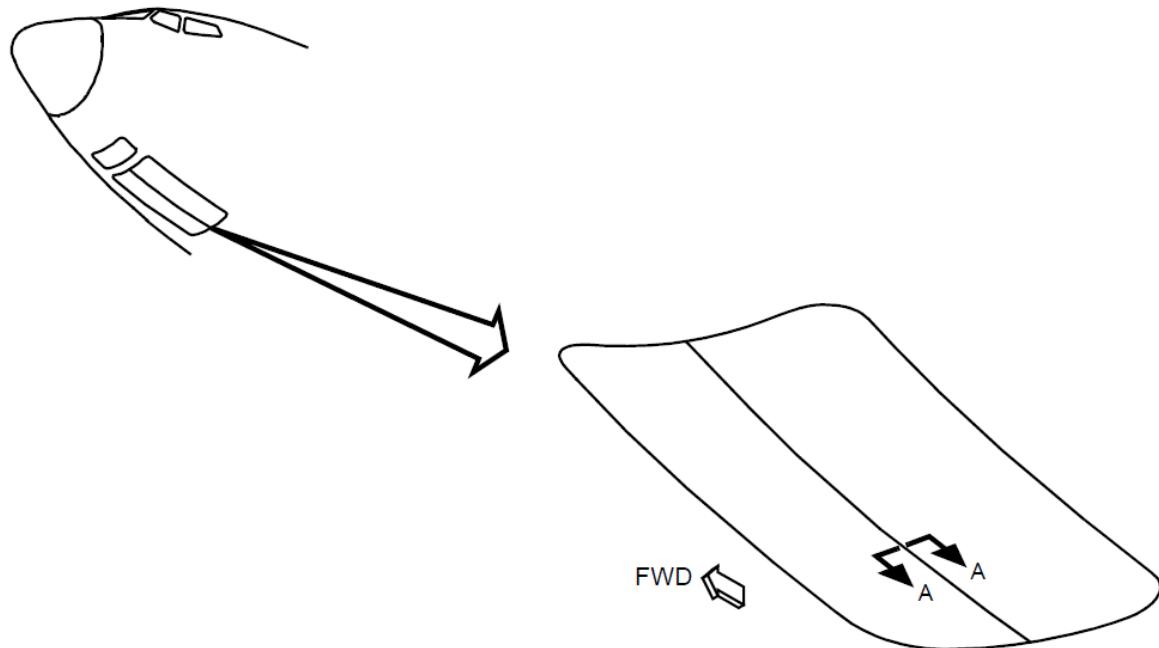
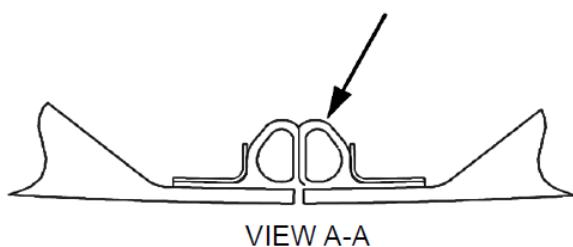
Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Center line seals may be missing.

1	Negligible penalty	Negligible penalty
---	--------------------	--------------------

NOTE: Two bulb seals make up this entry. They are treated as one seal for the purpose of this CDL item. Missing one or both of the seals results in the same penalty.

CENTER LINE  
DOOR SEAL

**32-10-06 MLG Door Seal Assembly on Wheel Well**

**For -600/-700/-800/-900/-900ER:**

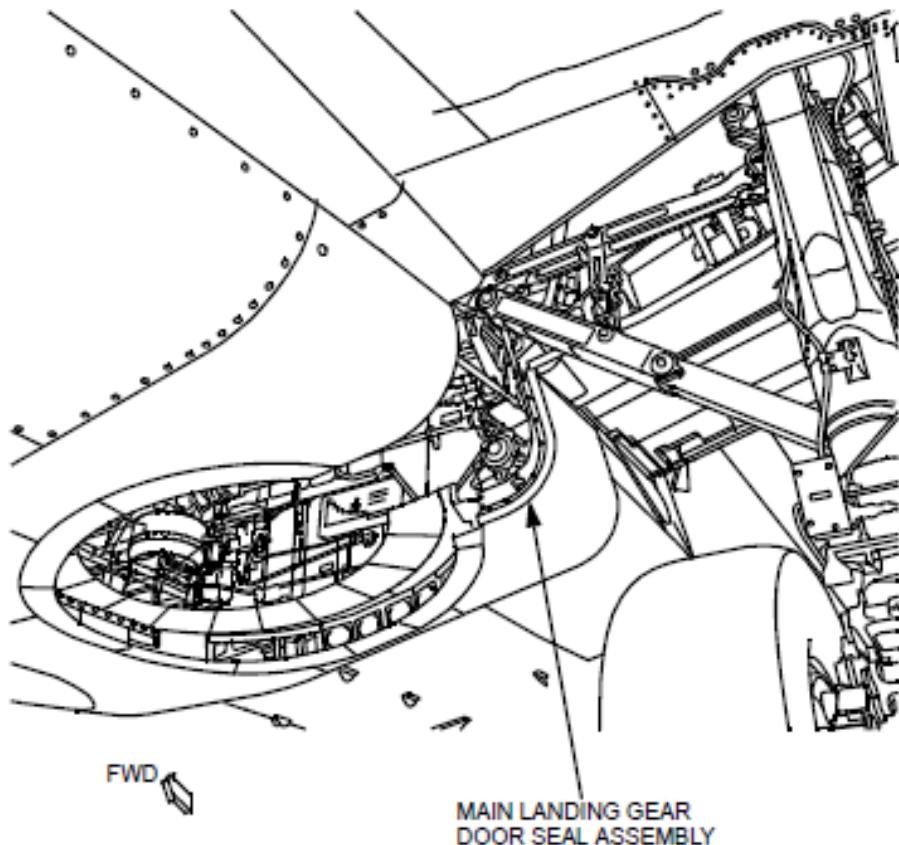
Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

**For -600/-700/-800:**

Any combination of seals and retainers may be missing.

4	300 lb (136 kg)	550 lb (250 kg)
---	-----------------	-----------------

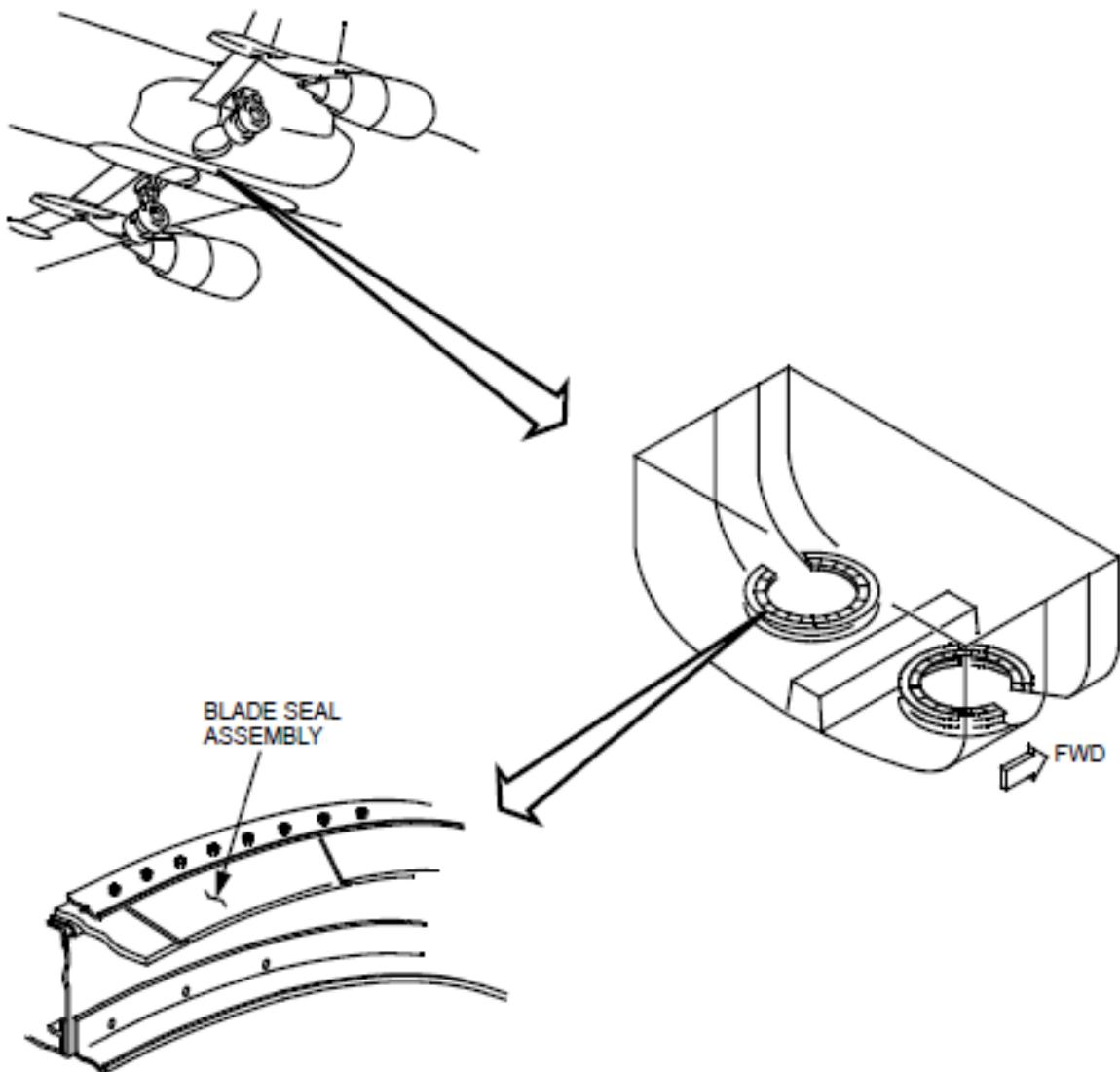


**32-10-07 Main Gear Wheel Well Blade Seal Assemblies**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing seal segment:

Number Installed	Takeoff & Landing	Enroute Climb
Any number of seals may be missing.		
32	Negligible penalty	Negligible penalty

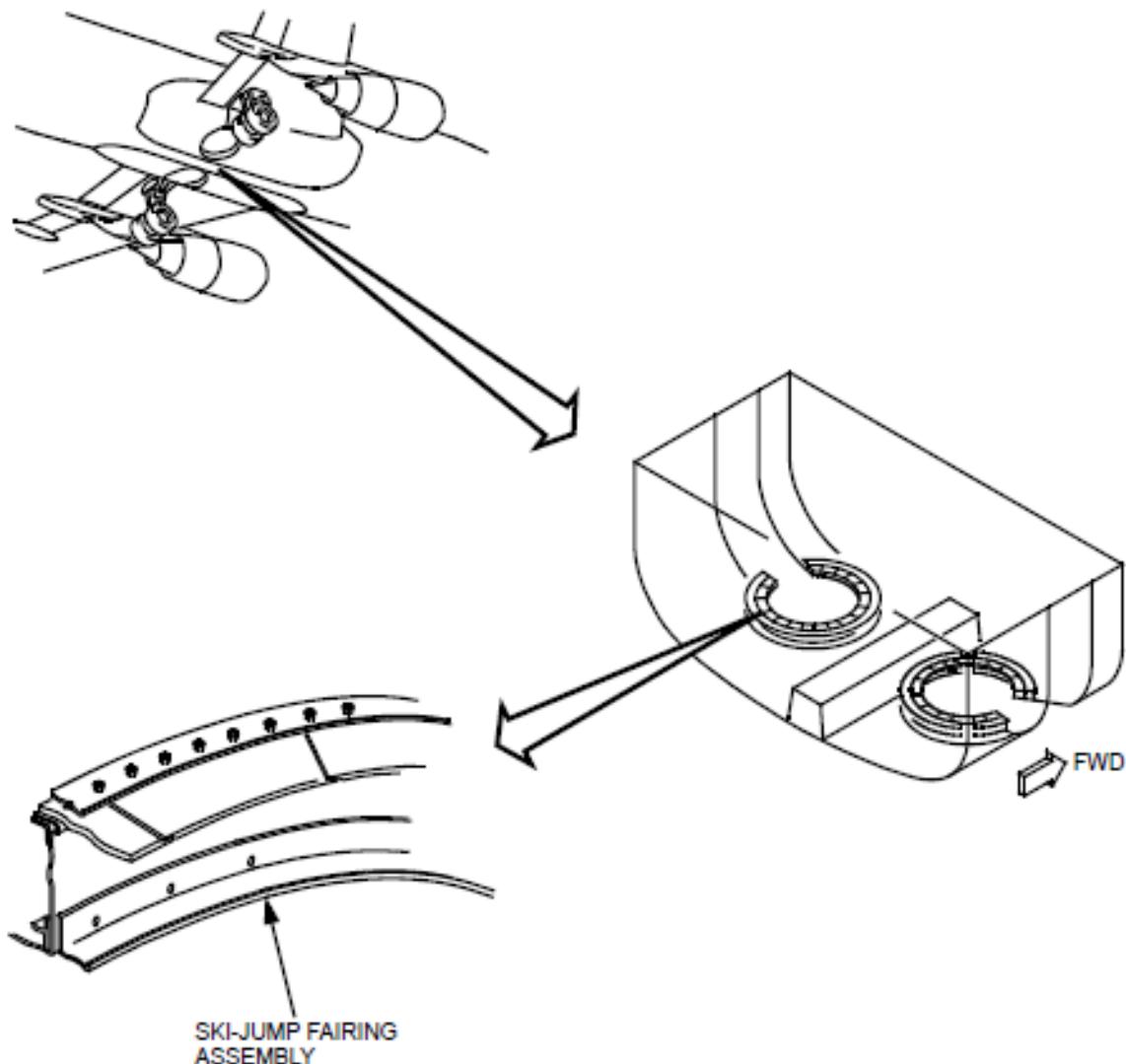


**32-10-08 Main Gear Wheel Well Ski Jump Fairings**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing fairing segment:

Number Installed	Takeoff & Landing	Enroute Climb
Any number of fairing segments may be missing.		
16	Negligible penalty	Negligible penalty



**32-41-02 Main Gear Outboard Wheel Hubcap Fairing Assembly**

For -600/-700/-800/-900ER:

NOTE 3: Outboard antiskid will be inoperative when respective wheel speed transducer is uncovered (hubcap assembly missing). Outboard antiskid channel must be deactivated (refer to DDG Item 2-32-02). Antiskid inoperative performance and procedures must be used.

Performance limited weights are reduced by the following for each missing item:

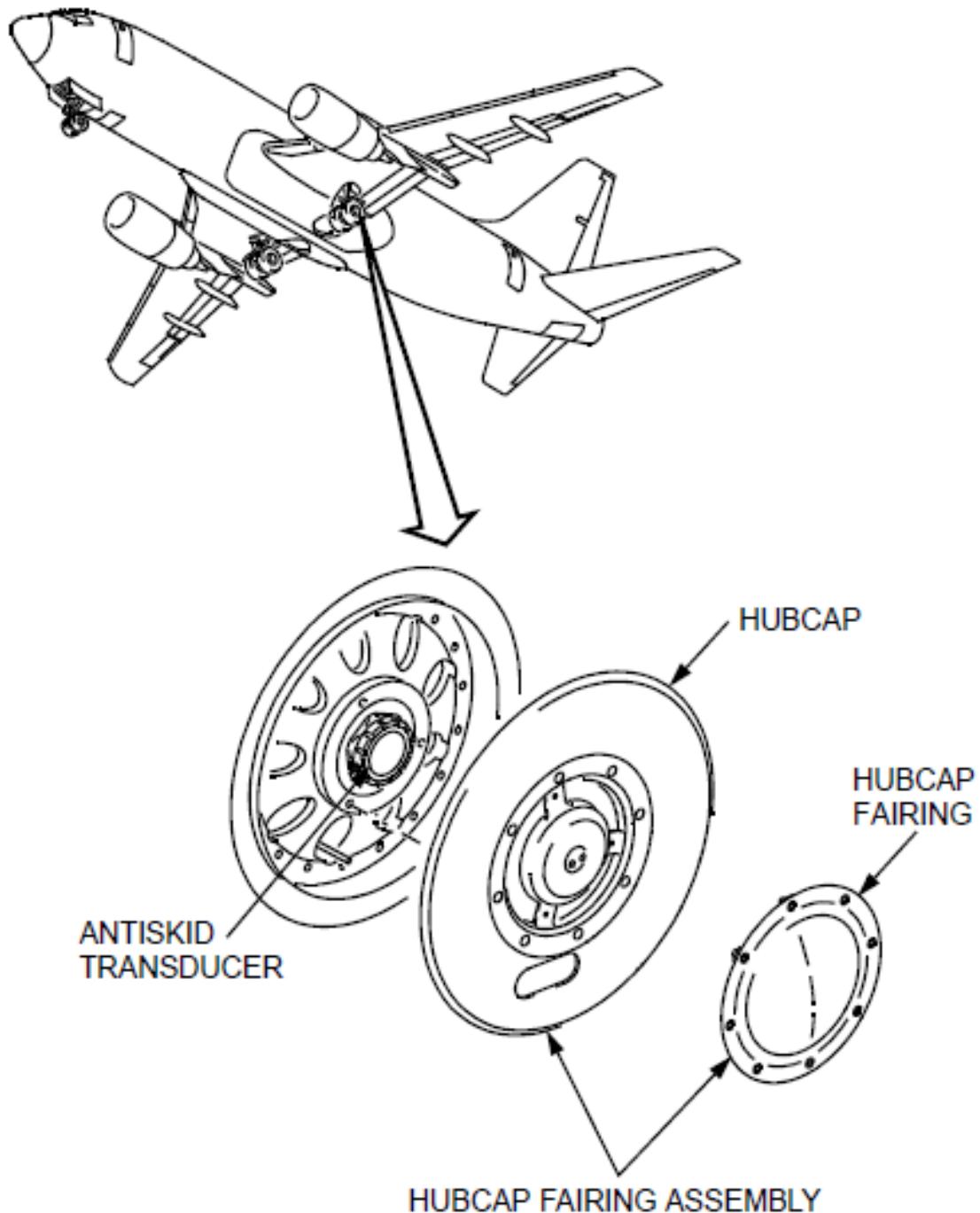
Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

For -600/-700/-800:

One or both may be missing.

2	Negligible	150 lb (68 kg)
---	------------	----------------

For -600/-700/-800/-900/-900ER:



**32-41-03      Main Gear Outboard Wheel Hubcap Fairing Center Covers**

Performance limited weights are reduced by the following:

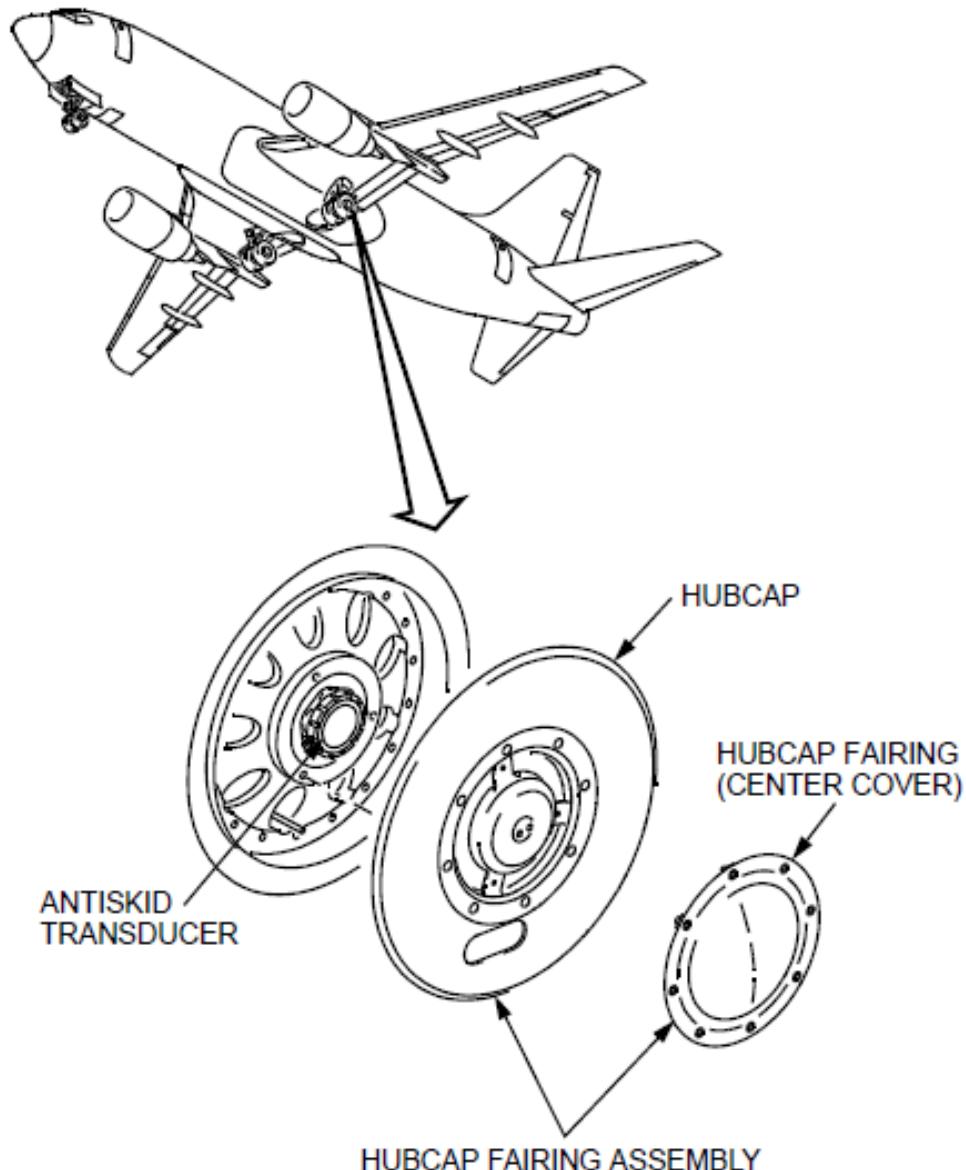
Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

**For -600/-700/-800/-900/-900ER:**

One or both may be missing. Performance penalty is for each missing item.

2	Negligible penalty	Negligible penalty
---	--------------------	--------------------

**For -600/-700/-800/-900/-900ER:**



## Section 3

## ATA 33

## Table of Contents

- 33-40-01      Retractable Landing Light**
- 33-40-02      Nose Gear Taxi Light**
- 33-40-03      Wing Illumination Light Covers**
- 33-43-01      Wing Tip Tail Light Lenses**
- 33-43-02      Tail Strobe Light Lens**
- 33-43-03      Beacon Lights (Upper and Lower)**
- 33-51-01      External Emergency Light Covers**

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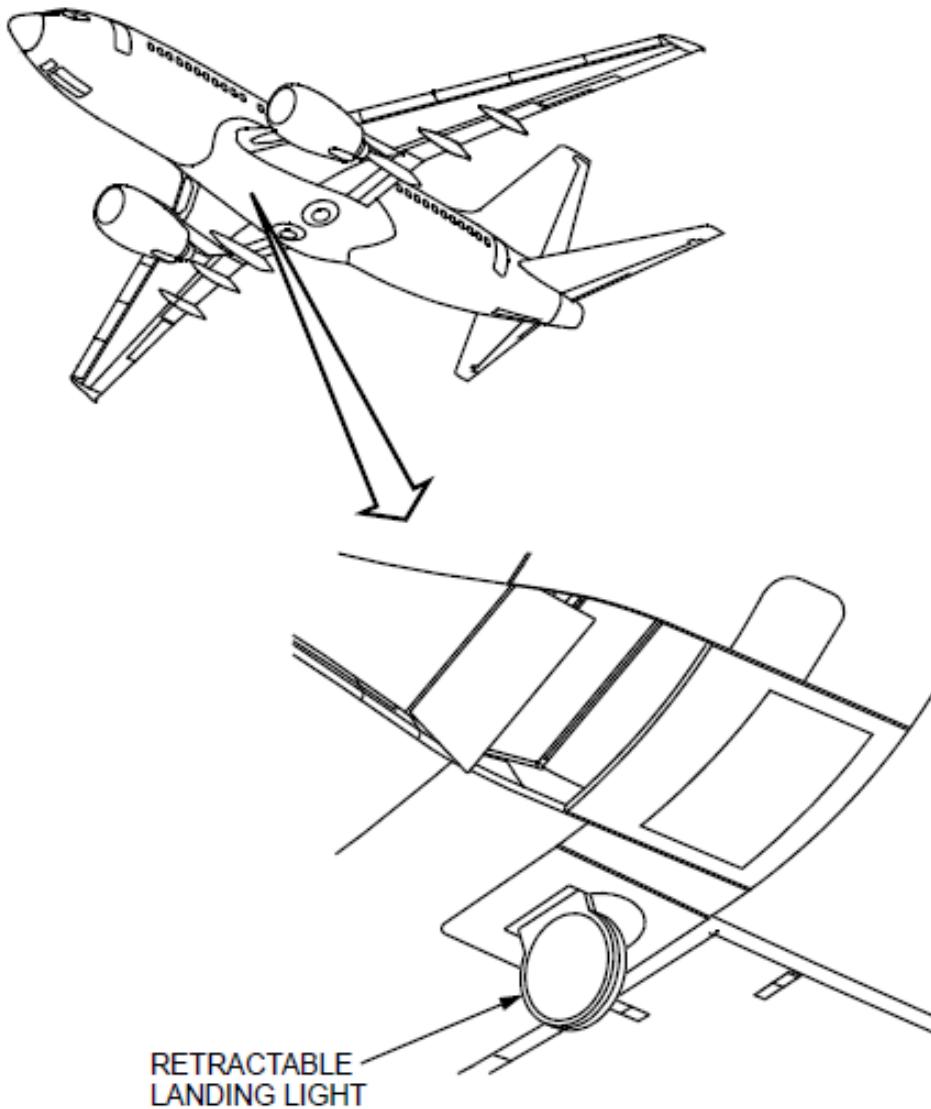
**33-40-01      Retractable Landing Light**

**NOTE:** Light housing must remain intact. The retractable landing light(s) may be inoperative in the extended position (Reference MMEL Item 33-8). Fuel burn increase is 1.0 percent for each extended light.

Performance limited weights are reduced by the following for each missing item.

Number Installed	Takeoff & Landing	Enroute Climb
One or both lenses or bulbs may be missing.		
2	Negligible penalty	Negligible penalty

For -600/-700/-800/-900/-900ER:

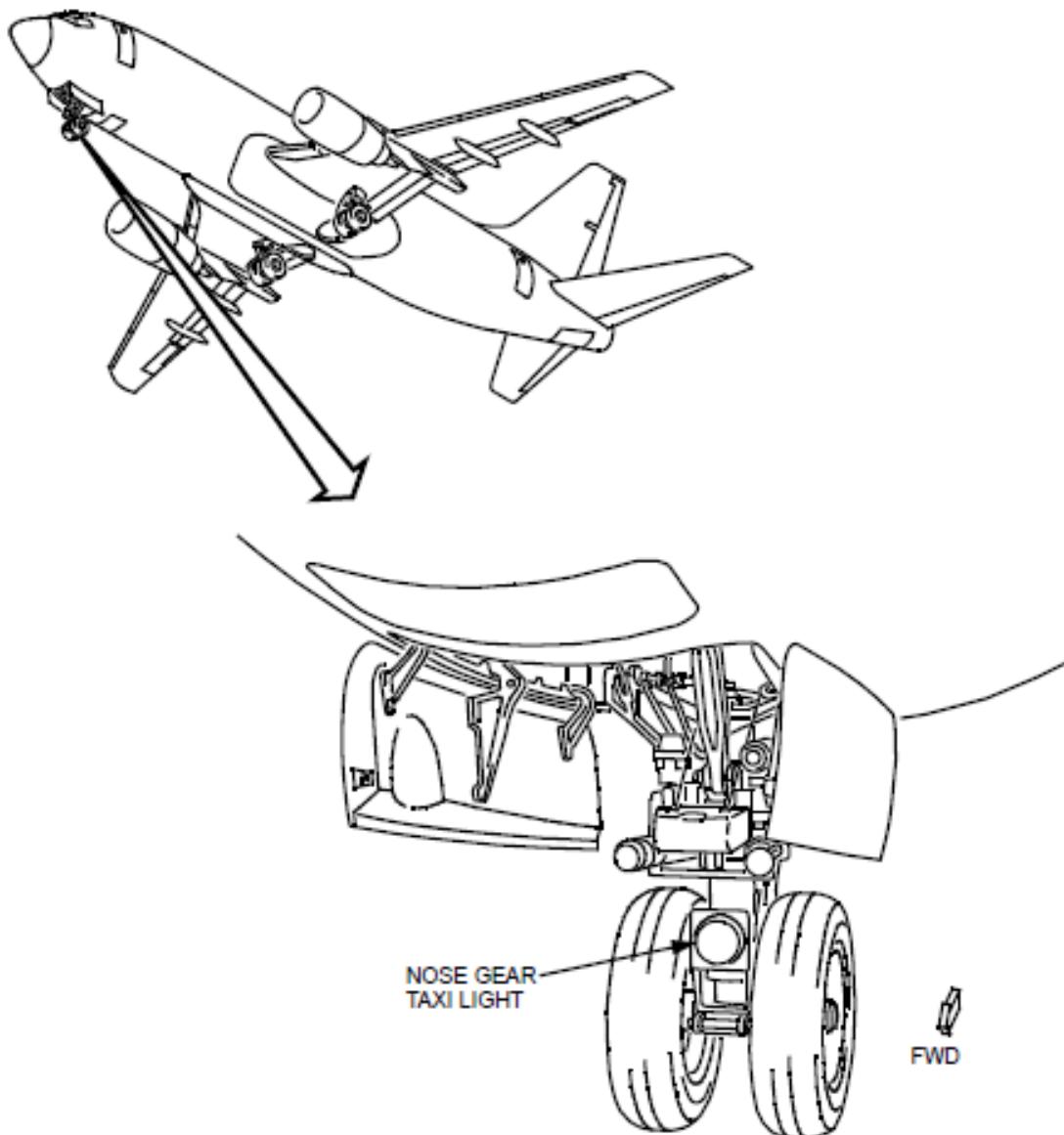


**33-40-02      Nose Gear Taxi Light**

NOTE: For nose gear taxi light inoperative, refer to MMEL Item 33-9.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
May be missing with no penalty.		
1	No penalty	No penalty



**33-40-03 Wing Illumination Light Covers**

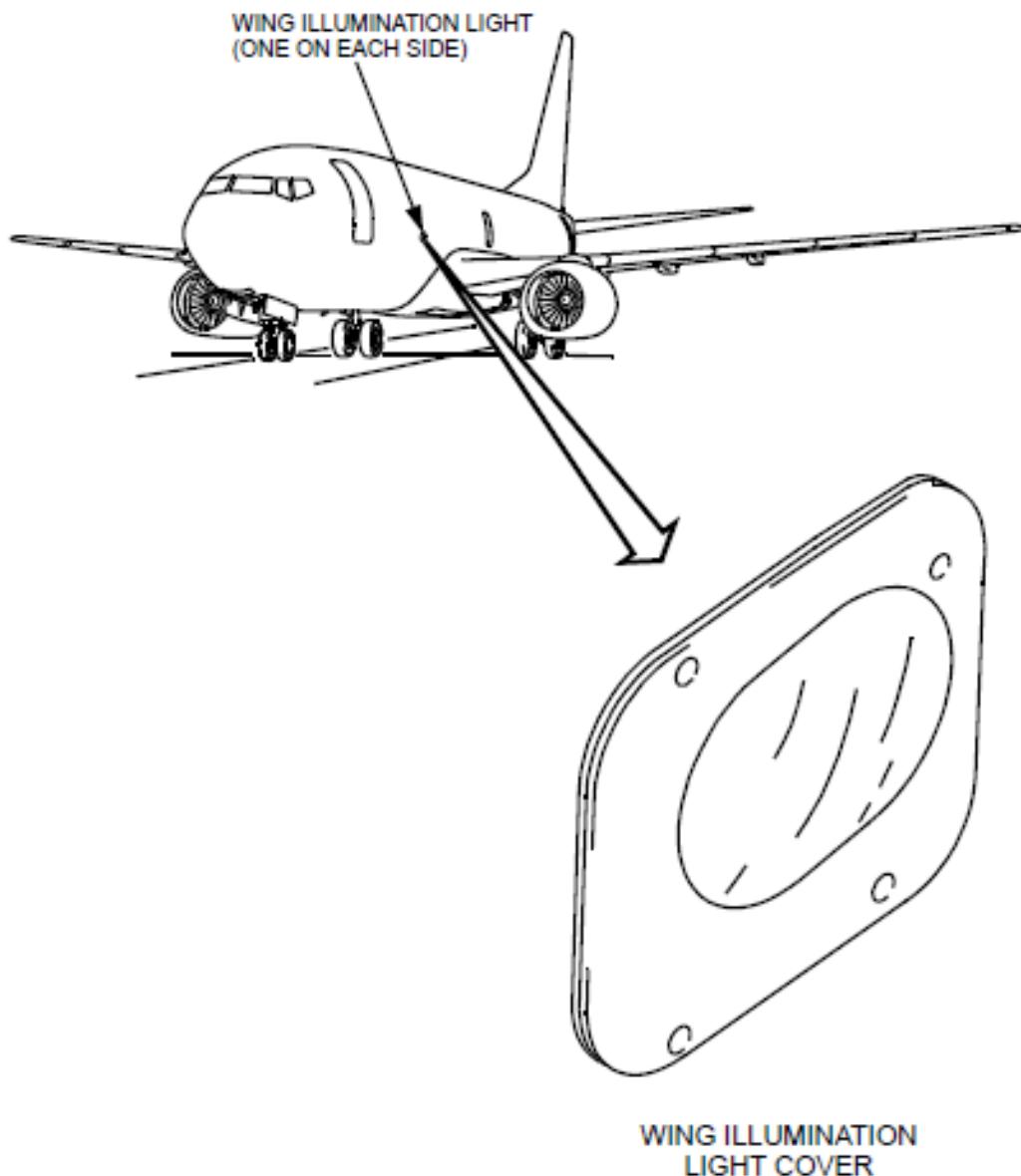
NOTE: Refer to MMEL Item 33-07 for inoperative wing illumination lights.

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Any number or combination of items 33-40-3, -4 may be missing.

2	Negligible penalty	Negligible penalty
---	--------------------	--------------------



**33-43-01 Wing Tip Tail Light Lenses**

NOTE: Refer to MMEL item 33-11 for inoperative wing tip position lights

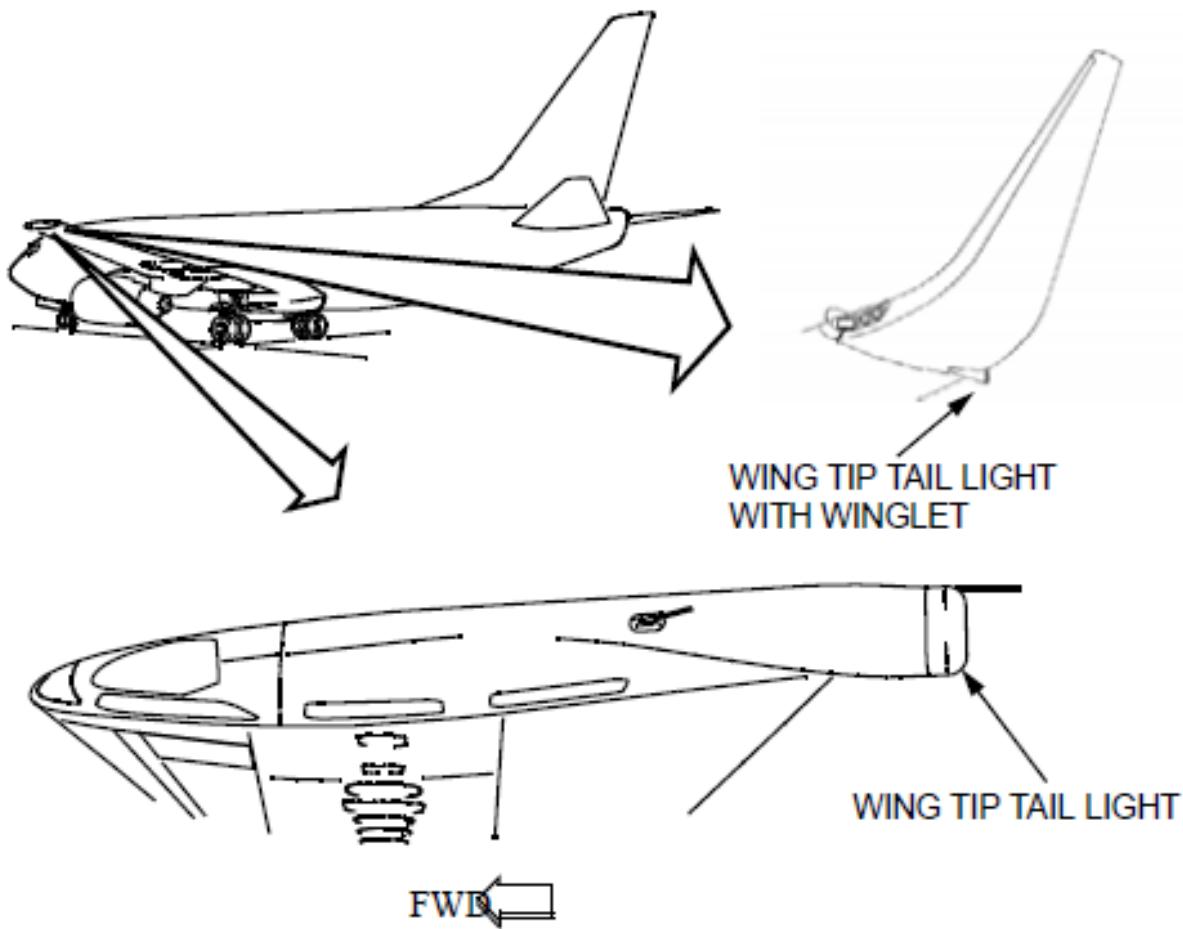
Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

One or both may be missing with no penalty for each missing item. Cover the open hole with speed tape or similar temporary cover.

2	No penalty	No penalty
---	------------	------------

For -600/-700/-800/-900/-900ER:



**33-43-02 Tail Strobe Light Lens**

NOTE 1: When the Tail Strobe Light Lens is missing, the flash tube (lamp), if intact, may be damaged during subsequent flights from air forces.

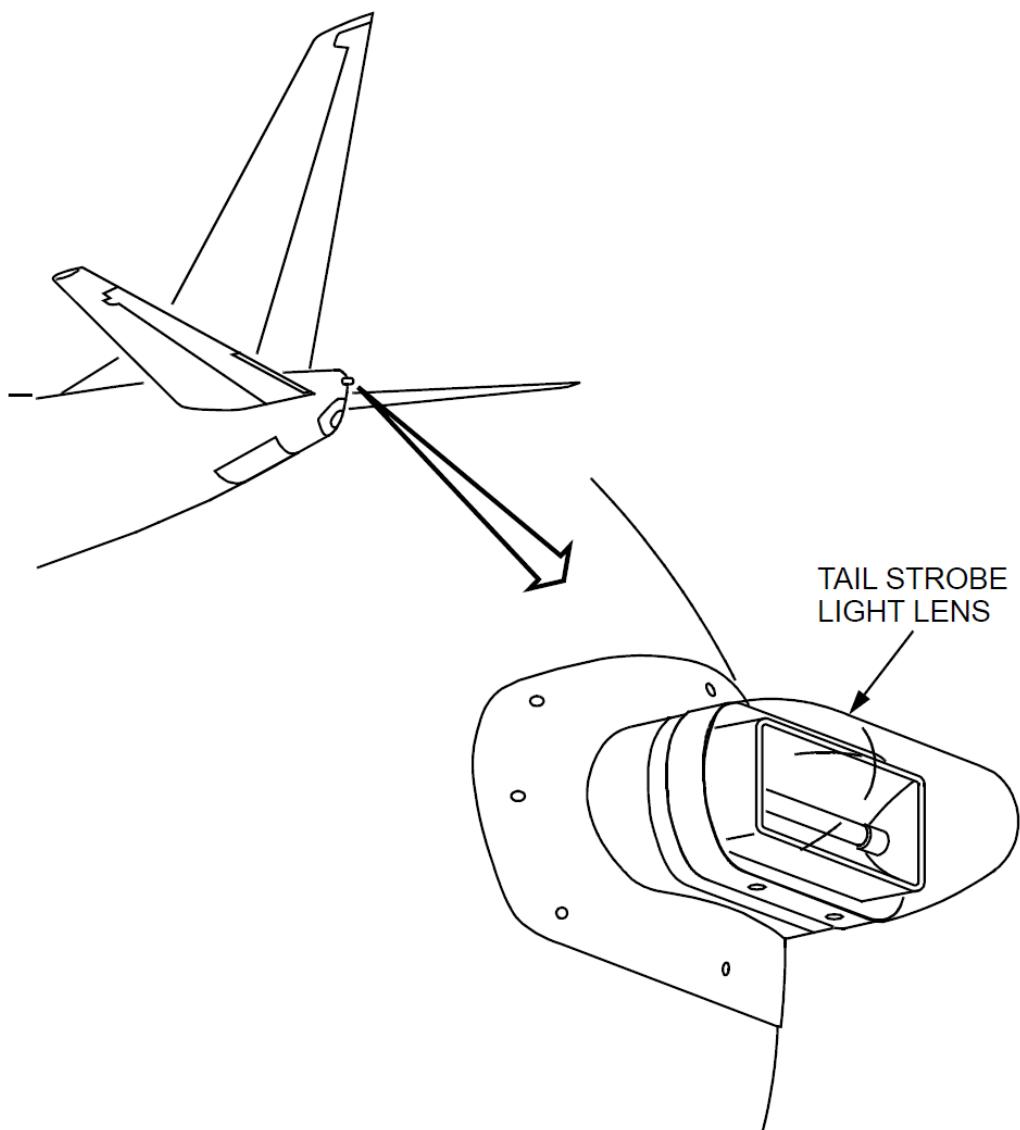
NOTE 2: Refer to MMEL item 33-05 for inoperative strobe lights.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

May be missing with no penalty for each missing item. Cover the open hole with speed tape or similar temporary cover.

1	No penalty	No penalty
---	------------	------------



**33-43-03      Beacon Lights (Upper and Lower)**

NOTE 1: When the Beacon Light Lens is missing, the flash tube (lamp), if intact, may be damaged during subsequent flights from air forces.

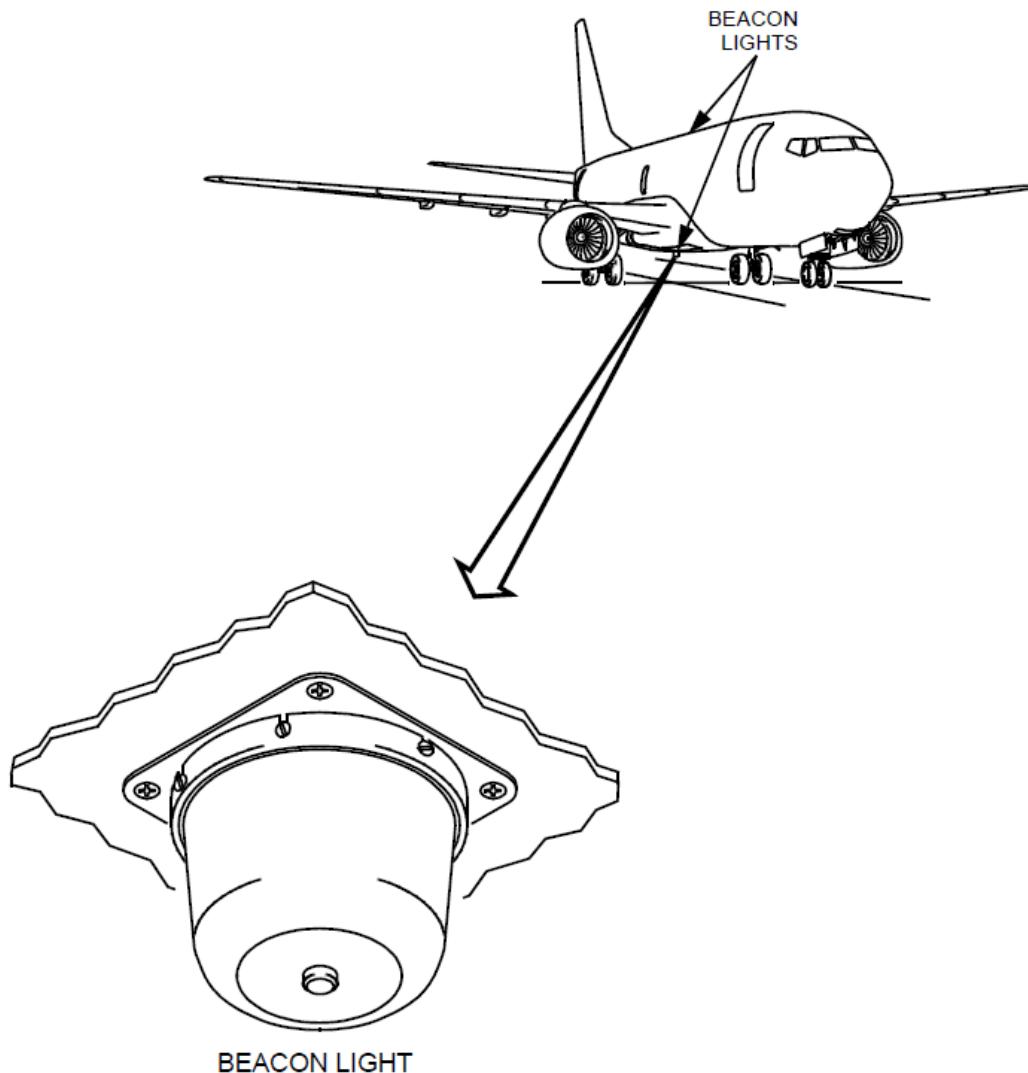
NOTE 2: Refer to MMEL item 33-06 for inoperative anti-collision beacon lights.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

One or both may be missing with no penalty for each missing item. Cover the open hole with a temporary cover.

2	No penalty	No penalty
---	------------	------------



**33-51-01      External Emergency Light Covers**

NOTE: Refer to MMEL item 33-14 for inoperative exterior emergency lights.

Performance limited weights are reduced by the following for each missing item:

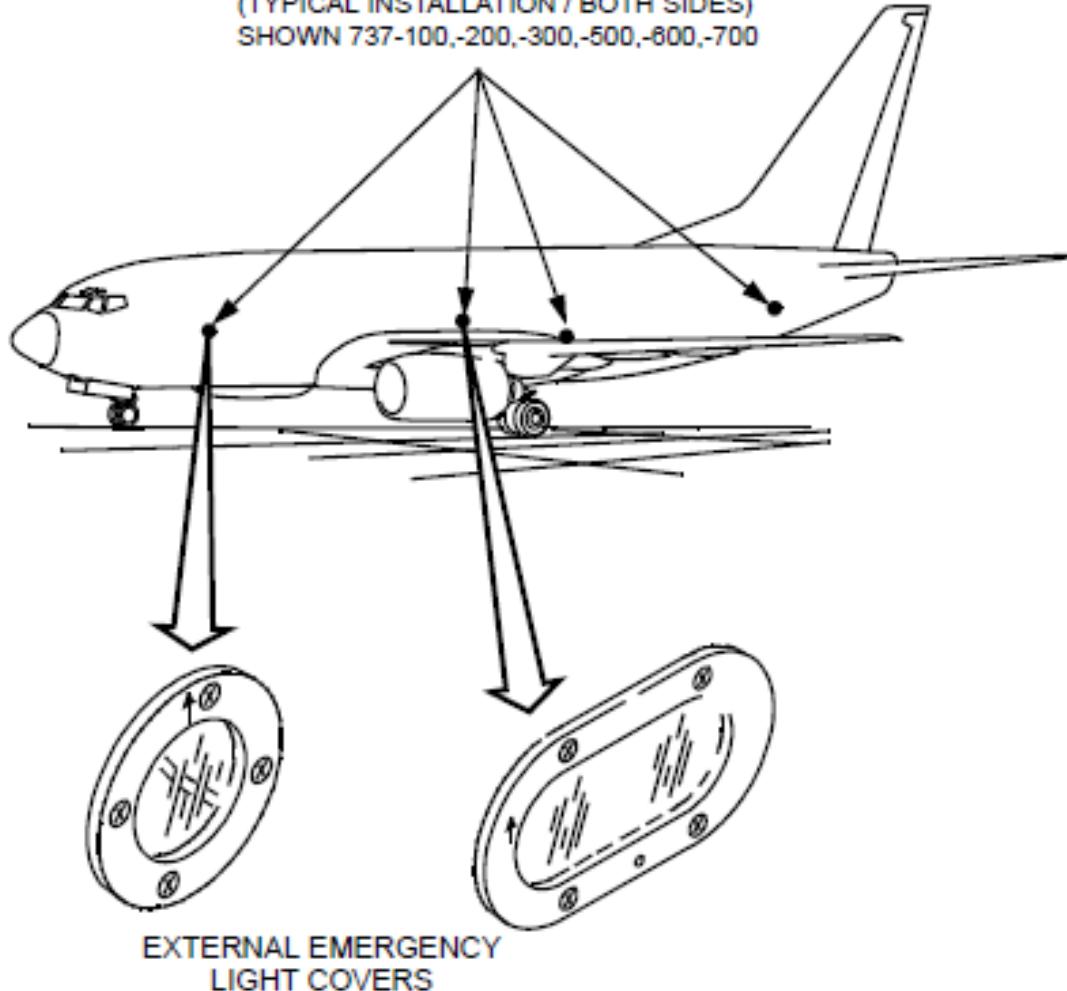
Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

For -800/-900:

Any number may be missing.

10	Negligible penalty	Negligible penalty
----	--------------------	--------------------

EXTERNAL EMERGENCY LIGHT COVERS  
 (TYPICAL INSTALLATION / BOTH SIDES)  
 SHOWN 737-100,-200,-300,-500,-600,-700



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Section 3

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#### 38-17-01 Aft Gray Water Drain Mast

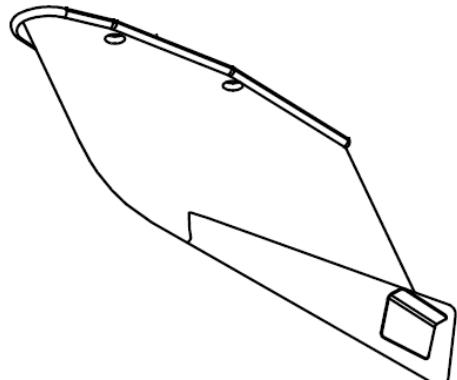
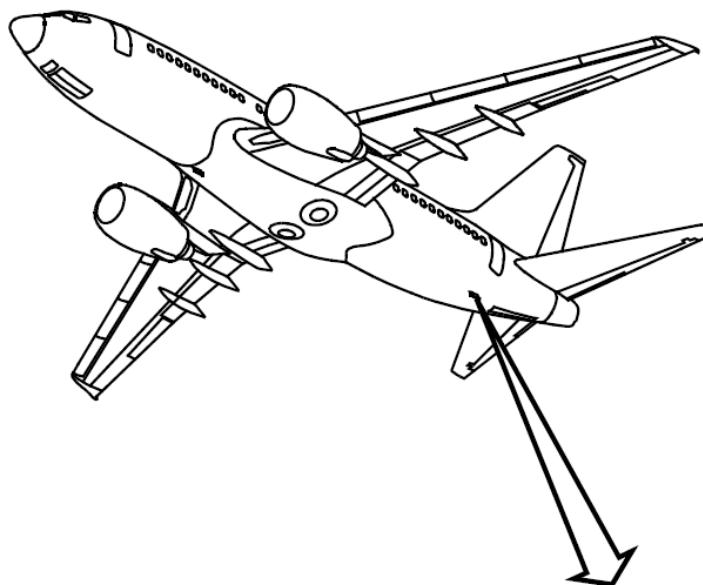
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**38-17-01      Aft Gray Water Drain Mast**

NOTE: With the Aft Gray Water Drain Mast missing, the Drain Mast Heater will not operate, refer to MMEL item 30-19.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
May be missing. Cover the hole opened in the fuselage.		
1	No penalty	No penalty



AFT GRAY WATER  
DRAIN MAST

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**Table of Contents****49-15-01 APU Inlet Flow Deflector**

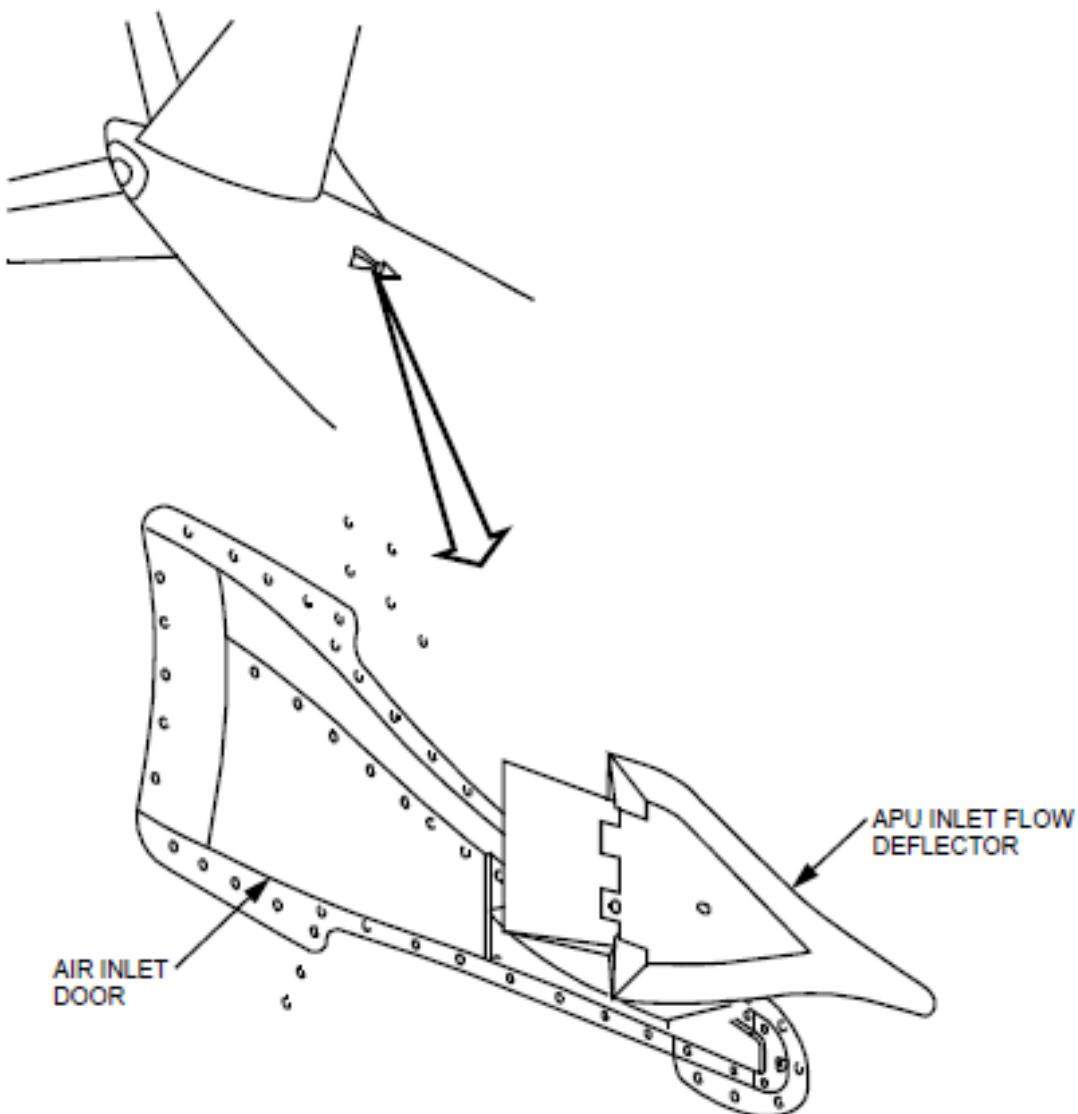
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**49-15-01 APU Inlet Flow Deflector**

**NOTE:** Due to degraded inflight starting and operating capability of the APU at high altitudes, operations predicated on the use of the APU should not be conducted above 25,000 feet.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
<b>For -300/-400/-500/-600/-700/-800/-900/-900ER: May be missing.</b>		
1	No penalty	No penalty



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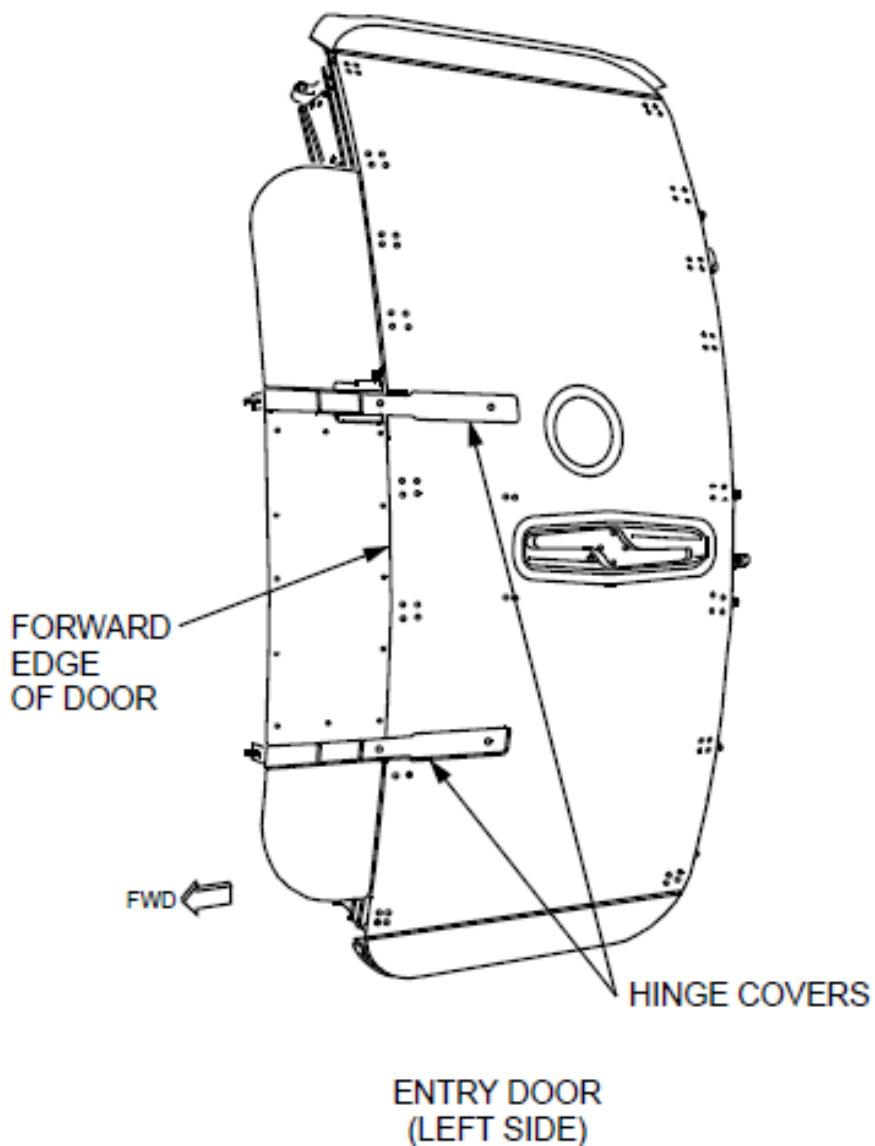
- |                 |  |
|-----------------|--|
| <b>52-10-01</b> | <b>Entry Door Hinge Covers</b>                           |
| <b>52-40-06</b> | <b>Galley Door Hinge Covers</b>                          |
| <b>52-40-08</b> | <b>Toilet Service Door</b>                               |
| <b>52-40-09</b> | <b>Water Service Door</b>                                |
| <b>52-40-10</b> | <b>Brake Accumulator Access Door Seals and Retainers</b> |

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**52-10-01 Entry Door Hinge Covers**

Performance limited weights are reduced by the following for each missing item:

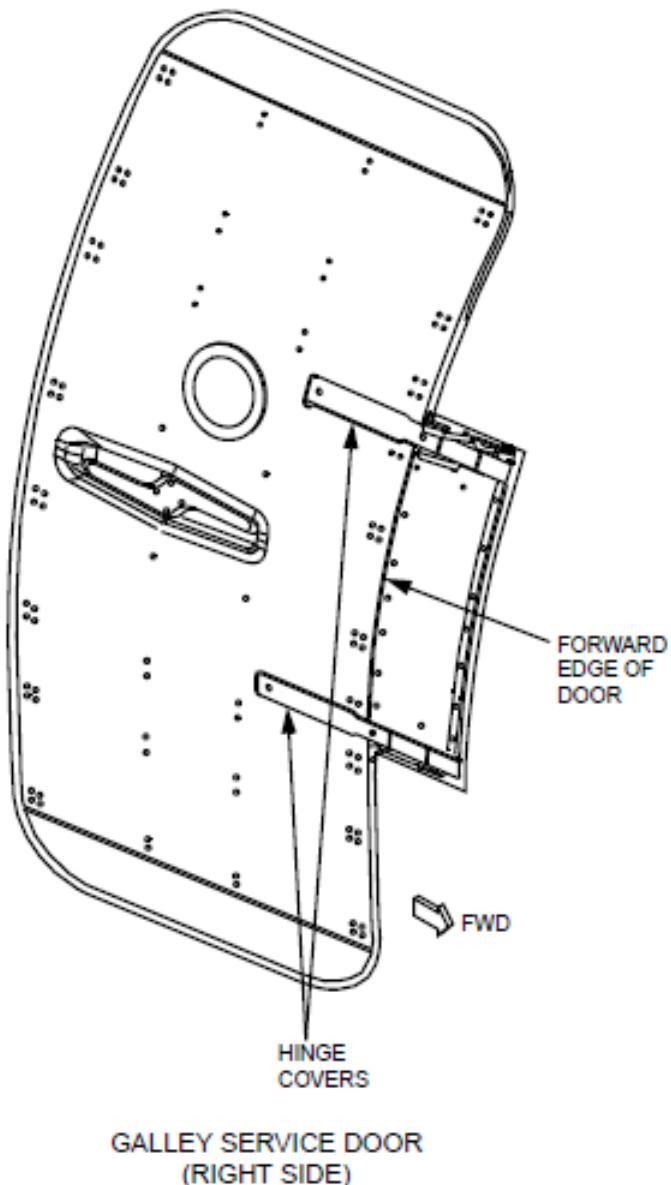
Number Installed	Takeoff & Landing	Enroute Climb
Any number may be missing.		
4	Negligible penalty	Negligible penalty



**52-40-06      Galley Door Hinge Covers**

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
Any number or combination of items 52-40-06 and 52-40-07 may be missing.		
4	Negligible penalty	Negligible penalty



**52-40-08      Toilet Service Door**

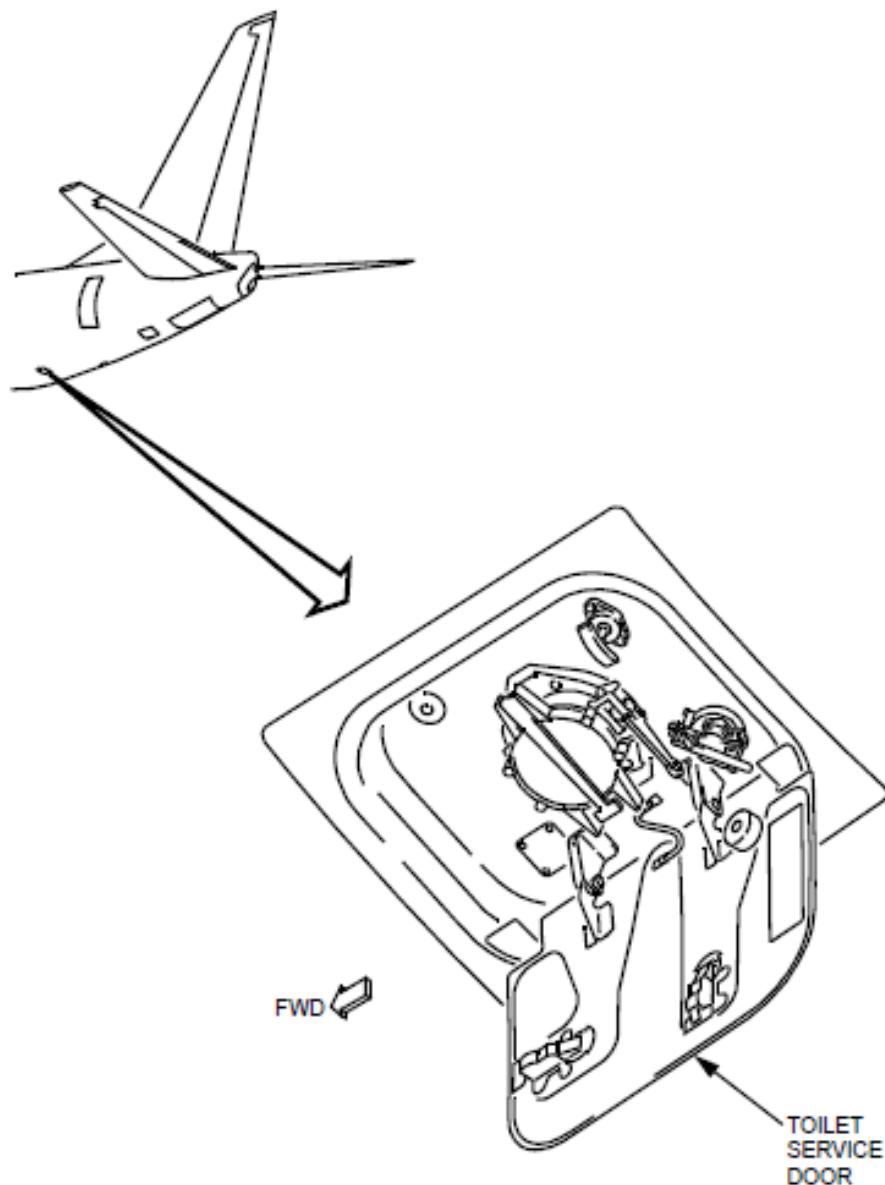
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Any number or combination of items 52-40-08 and -09 may be missing.

1	Negligible penalty	Negligible penalty
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**52-40-09 Water Service Door****For -600/-700/-800/-900ER:**

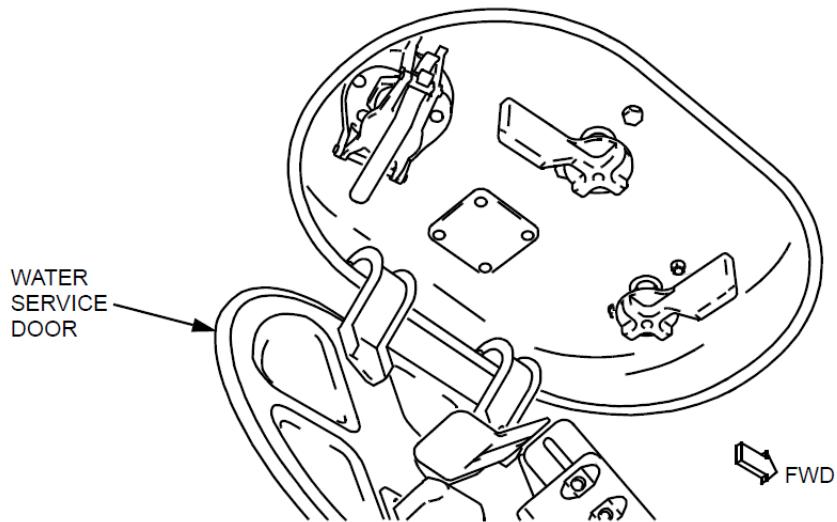
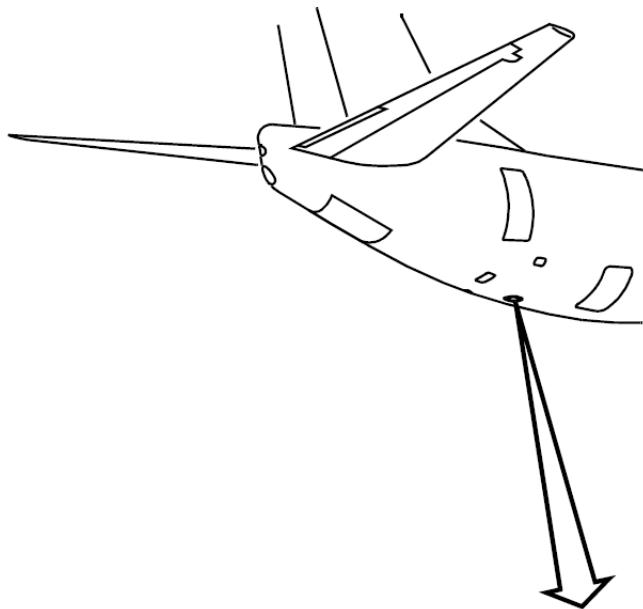
NOTE: Airplane equipped with compressor cutout switch and with the water service door missing, the water tank compressor will not operate. Refer to MMEL item 38-01.

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Any number or combination of items 52-40-08 and -09 may be missing.

1	Negligible penalty	Negligible penalty
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**52-40-10 Brake Accumulator Access Door Seals and Retainers**

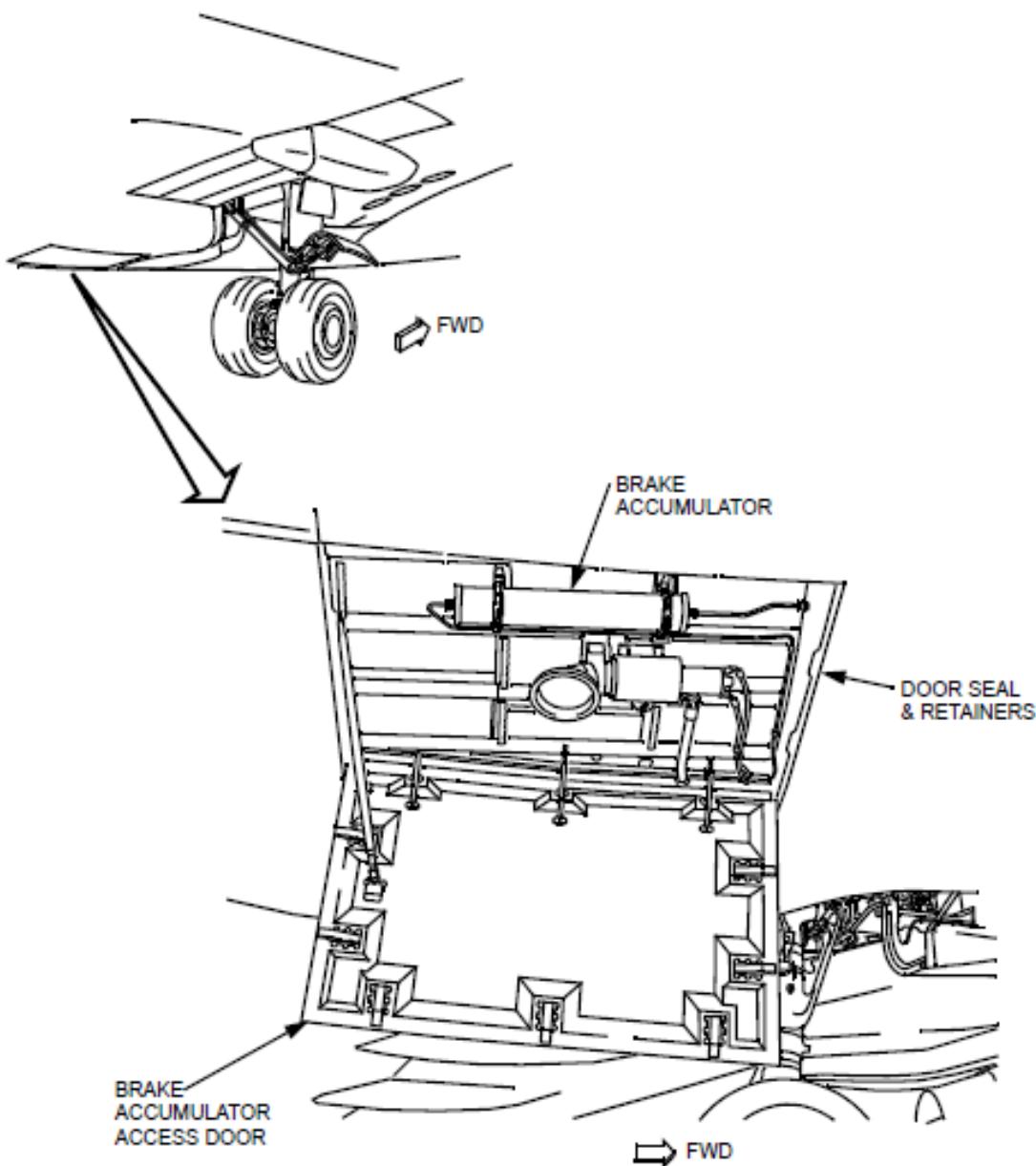
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing seal:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Any number of seals and retainers may be missing.

4	Negligible penalty	Negligible penalty
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**Table of Contents****53-11-01 Cab Vortex Generators**

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**53-11-01 Cab Vortex Generators**

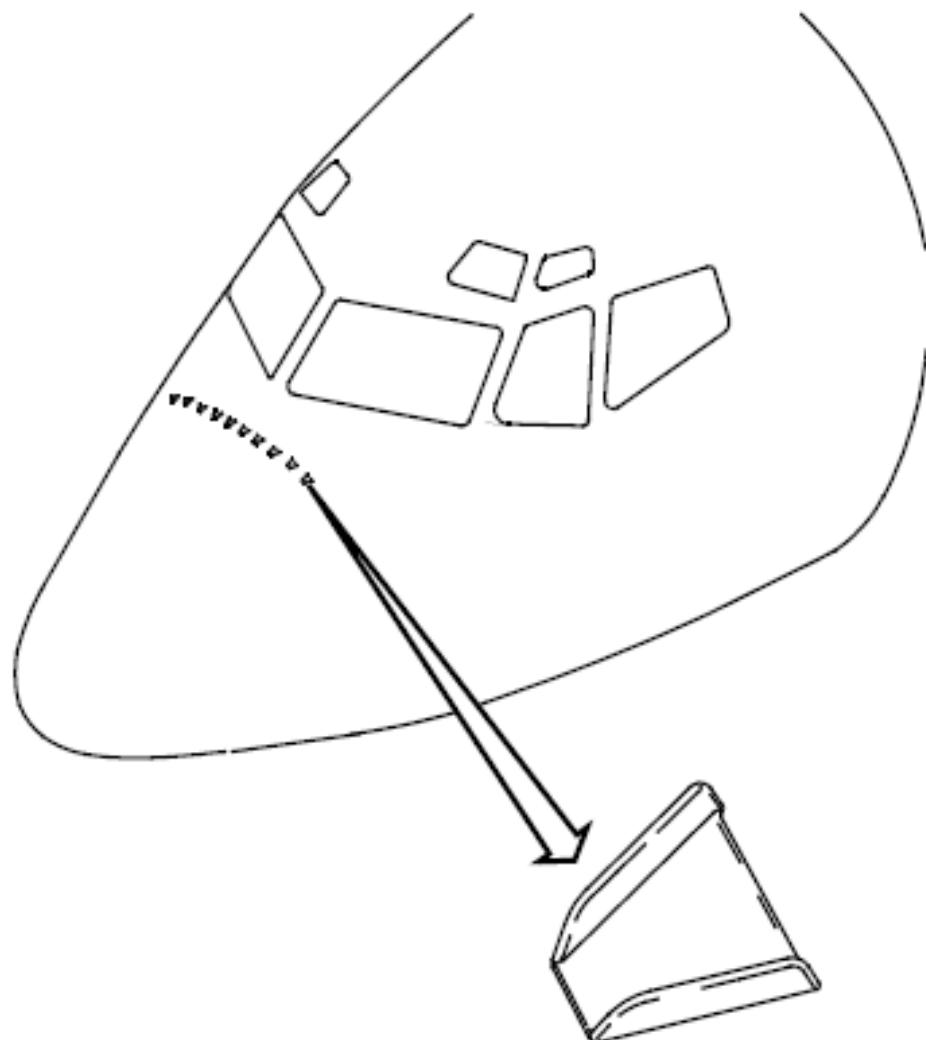
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Any number may be missing.

10	No penalty	No penalty
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**Table of Contents****55-10-01 Horizontal Stabilizer-to-Body Sliding Seals****55-30-01 Aft Body Vortex Generators**

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**55-10-01      Horizontal Stabilizer-to-Body Sliding Seals**

NOTE 1: Remove link assembly associated with missing seal to prevent wear damage.

NOTE 2: Seals may not be missing during operations requiring the application of ground deicing or anti-icing fluids.

Performance limited weights are reduced by the following:

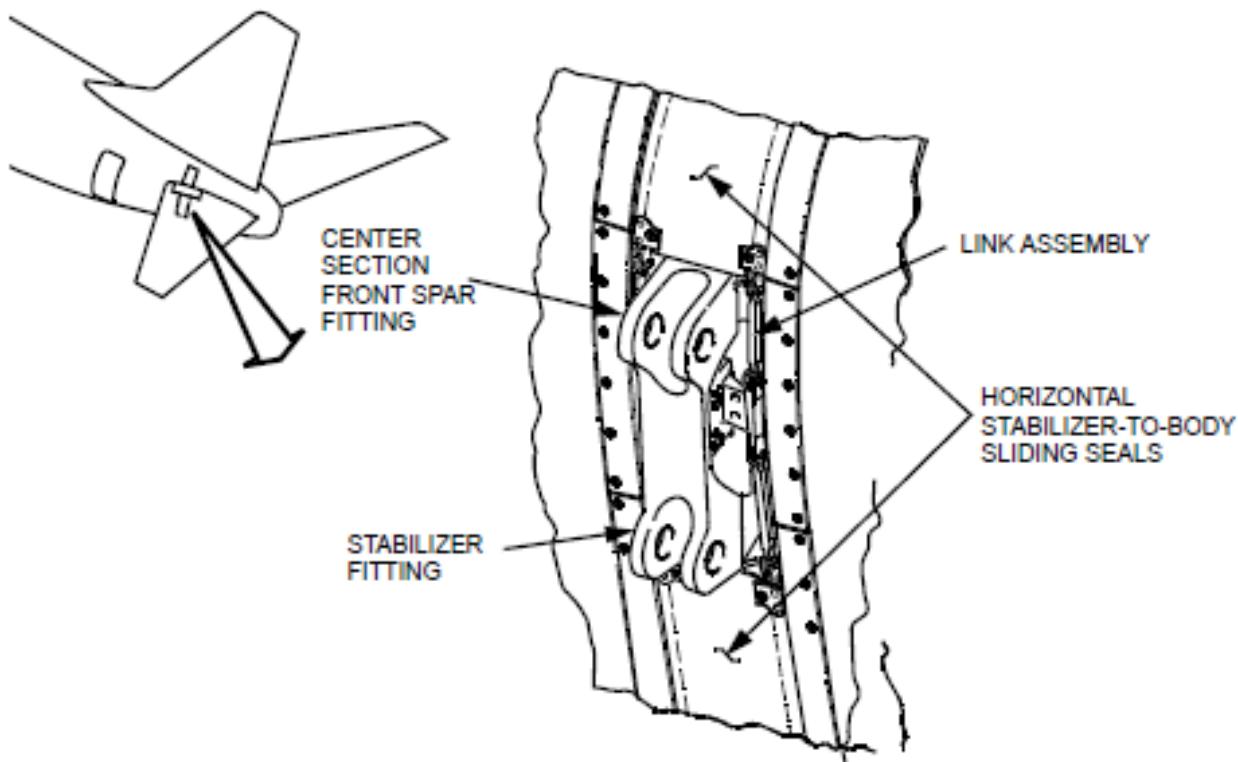
Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

For -600/-700/-800:

Any number may be missing.

Performance limited weights are reduced by the following for each missing seal:

4	300 lb (136 kg)	600 lb (272 kg)
---	-----------------	-----------------



**55-30-01 Aft Body Vortex Generators**

NOTE: During cruise flight with one or more vortex generators missing, occasional vertical motions may be felt which appear to be light turbulence. These motions are characteristic of this airplane and should not be construed to be associated with Mach buffet.

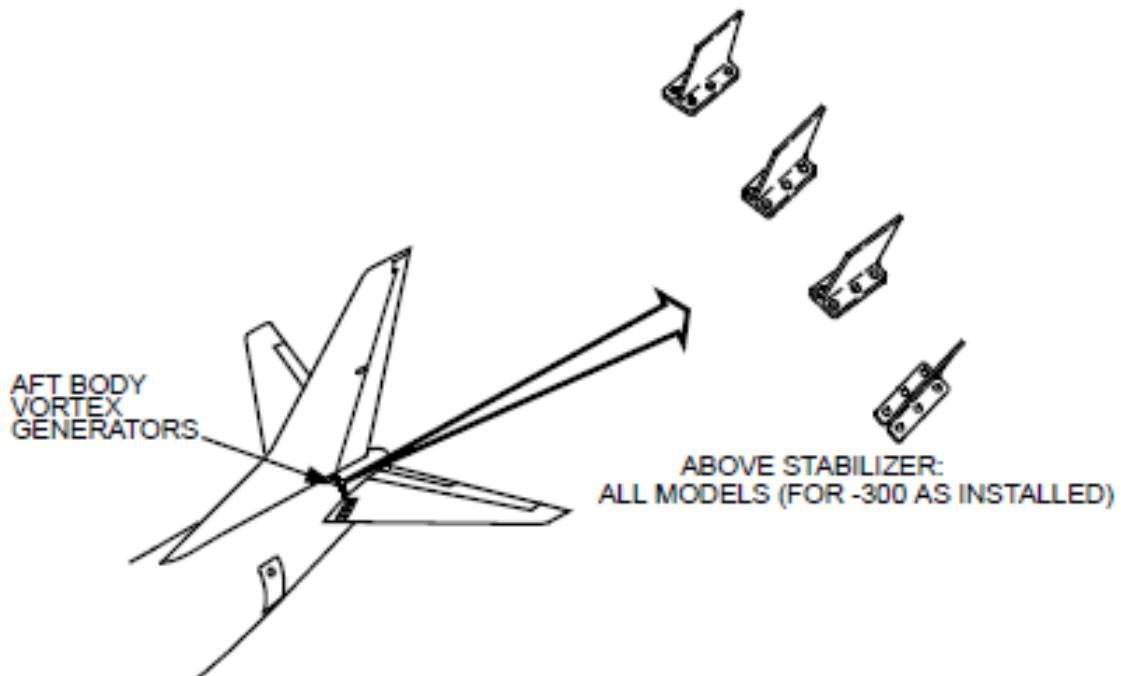
Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

For -400/-500/-600/-700/-800/-900ER:  
Up to one side may be missing.

8	No penalty	No penalty
---	------------	------------

For -300/-400/-500/-600/-700/-800/-900



## Section 3

## ATA 57

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- 57-10-03 Flap Track Fairing Tail Cone, Outboard Flaps**
- 57-10-04 Flap Track Fairing Tail Cones, Inboard Flaps**
- 57-10-05 Flap Support Fairings No. 1 and No. 8 (Outboard Flap)**
- 57-30-06 Wing Vortex Generators**
- 57-30-07 Jacking Point Panels**
- 57-30-08 Slat Actuator Fairing Panels**
- 57-41-04 Slat Main Track Seal Door**
- 57-41-08 Slat Skin Tabs C/T Auxiliary Arms**
- 57-41-09 Slat Sponge Seals**
- 57-41-10 Slat Bulb Seals**
- 57-41-11 Slat End Seals (Outboard End, Slats 1 & 8)**
- 57-41-12 Wing Leading Edge Vortilons**
- 57-41-13 Slat Spanwise Lower Flex Skin**
- 57-51-01 Sponge Rubber Air Dam in Overwing Bolt Cover Cavity**
- 57-53-03 Inboard Flap, Inboard Seal Plate**
- 57-53-05 Inboard Flap, Inboard Flap Track Slot Landing Door Assembly**
- 57-53-06 Inboard Flap, Inboard Flap Track Slot Landing Door Seals**
- 57-53-07 Outboard Flap Leading Edge Vortex Generators**
- 57-53-08 Flap End Seals**
- 57-53-09 Outboard Aft Flap Aerodynamic Seals**

**57-54-03 Aerodynamic Seal C/T Krueger Flap (Fwd) Inboard Fixed Leading Edge**

**57-54-04 Aerodynamic Seal C/T Krueger Flap (Aft)**

**57-54-05 Aerodynamic Seal C/T Krueger Flap (Inboard Fixed Leading Edge)**

**57-54-06 Aerodynamic Seal Retainer C/T Seal (Krueger Flap - Fwd)**

**57-54-07 Aerodynamic Seal Retainer C/T Seal (Krueger Flap - Aft)**

**57-54-08 Aerodynamic Seal Retainer Assembly C/T Krueger Flap (Aft)**

**57-54-09 Bulb Seal C/T Krueger Flap (Aft)**

**57-54-10 Seal-Blade, Inboard Krueger Flap, Spanwise, Aft**

**57-71-01 Spoiler 1, 2, 3, 10, 11, 12 Seals**

**57-10-03 Flap Track Fairing Tail Cone, Outboard Flaps**

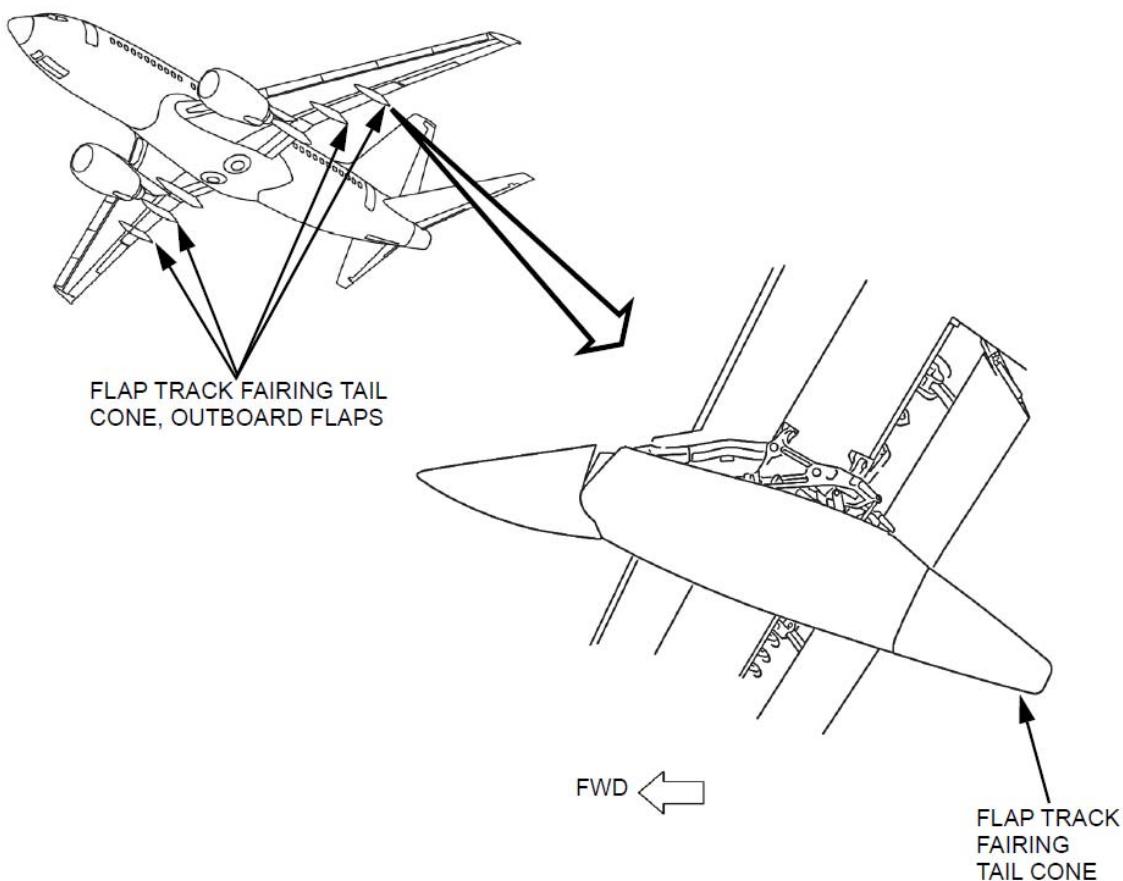
Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

For -600/-700/-800:

One or two tail cones may be missing from any 4 tail cone positions.

4	150 lb (68 kg)	300 lb (136 kg)
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**57-10-04 Flap Track Fairing Tail Cones, Inboard Flaps****For -600/-700/-800/-900/-900ER:**

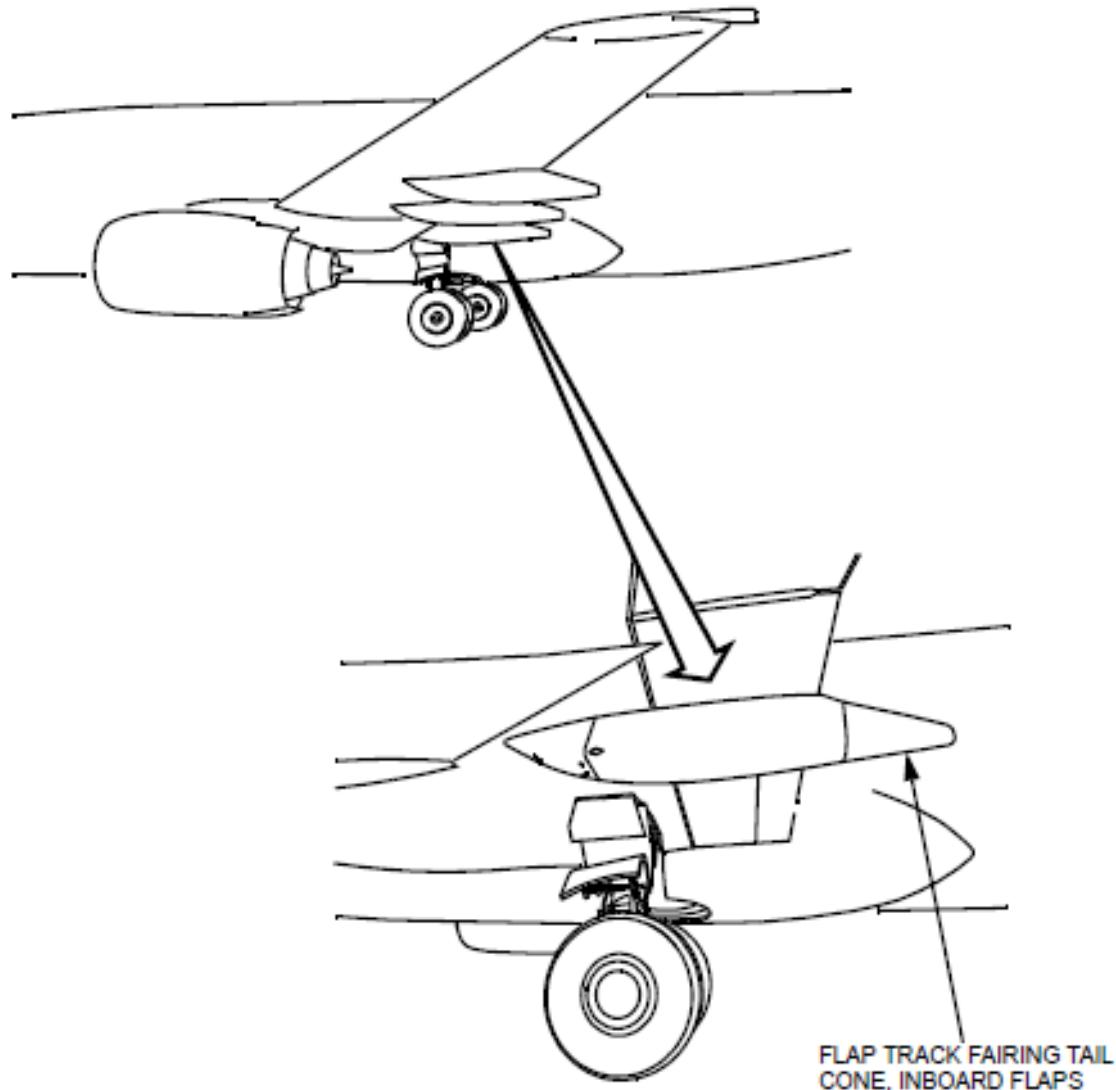
Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
---------------------	----------------------	------------------

**For -600/-700/-800:**

One or both tail cones may be missing.

2	200 lb (91 kg)	350 lb (160 kg)
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**57-10-05 Flap Support Fairings No. 1 and No. 8 (Outboard Flap)**

**For -600/-700/-800/-900/-900ER:**

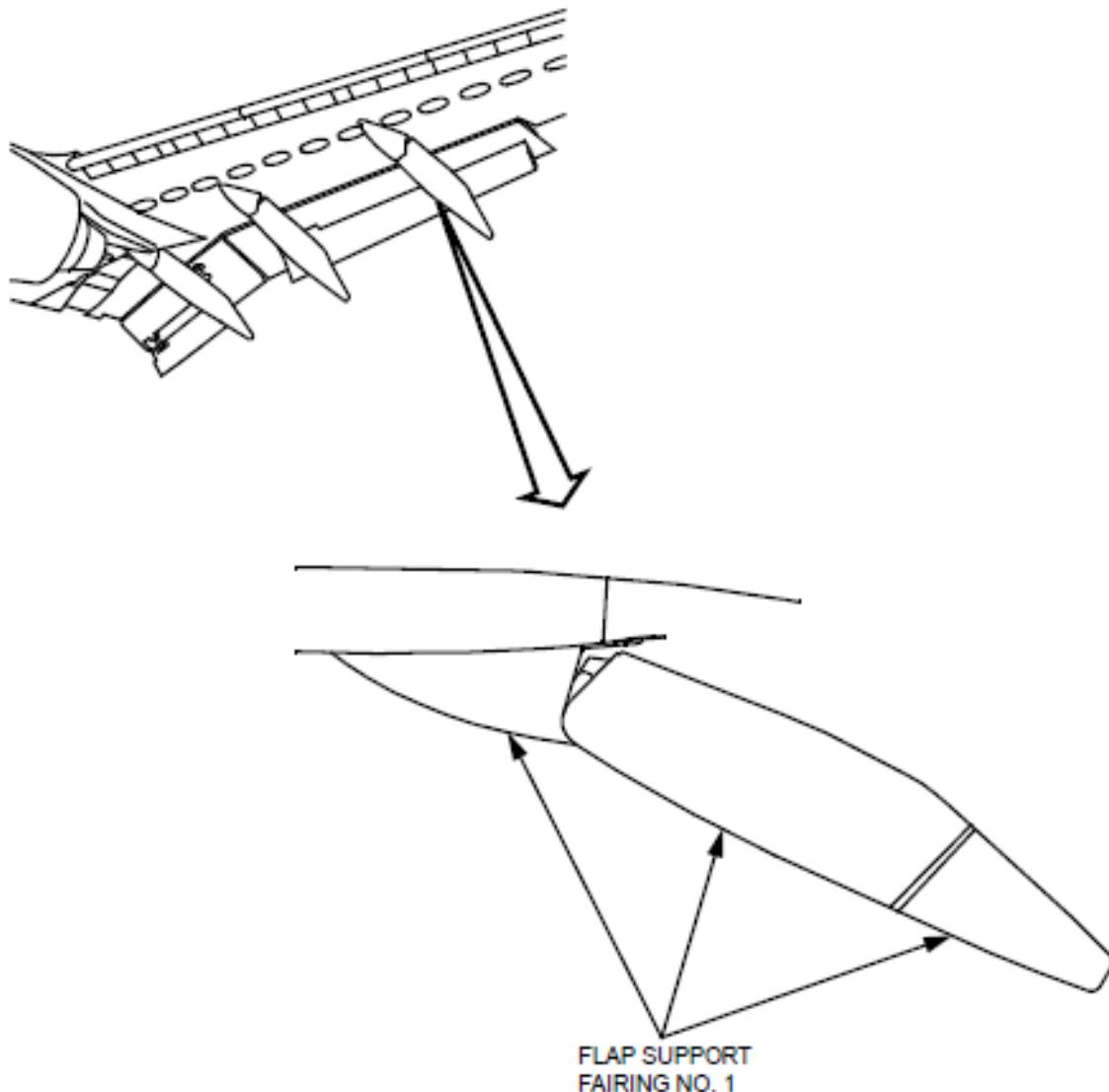
Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

**For -600/-700/-800:**

One or both may be missing.

2	1500 lb (681 kg)	2950 lb (1338 kg)
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**57-30-06 Wing Vortex Generators**

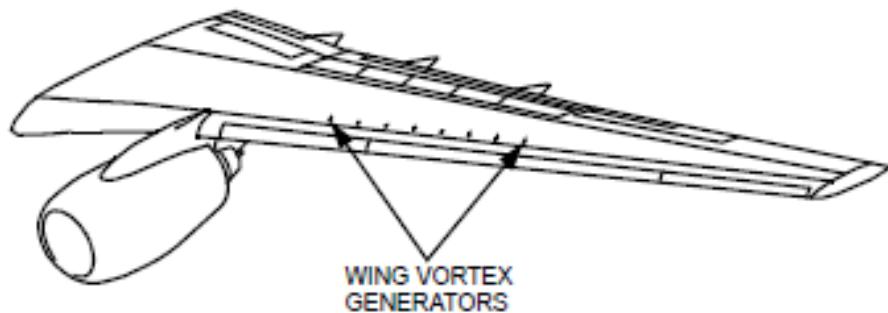
Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
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For -600/-700/-800/-900/-900ER:

A maximum of one per wing may be missing.

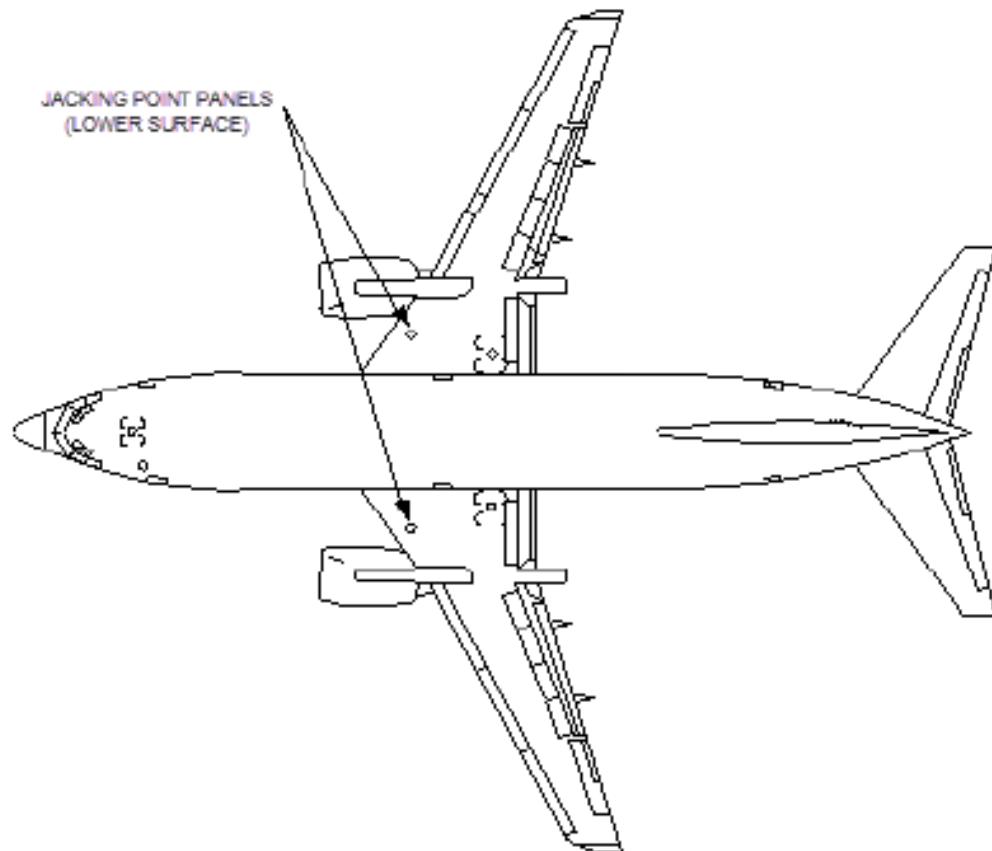
16	No Penalty	No penalty
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**57-30-07 Jacking Point Panels**

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
Any number may be missing.		
2	Negligible penalty	Negligible penalty



**57-30-08 Slat Actuator Fairing Panels****For -600/-700/-800/-900/-900ER:**

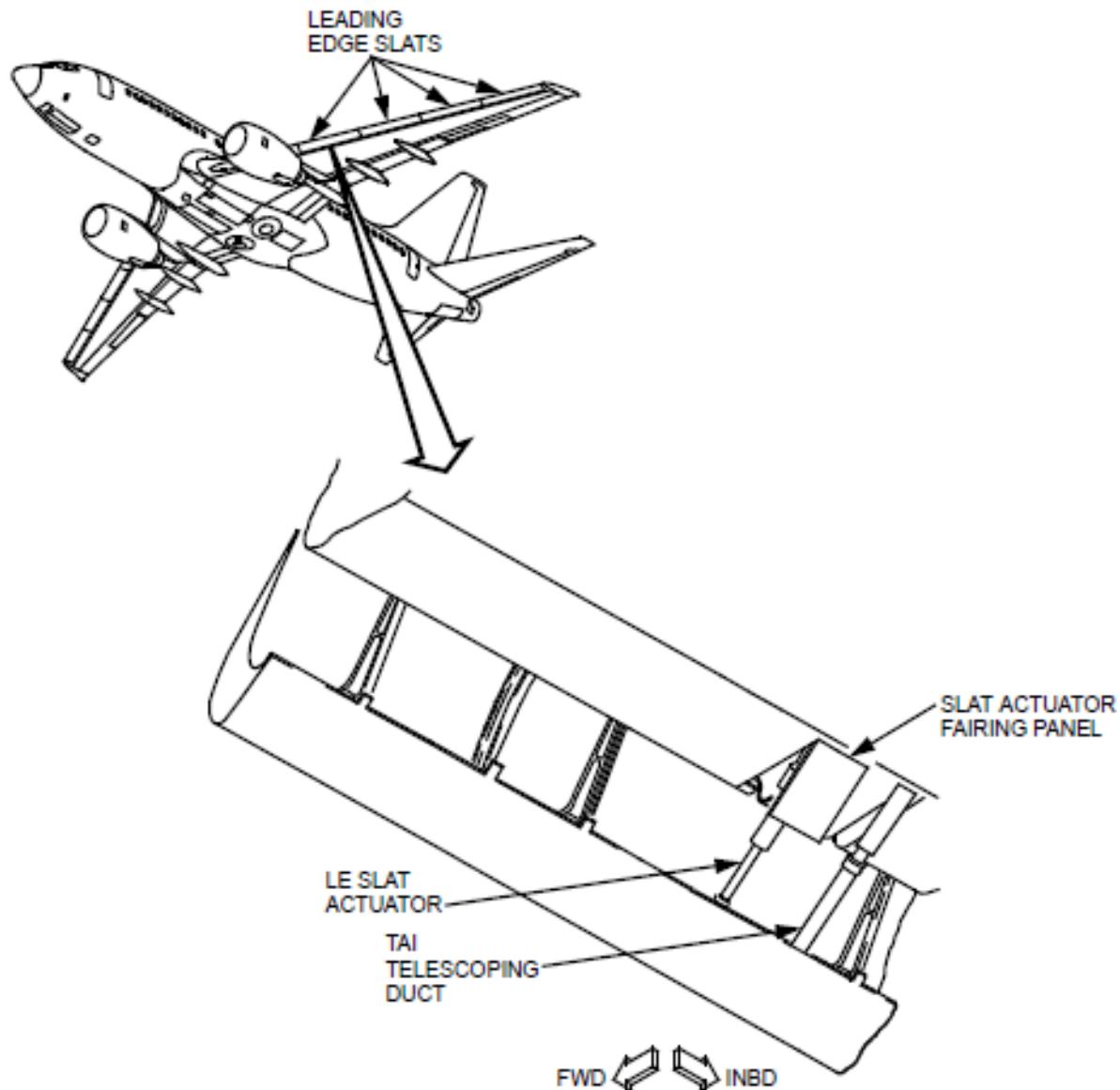
Performance limited weights are reduced by the following for each missing panel:

Number Installed	Takeoff & Landing	Enroute Climb
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**For -600/-700/-800:**

Any number or combination may be missing.

8	150 lb (68 kg)	250 lb (113 kg)
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**57-41-04 Slat Main Track Seal Door**

**For -300/-400/-500/-600/-700/-800/-900/-900ER:**

Performance limited weights are reduced by the following for each missing item:

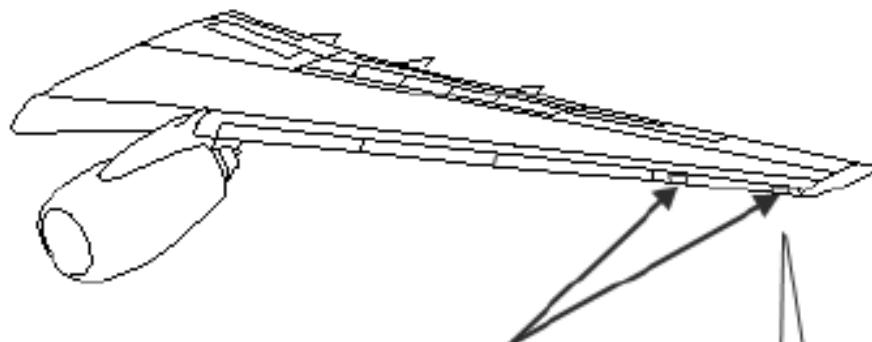
Number Installed	Takeoff & Landing	Enroute Climb
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**For -600/-700/-800/-900/-900ER:**

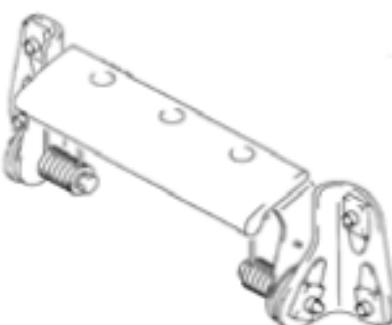
Any number may be missing.

4	Negligible penalty	Negligible penalty
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**For -600/-700/-800/-900/-900ER:**



LEADING EDGE SLAT MAIN TRACK  
SEAL DOORS  
(RESTORATION SEAL INSTL,  
OUTBD, FIXED LE)



**57-41-08 Slat Skin Tabs C/T Auxiliary Arms**

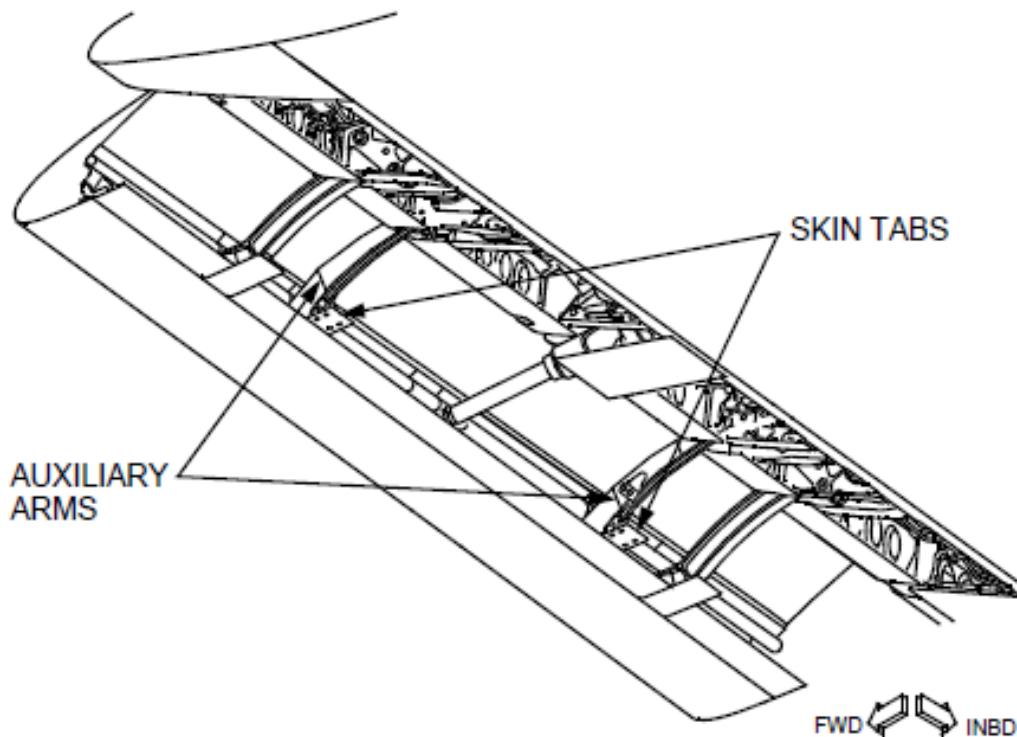
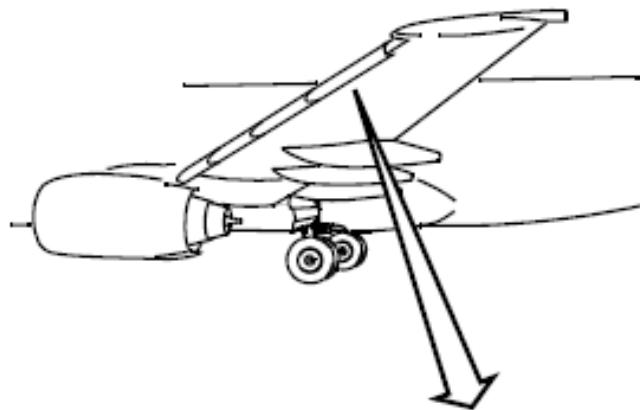
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Any number may be missing. There are 2 items per slat except none on slat 4 and 5.

12	Negligible penalty	Negligible penalty
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**57-41-09 Slat Sponge Seals**

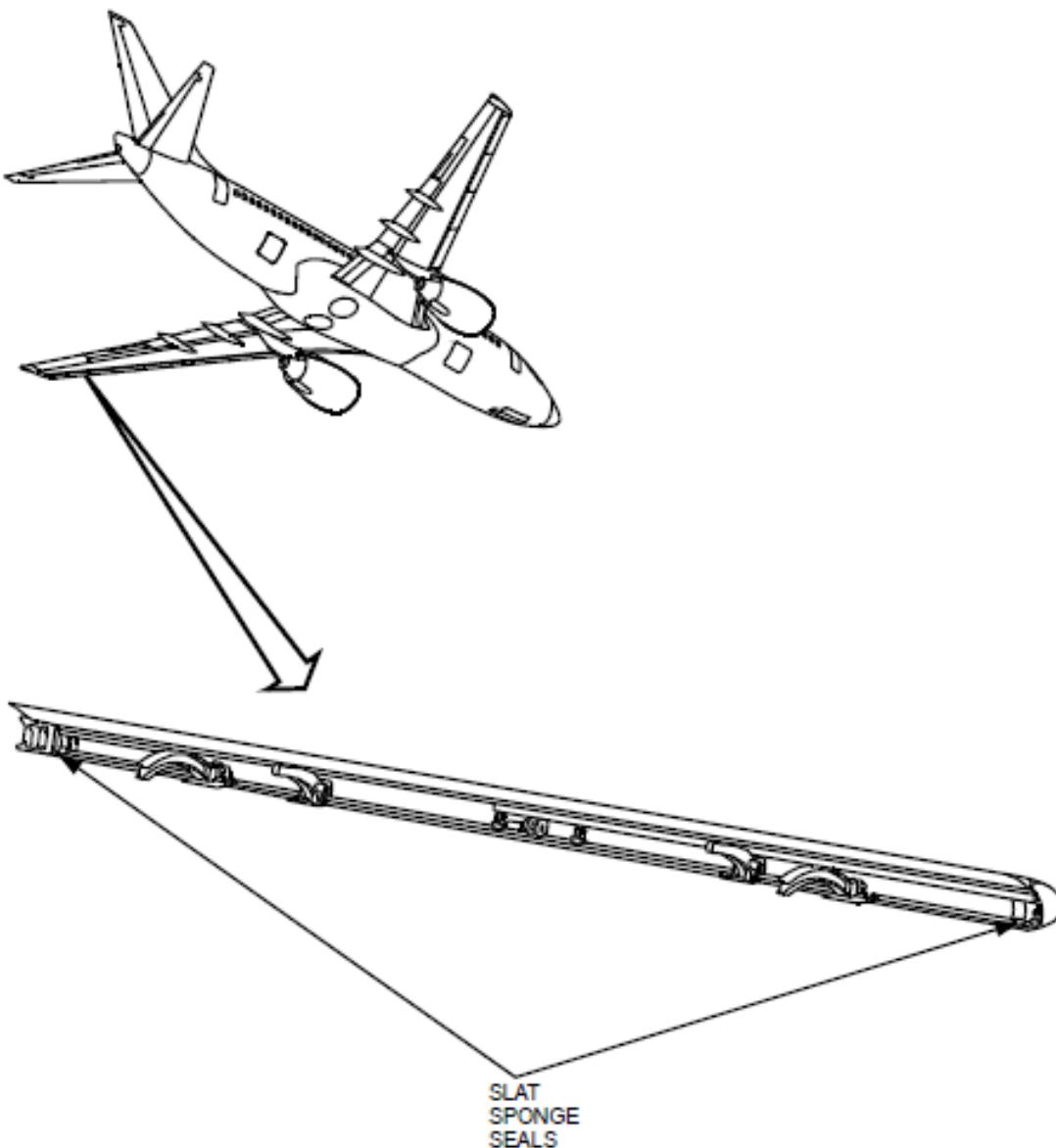
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

Any number may be missing. There are 2 items per slat.

16	Negligible penalty	Negligible penalty
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**57-41-10 Slat Bulb Seals****For -600/-700/-800/-900/-900ER:**

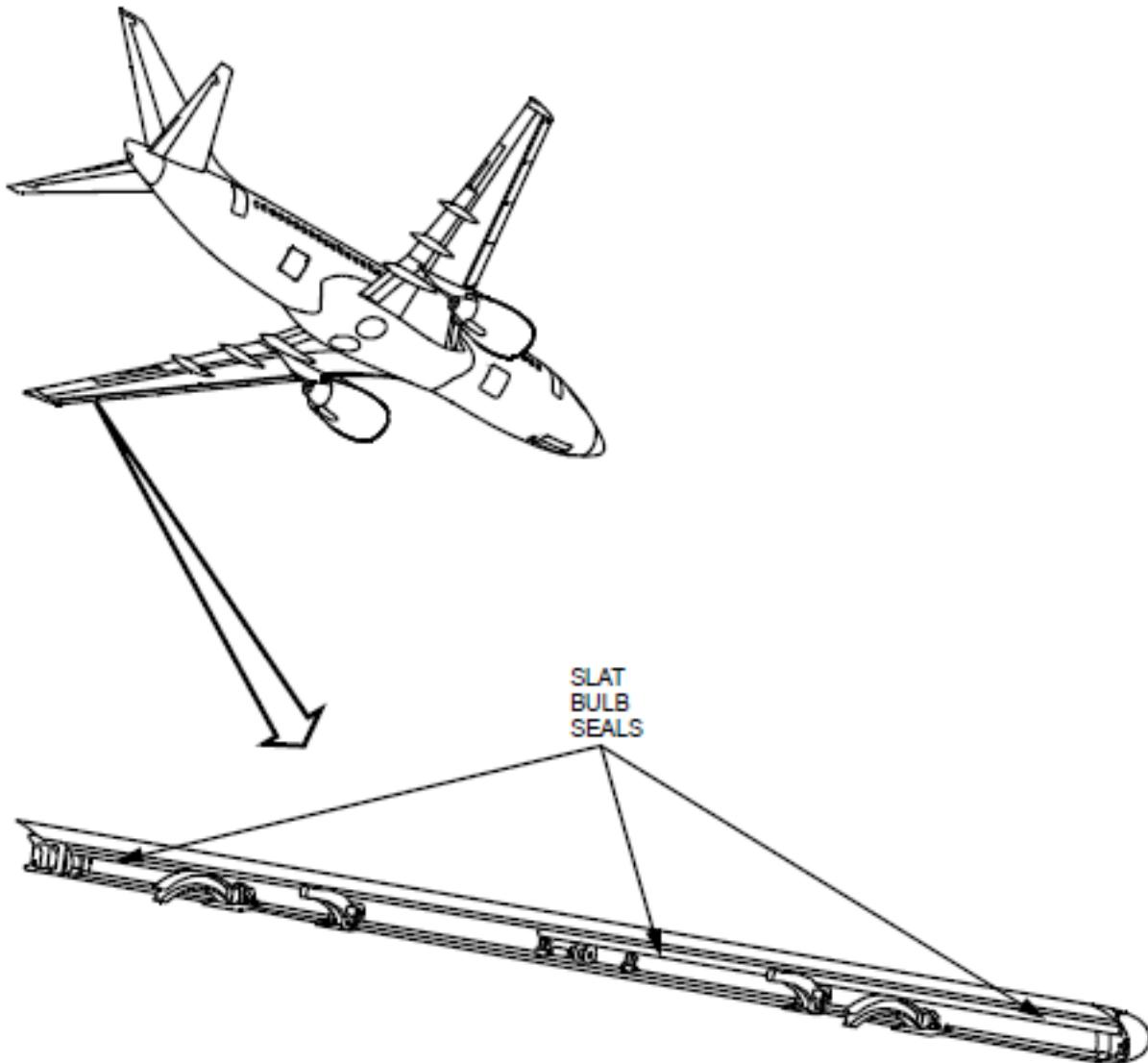
Performance limited weights are reduced by the following for each slat with one or more missing seal segments:

Number Installed	Takeoff & Landing	Enroute Climb
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**For -600/-700/-800:**

Any number may be missing.

76	150 lb (68 kg)	250 lb (113 kg)
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**57-41-11 Slat End Seals (Outboard End, Slats 1 & 8)**

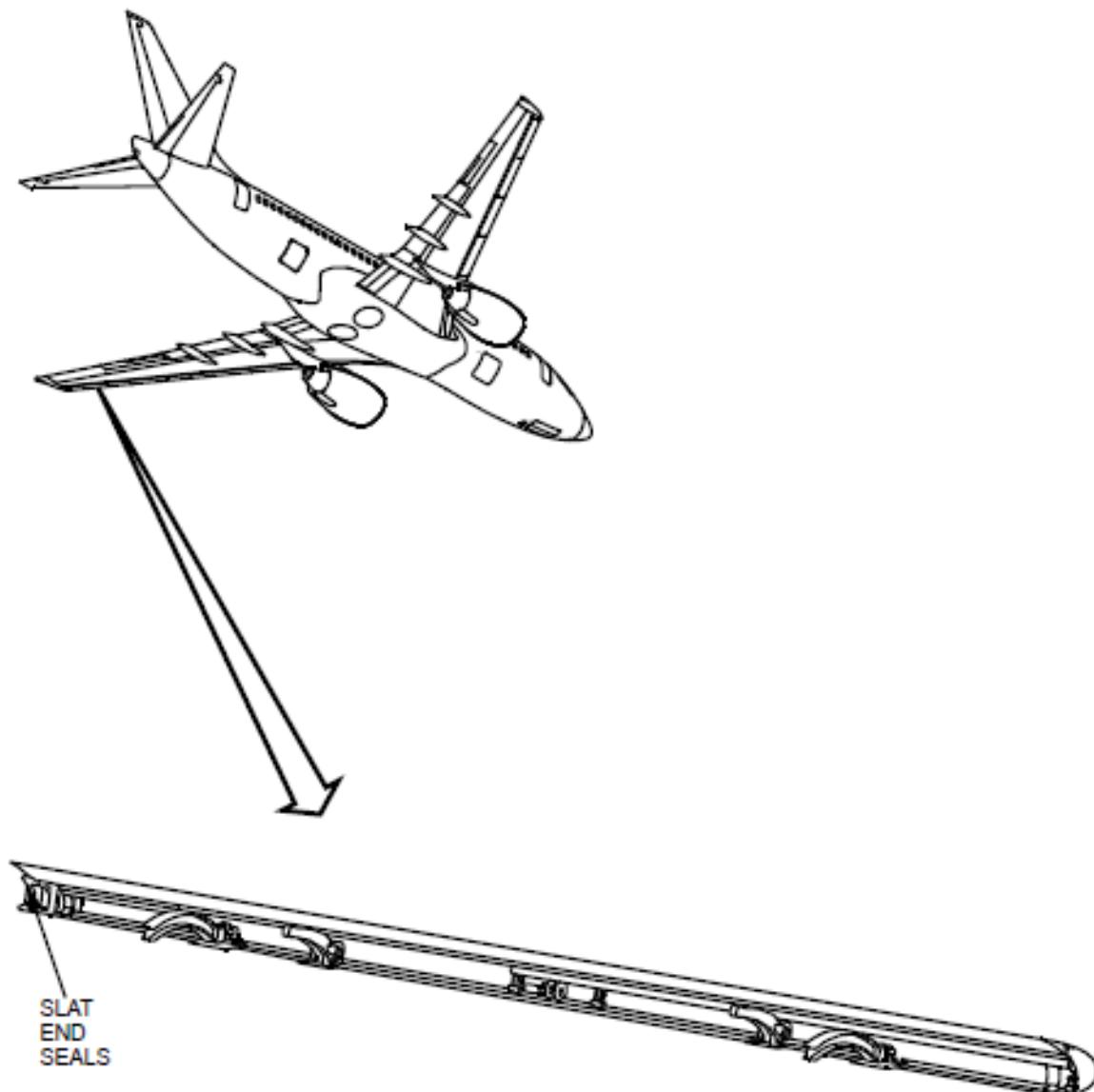
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
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Up to 2 may be missing.

10	Negligible penalty	Negligible penalty
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**57-41-12 Wing Leading Edge Vortilons**

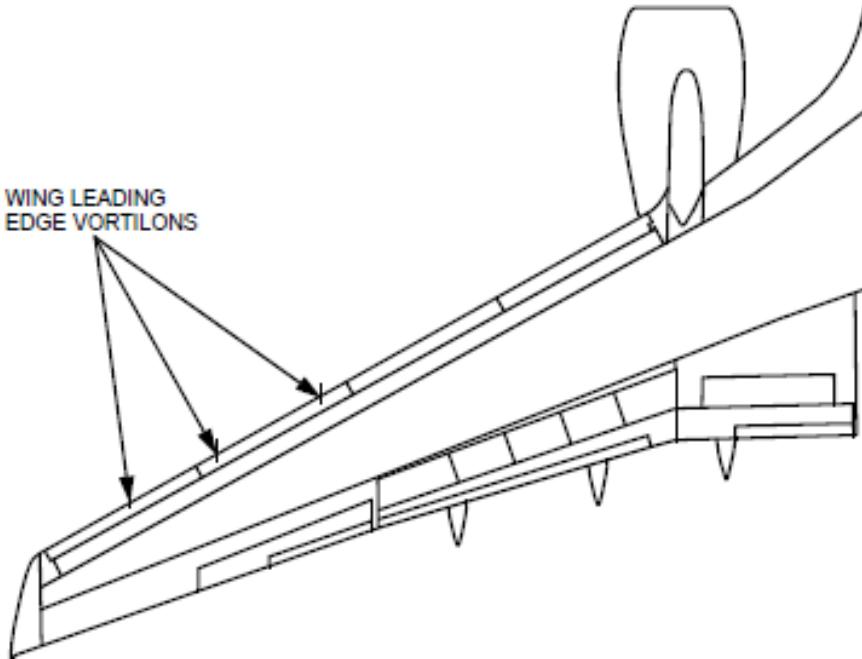
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
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One per wing may be missing.

6	No penalty	No penalty
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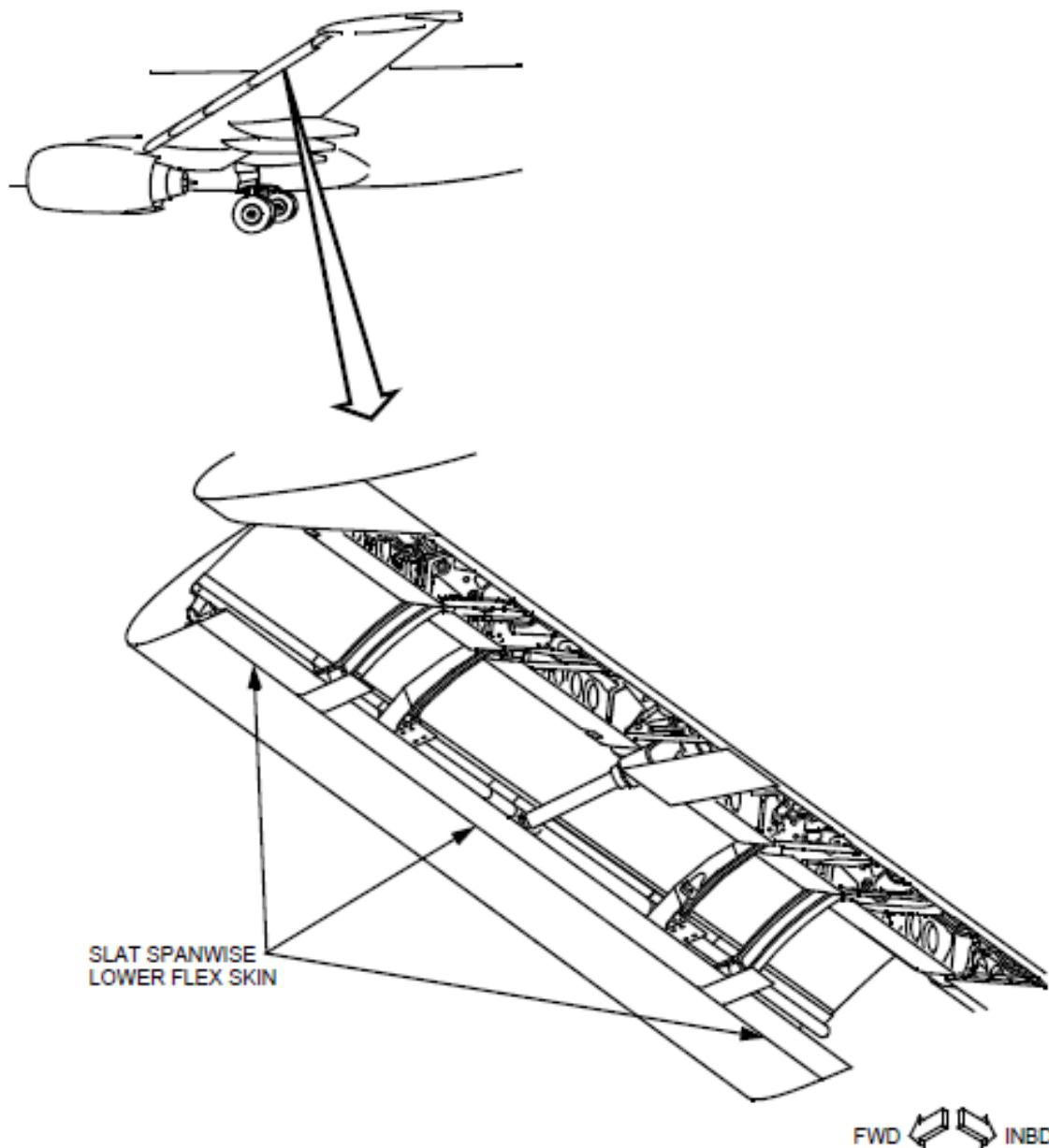


**57-41-13 Slat Spanwise Lower Flex Skin**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
One per wing (part numbers 114A9201-1 through -20) may be missing.		
24	Negligible penalty	Negligible penalty



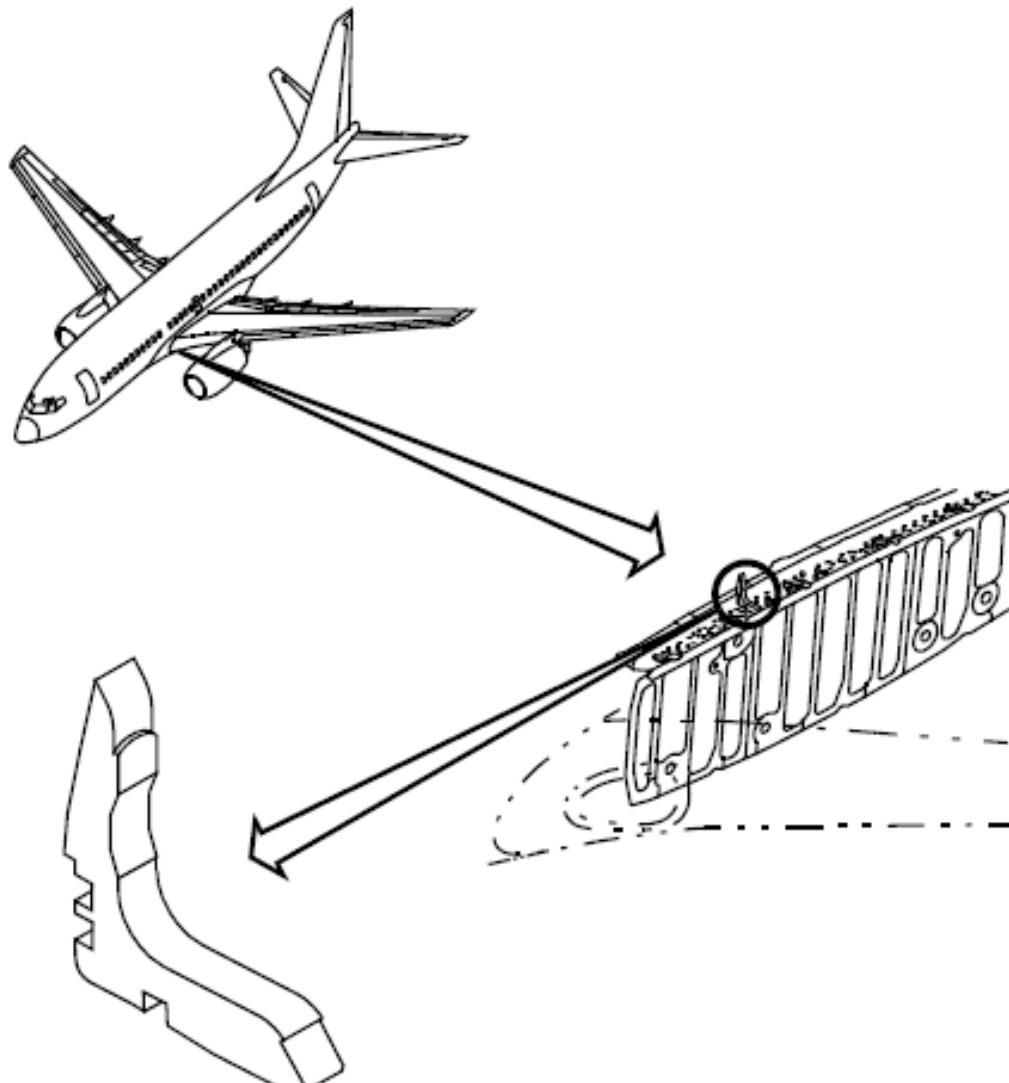
**57-51-01      Sponge Rubber Air Dam in Overwing Bolt Cover Cavity****For -600/-700/-800/-900/-900ER:**

Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
------------------	-------------------	---------------

One or both may be missing.

2	Negligible penalty	Negligible penalty
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SPONGE RUBBER  
AIR DAM

**57-53-03 Inboard Flap, Inboard Seal Plate**

For -600/-700/-800/-900/-900ER:

NOTE 2: Operation at Flaps 40 prohibited. Penalties applicable for Flaps Up and Flaps 1 operation only. No penalties for operations at Flaps 5 through 30.

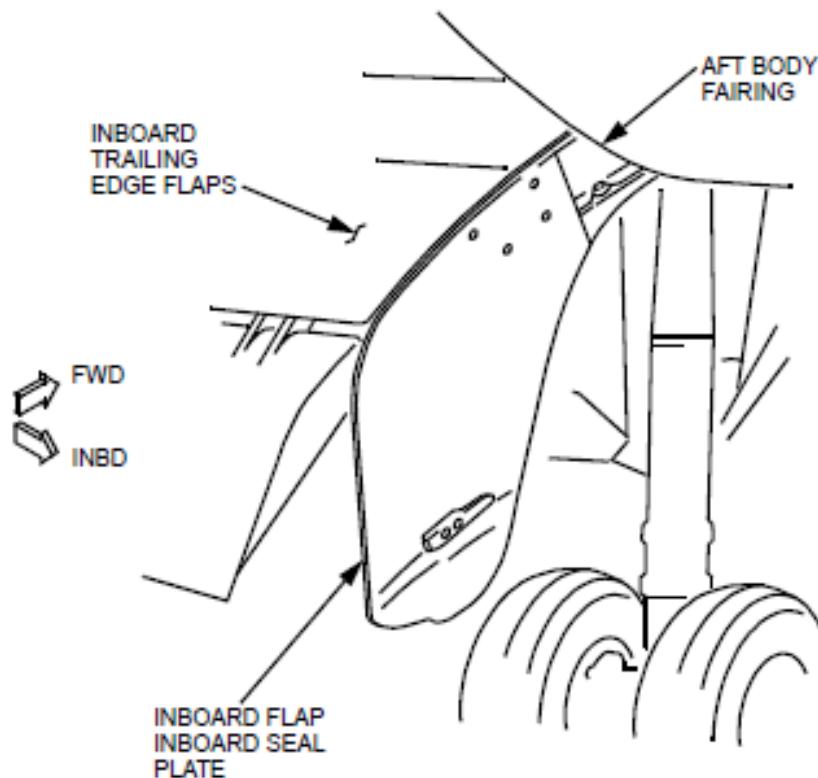
Performance limited weights are reduced by the following for each missing item:

Number Installed	Takeoff & Landing	Enroute Climb
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For -600/-700/-800:

One or both may be missing.

2	400 lb (182 kg)	750 lb (341 kg)
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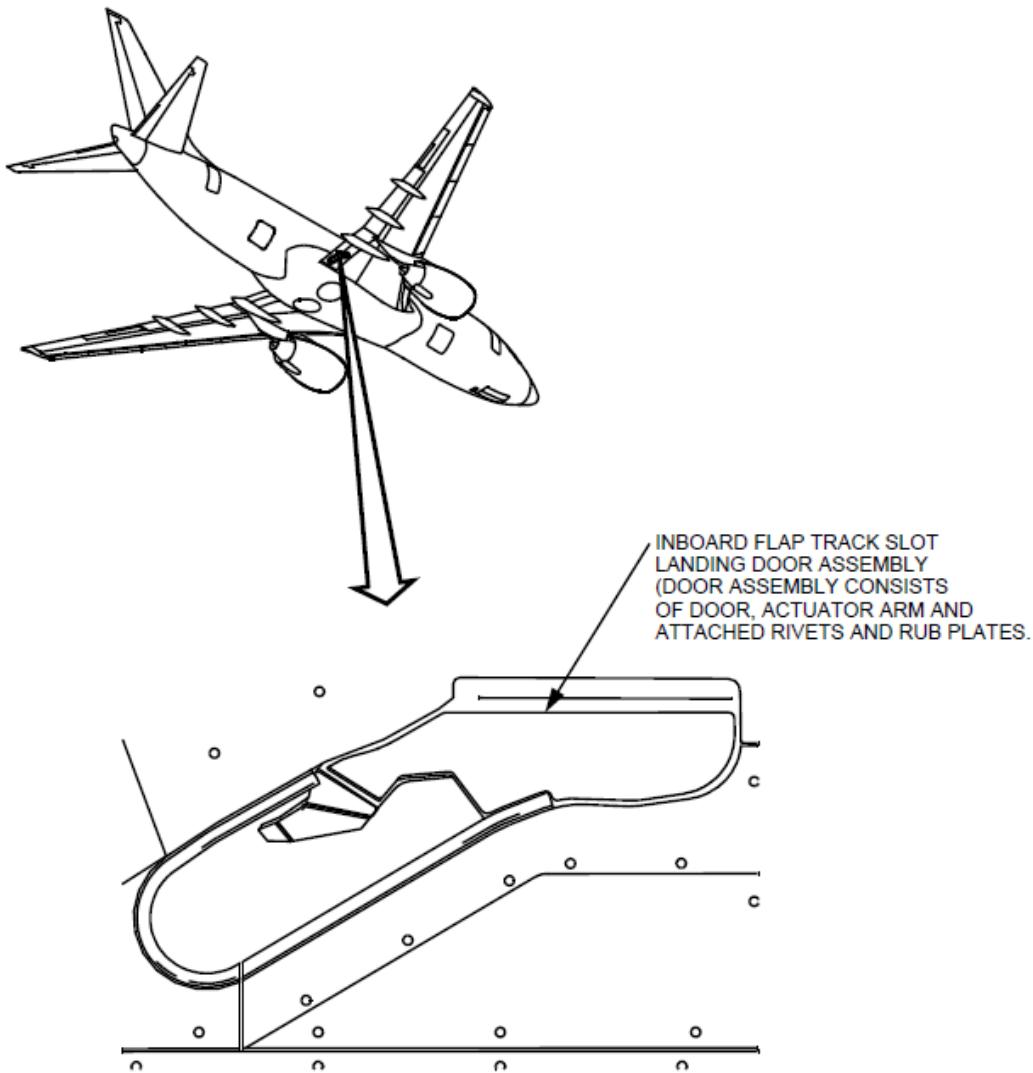
**57-53-05      Inboard Flap, Inboard Flap Track Slot Landing Door Assembly**

For -600/-700/-800/-900/-900ER:

NOTE: Operation at Flaps 40 prohibited.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
Door actuator arm and plate assembly must be complete or removed entirely. One or both may be missing.		
2	No penalty	No penalty



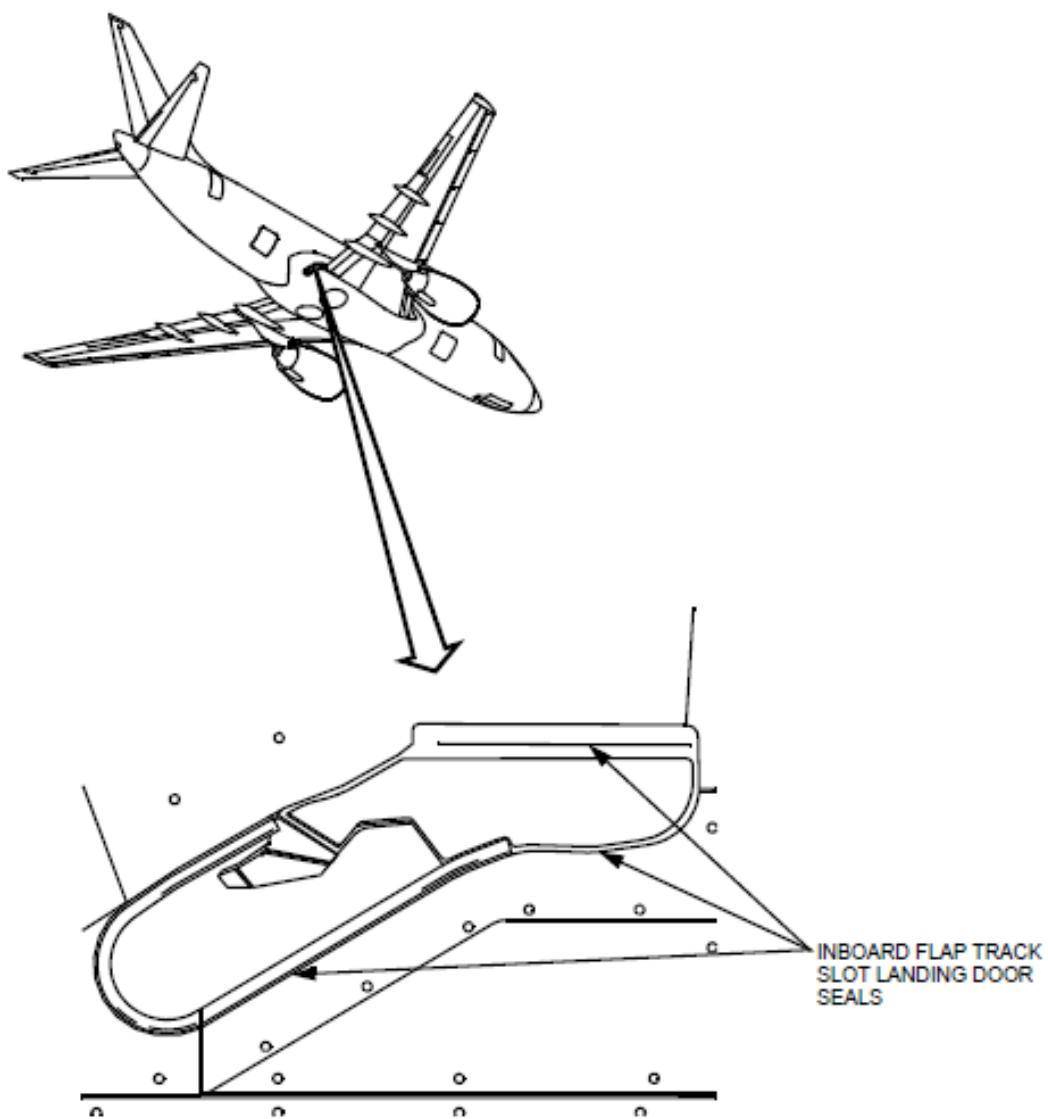
**57-53-06      Inboard Flap, Inboard Flap Track Slot Landing Door Seals**

For -600/-700/-800/-900/-900ER:

NOTE: Operation at Flaps 40 prohibited.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
Any combination of seals and retainers may be missing.		
6	No penalty	No penalty



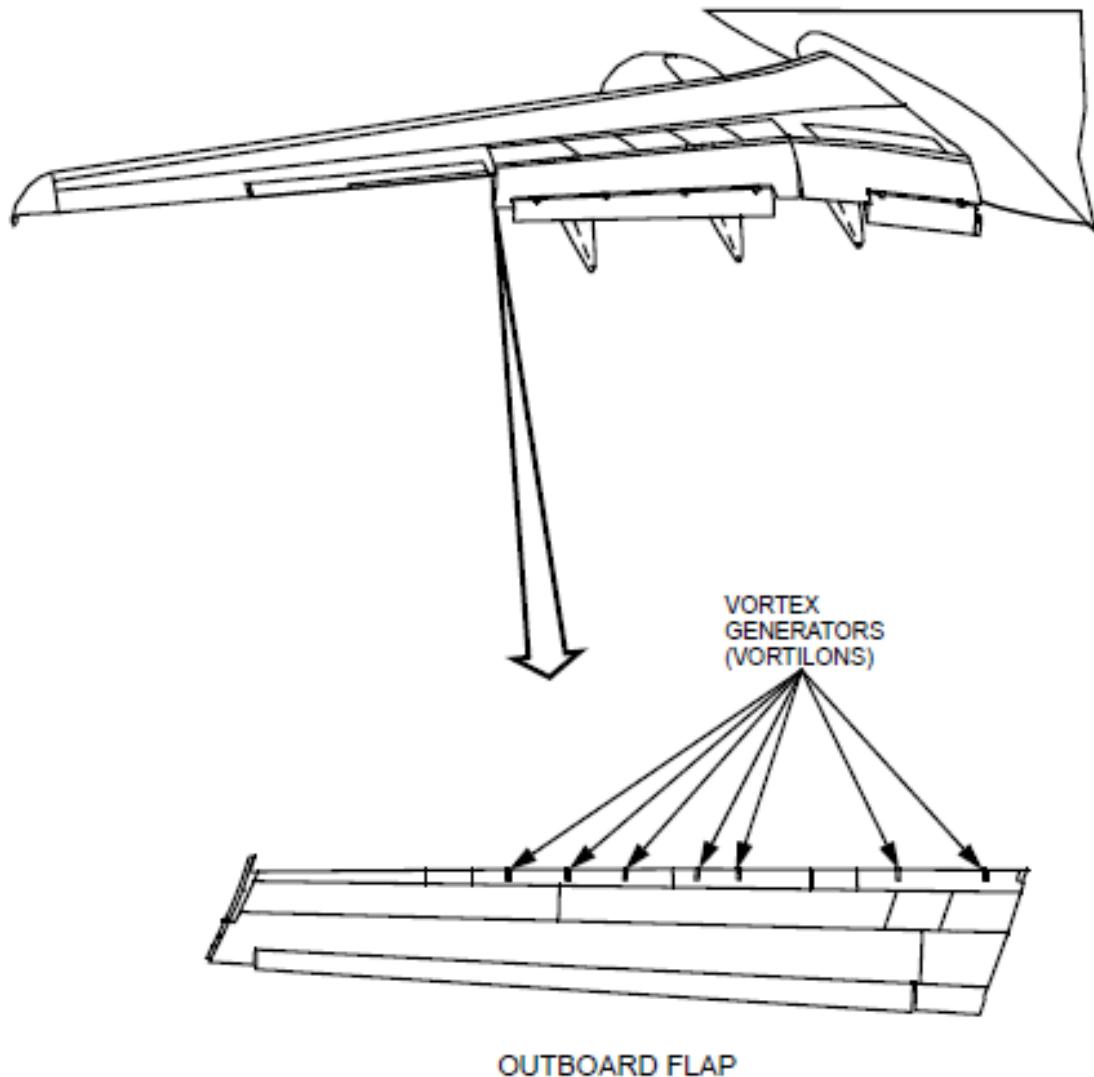
**57-53-07 Outboard Flap Leading Edge Vortex Generators**

For -600/-700/-800/-900/-900ER:

NOTE: Operation at Flaps 40 prohibited.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
Up to 3 non adjacent per side may be missing.		
14	No penalty	No penalty



**57-53-08 Flap End Seals**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following:

Seal Gap 1:

Includes seals between the inboard and outboard flaps, upper surface only. There are 6 seals on the lower surface, and are not allowed to be missing from Seal Gap 1. There are 4 seals per wing, upper only.

Any or all of the upper seals may be missing.

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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For -600/-700/-800:

14	200 lb (91 kg) per wing	200 lb (91 kg) per wing	200 lb (91 kg) per wing
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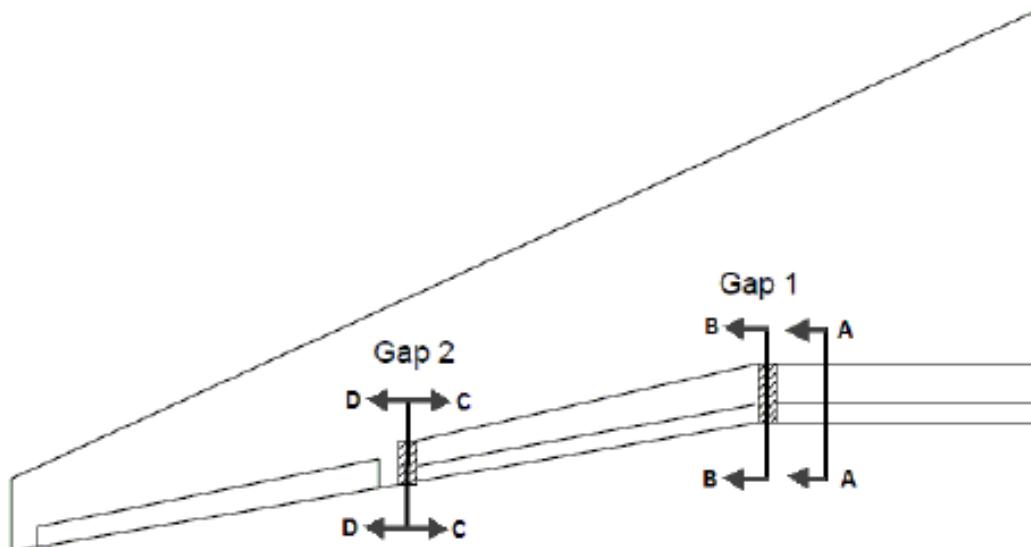
Seal Gap 2:

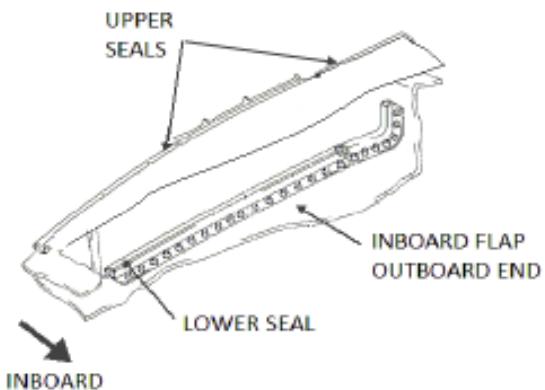
Includes seals between the outboard flaps and the fixed wing trailing edge. Two upper seals or two lower seals may be missing per wing at Seal Gap 2. Both upper and lower seals on the same wing are not allowed to be missing from Seal Gap 2. Upper and/or lower seals may be missing provided performance limited weights are reduced by the following:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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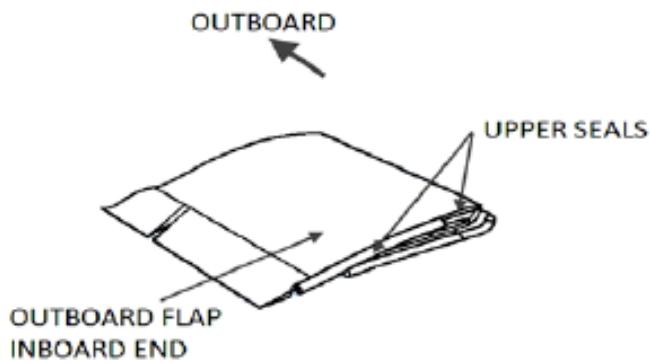
For -600/-700/-800:

8	Negligible per wing	Negligible per wing	No penalty
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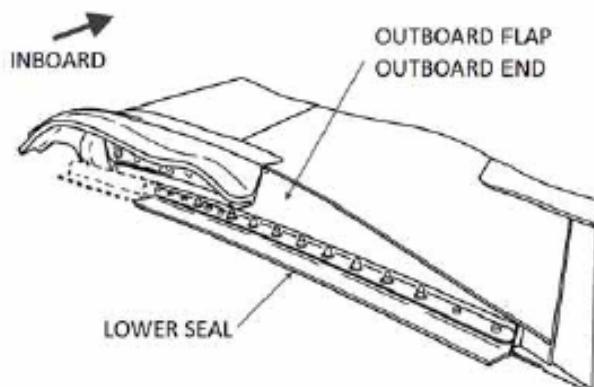




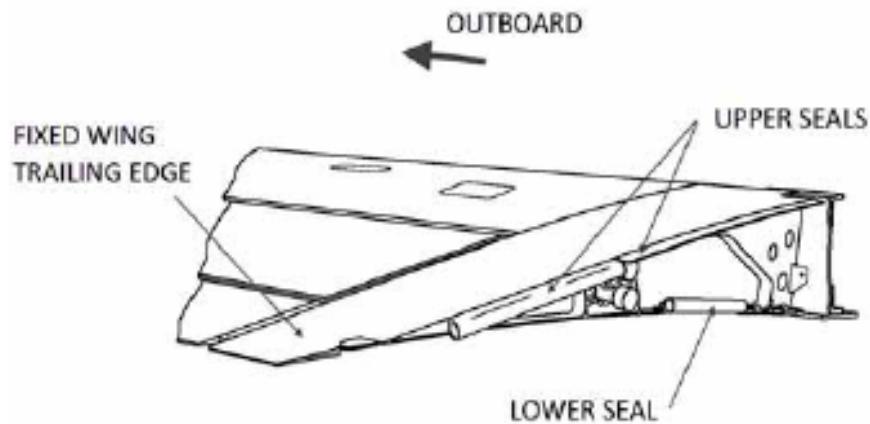
**A - A**



**B - B**



**C - C**

**D - D**

**57-53-09 Outboard Aft Flap Aerodynamic Seals**

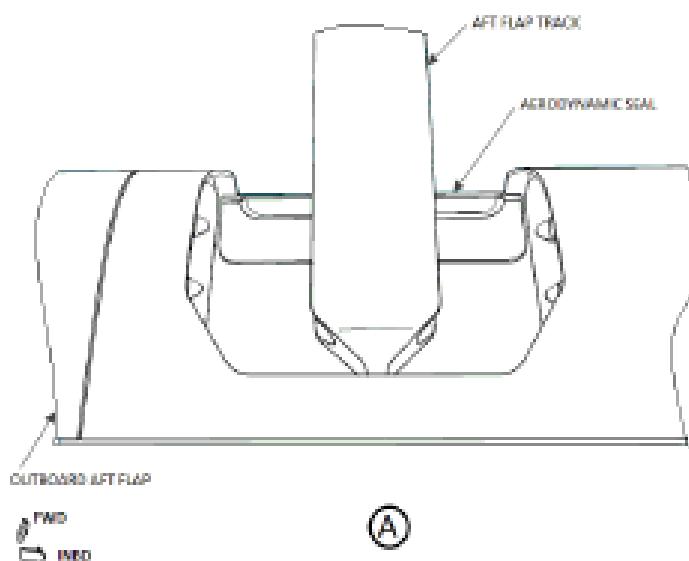
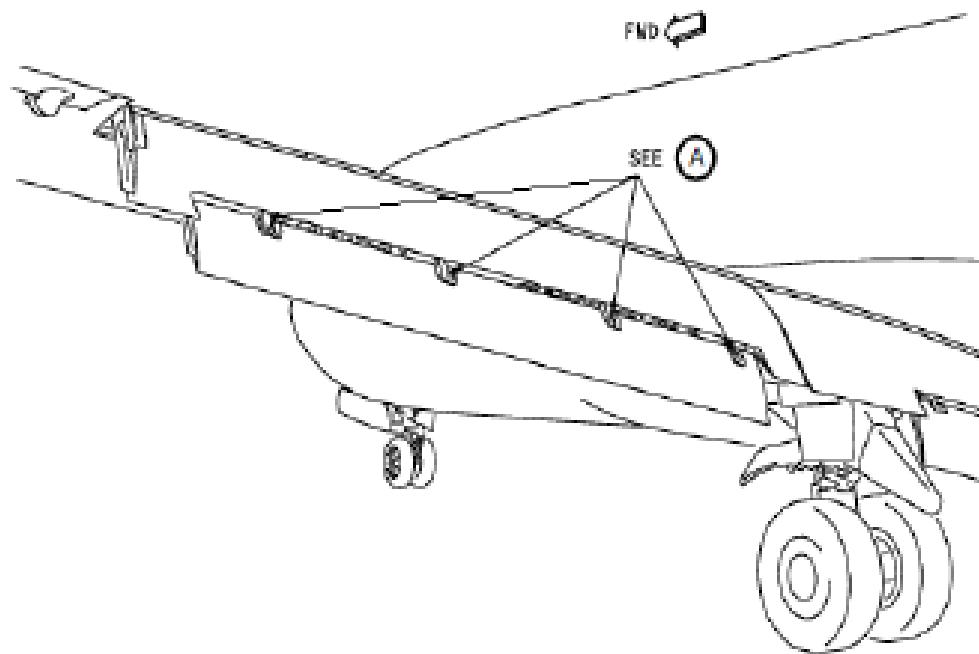
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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Any number may be missing.

8	Negligible	Negligible	No penalty
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**57-54-03      Aerodynamic Seal C/T Krueger Flap (Fwd) Inboard Fixed Leading Edge**

Only the seals and/or seal retainers around the inboard Krueger flap cavities (Krueger flaps #2 and #3) are allowed to be missing. Seals that extend partially over the outboard Krueger flap cavities may not be missing. Any seal retainers that support the seals which extend partially over the outboard Krueger flap cavity may not be missing, even if these seal retainers are located entirely in the inboard Krueger flap cavities.

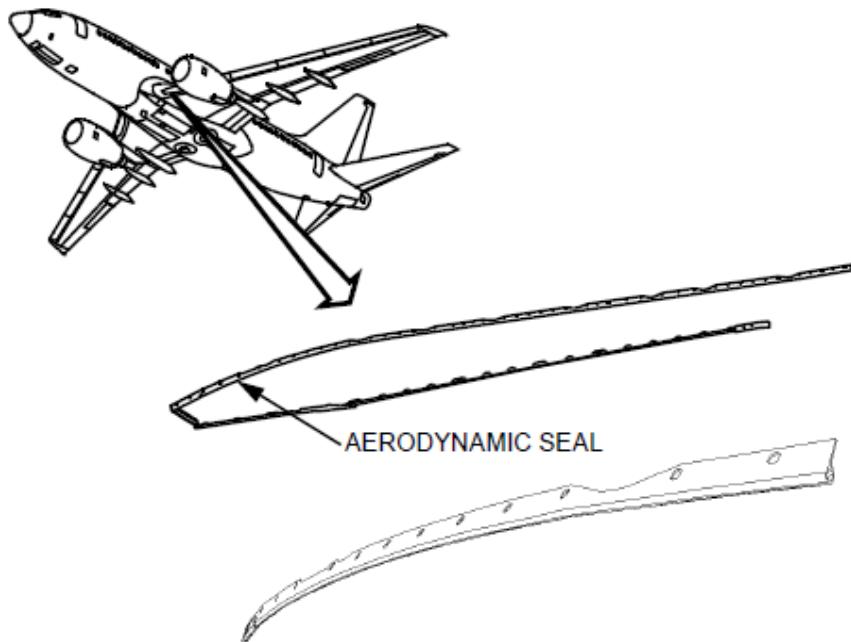
Performance limited weights are reduced by the following for any number of missing items:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
------------------	---------	---------------	----------------------

**For -600/-700/-800:**

A combination of one or more seals and/or retainers from Items 57-54-03 through 57-54-09 may be missing.

6	200 lb (91 kg)	350 lb (160 kg)	No penalty
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**57-54-04      Aerodynamic Seal C/T Krueger Flap (Aft)**

Only the seals and/or seal retainers around the inboard Krueger flap cavities (Krueger flaps #2 and #3) are allowed to be missing. Seals that extend partially over the outboard Krueger flap cavities may not be missing. Any seal retainers that support the seals which extend partially over the outboard Krueger flap cavity may not be missing, even if these seal retainers are located entirely in the inboard Krueger flap cavities.

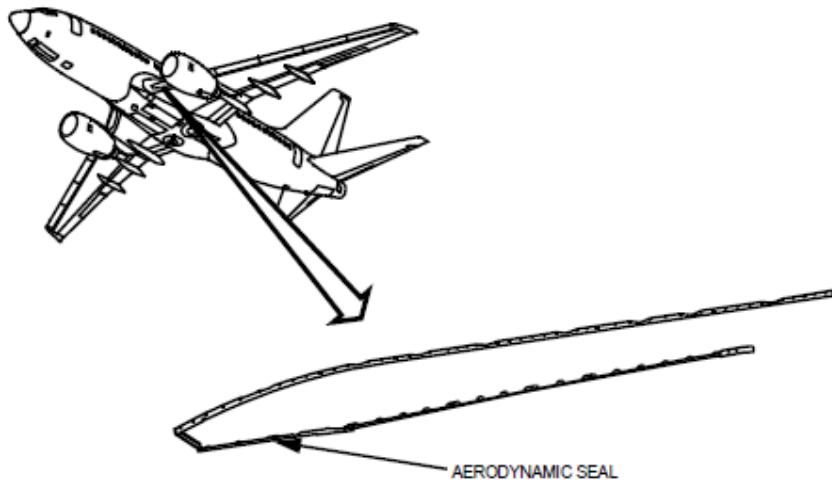
Performance limited weights are reduced by the following for any number of missing items:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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**For -600/-700/-800:**

A combination of one or more seals and/or retainers from Items 57-54-03 through 57-54-09 may be missing.

6	200 lb (91 kg)	350 lb (160 kg)	No penalty
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**57-54-05      Aerodynamic Seal C/T Krueger Flap (Inboard Fixed Leading Edge)**

Only the seals and/or seal retainers around the inboard Krueger flap cavities (Krueger flaps #2 and #3) are allowed to be missing. Seals that extend partially over the outboard Krueger flap cavities may not be missing. Any seal retainers that support the seals which extend partially over the outboard Krueger flap cavity may not be missing, even if these seal retainers are located entirely in the inboard Krueger flap cavities.

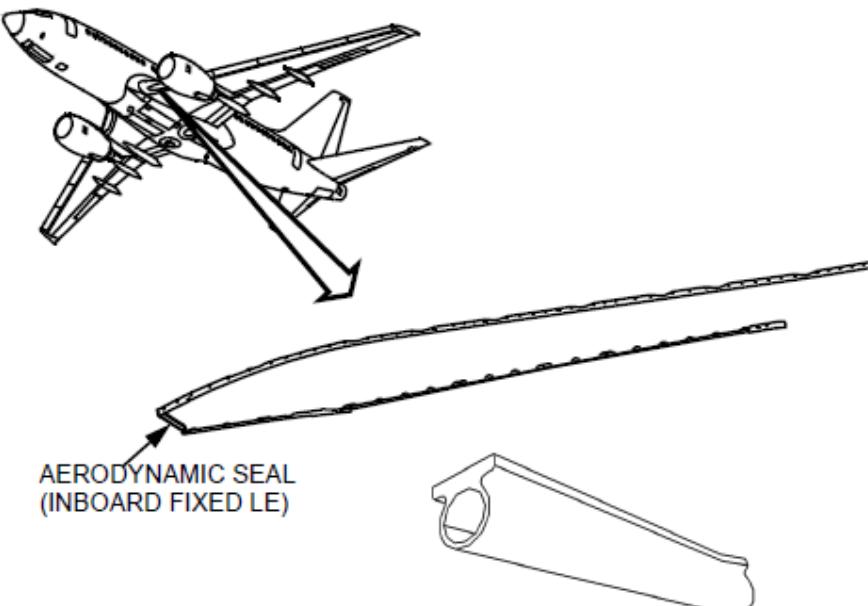
Performance limited weights are reduced by the following for any number of missing items:

<b>Number Installed</b>	<b>Takeoff</b>	<b>Enroute Climb</b>	<b>Approach and Landing</b>
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For -600/-700/-800:

A combination of one or more seals and/or retainers from Items 57-54-03 through 57-54-09 may be missing.

2	200 lb (91 kg)	350 lb (160 kg)	No penalty
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**57-54-06      Aerodynamic Seal Retainer C/T Seal (Krueger Flap - Fwd)**

Only the seals and/or seal retainers around the inboard Krueger flap cavities (Krueger flaps #2 and #3) are allowed to be missing. Seals that extend partially over the outboard Krueger flap cavities may not be missing. Any seal retainers that support the seals which extend partially over the outboard Krueger flap cavity may not be missing, even if these seal retainers are located entirely in the inboard Krueger flap cavities.

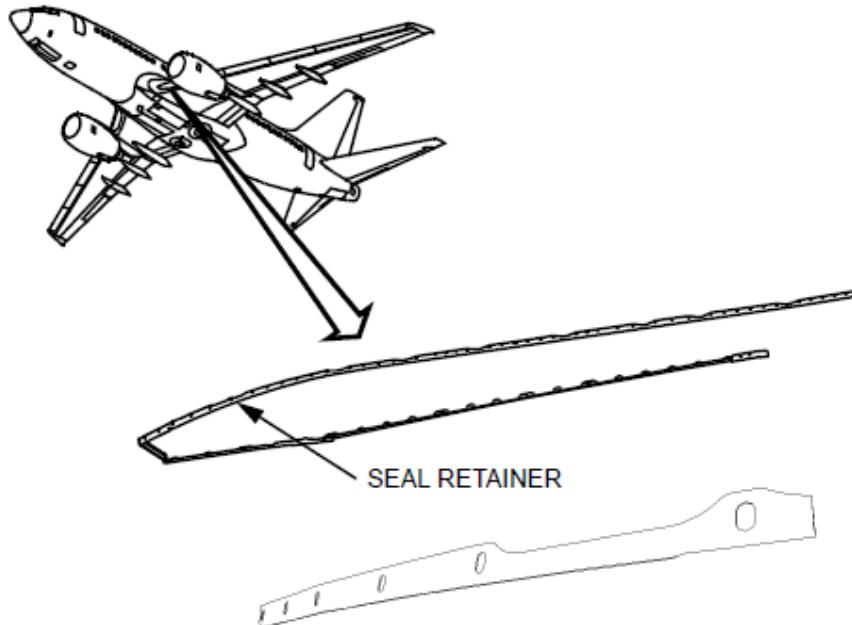
Performance limited weights are reduced by the following for any number of missing items:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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**For -600/-700/-800:**

A combination of one or more seals and/or retainers from Items 57-54-03 through 57-54-09 may be missing.

18	200 lb (91 kg)	350 lb (160 kg)	No penalty
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**57-54-07      Aerodynamic Seal Retainer C/T Seal (Krueger Flap - Aft)**

Only the seals and/or seal retainers around the inboard Krueger flap cavities (Krueger flaps #2 and #3) are allowed to be missing. Seals that extend partially over the outboard Krueger flap cavities may not be missing. Any seal retainers that support the seals which extend partially over the outboard Krueger flap cavity may not be missing, even if these seal retainers are located entirely in the inboard Krueger flap cavities.

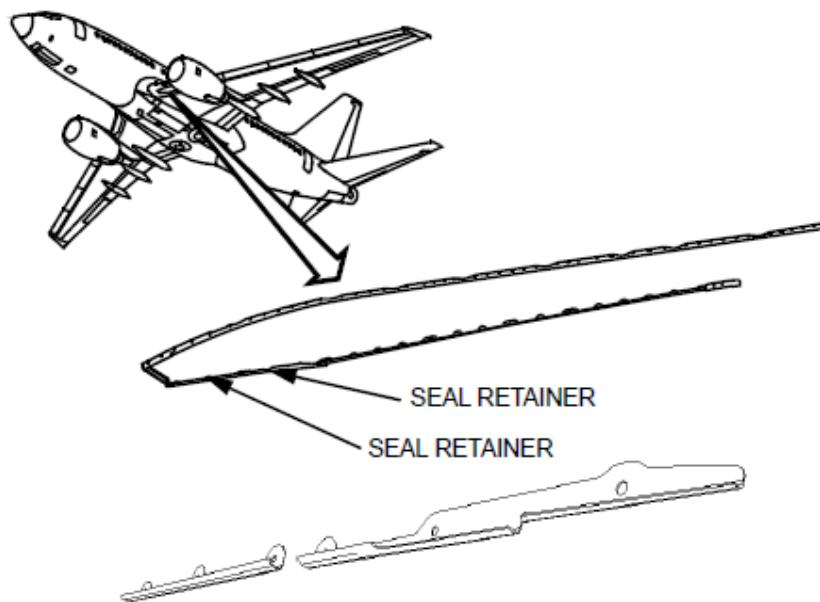
Performance limited weights are reduced by the following for any number of missing items:

<b>Number Installed</b>	<b>Takeoff</b>	<b>Enroute Climb</b>	<b>Approach and Landing</b>
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**For -600/-700/-800:**

A combination of one or more seals and/or retainers from Items 57-54-03 through 57-54-09 may be missing.

14	200 lb (91 kg)	350 lb (160 kg)	No penalty
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**57-54-08      Aerodynamic Seal Retainer Assembly C/T Krueger Flap (Aft)**

Only the seals and/or seal retainers around the inboard Krueger flap cavities (Krueger flaps #2 and #3) are allowed to be missing. Seals that extend partially over the outboard Krueger flap cavities may not be missing. Any seal retainers that support the seals which extend partially over the outboard Krueger flap cavity may not be missing, even if these seal retainers are located entirely in the inboard Krueger flap cavities.

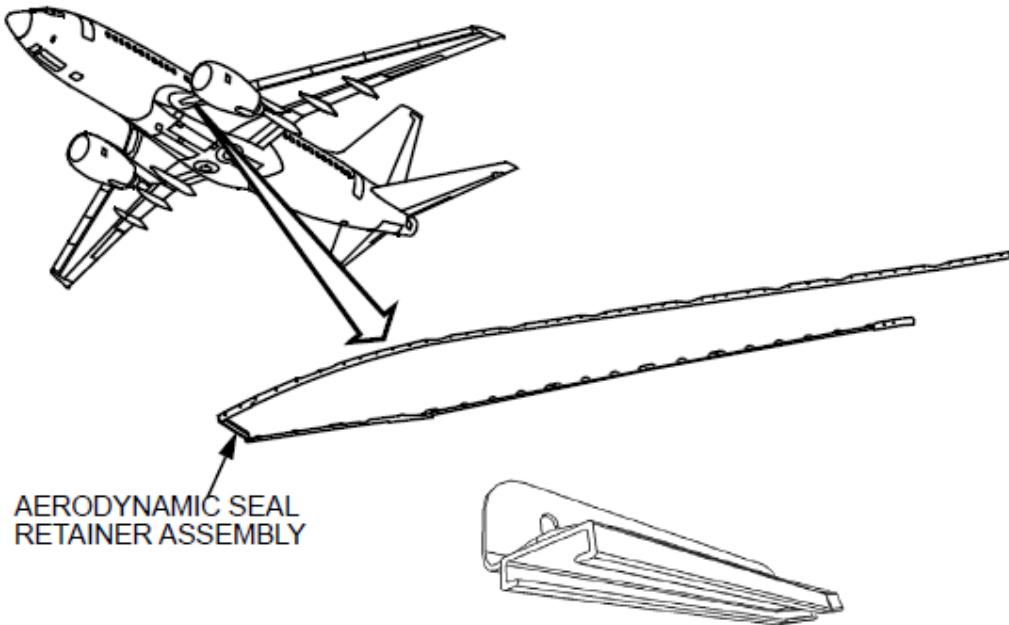
Performance limited weights are reduced by the following for any number of missing items:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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**For -600/-700/-800:**

A combination of one or more seals and/or retainers from Items 57-54-03 through 57-54-09 may be missing.

2	200 lb (91 kg)	350 lb (160 kg)	No penalty
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**57-54-09      Bulb Seal C/T Krueger Flap (Aft)**

Only the seals and/or seal retainers around the inboard Krueger flap cavities (Krueger flaps #2 and #3) are allowed to be missing. Seals that extend partially over the outboard Krueger flap cavities may not be missing. Any seal retainers that support the seals which extend partially over the outboard Krueger flap cavity may not be missing, even if these seal retainers are located entirely in the inboard Krueger flap cavities.

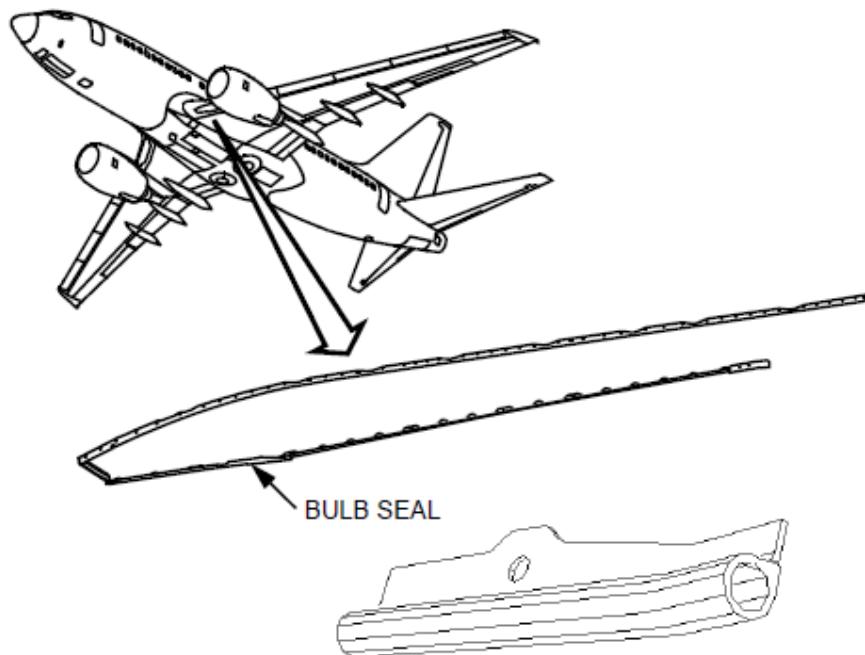
Performance limited weights are reduced by the following for any number of missing items:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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**For -600/-700/-800:**

A combination of one or more seals and/or retainers from Items 57-54-03 through 57-54-09 may be missing.

6	200 lb (91 kg)	350 lb (160 kg)	No penalty
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**57-54-10 Seal-Blade, Inboard Krueger Flap, Spanwise, Aft**

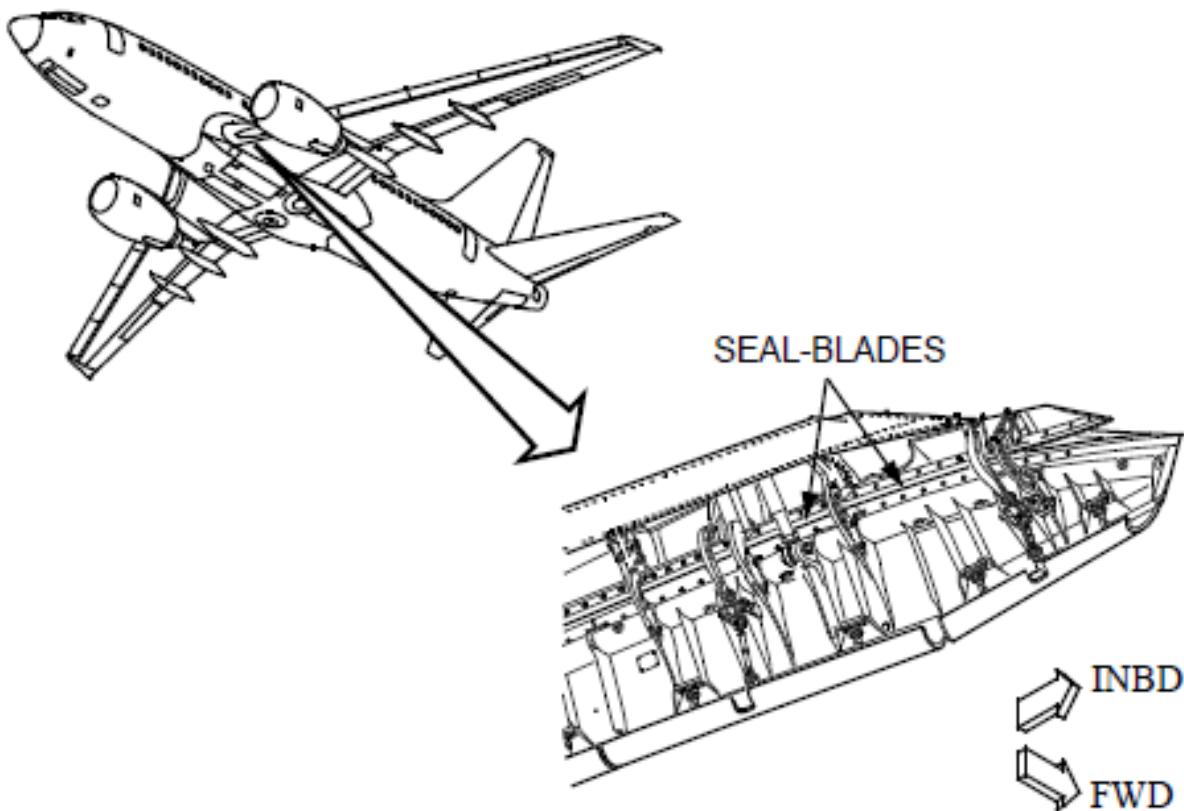
Performance limited weights are reduced by the following:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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**For -600/-700/-800:**

Only the seals around the inboard Krueger Flap may be missing. Takeoff and Landing Speeds - No Impact. The takeoff and landing/approach penalties are per missing seal. The enroute penalty should be applied per wing semi-span.

4	400 lb (182 kg)	Negligible	400 lb (182 kg)
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**For -600/-700/-800/-900/-900ER:**

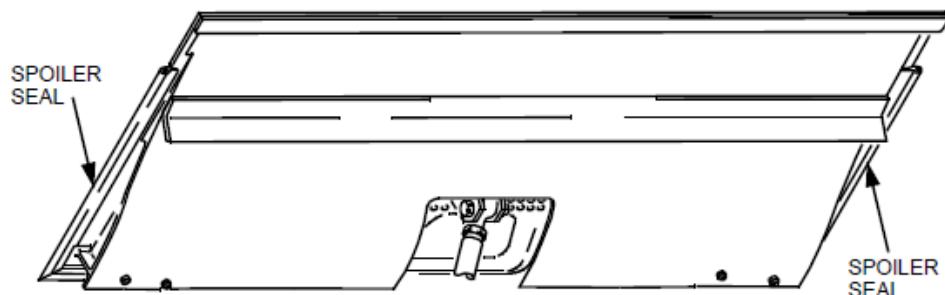
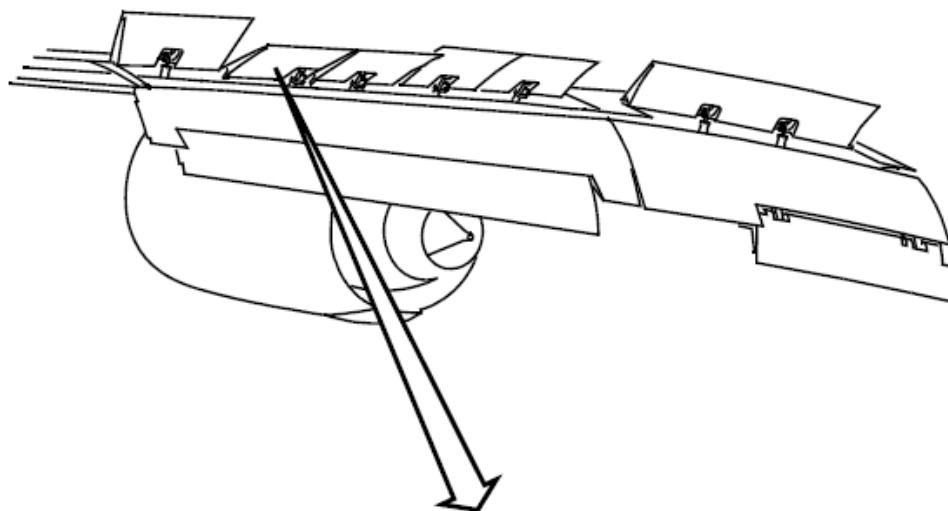
**57-71-01      Spoiler 1, 2, 3, 10, 11, 12 Seals**

For -600/-700/-800/-900ER:

NOTE: There is one seal installed inboard for spoilers 1 and 12, two seals installed for spoilers 2, 3, 10 and 11.

Performance limited weights are reduced by the following:

Number Installed	Takeoff & Landing	Enroute Climb
Any or all may be missing for a negligible penalty.		
10	Negligible	Negligible



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## Section 3

## ATA 78

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**78-30-01 Thrust Reverser Blocker Door and Drag Link Sets**

NOTE: Removal of blocker doors and drag links must be done as a set.

Performance limited weights are reduced by the following for each missing set:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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For -600/-700/-800/-900/-900ER:

One per thrust reverser side for a total of four may be missing.

Dry Runway

20	300 lb (136 kg)	300 lb (136 kg)	300 lb (136 kg)
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For -600/-700/-800/-900/-900ER:

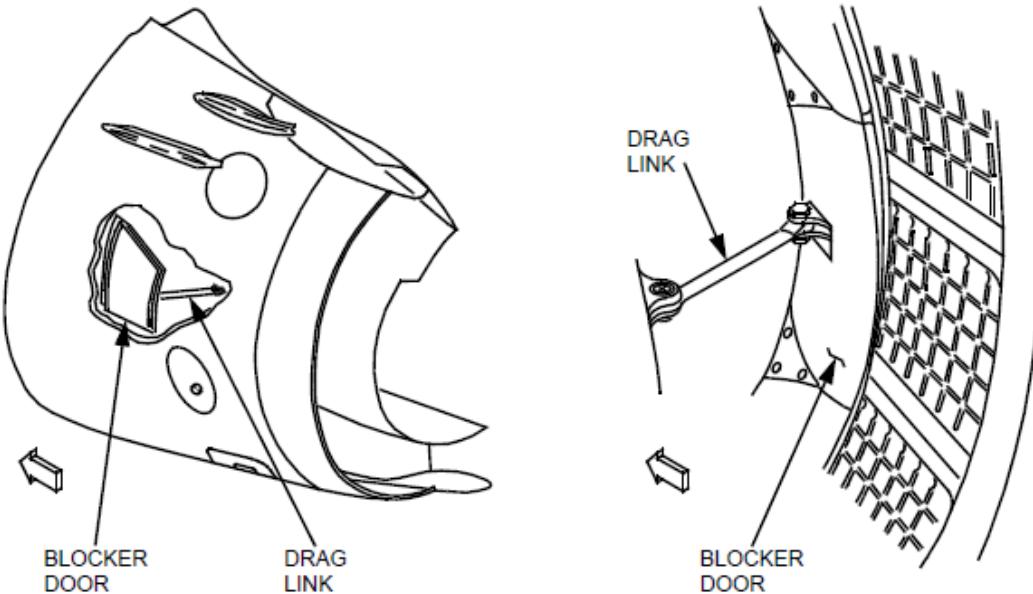
Wet Runway

20	8250 lb (3742 kg)	300 lb (136 kg)	300 lb (136 kg)
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For -600/-700/-800/-900/-900ER:

Contaminated Runway

20	8250 lb (3742 kg)	300 lb (136 kg)	8250 lb (3742 kg)
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VIEW FORWARD OUTSIDE  
THRUST REVERSER  
TRANSLATING SLEEVE

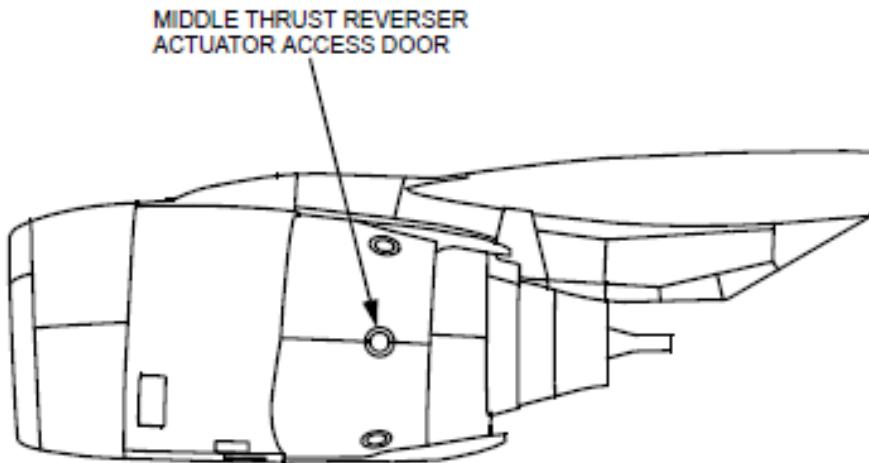
VIEW AFT INSIDE  
THRUST REVERSER  
TRANSLATING SLEEVE

**78-30-04      Middle Thrust Reverser Sleeve ("D" Duct) Actuator Access Doors**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing door.

Number Installed	Takeoff & Landing	Enroute Climb
Any number may be missing.		
4	Negligible penalty	Negligible penalty



LEFT SIDE VIEW NO. 1 AND 2 ENGINE

**78-30-05      Thrust Reverser Blocker Door Caps**

**For -600/-700/-800/-900/-900ER:**

One thrust reverser blocker door cap per reverser side can be missing for total of four per airplane. On dry runways, there are no performance penalties. On wet/contaminated runways, the loss of one cap will degrade aircraft reverse thrust capability for takeoff by the following for each missing cap:

Number Installed	Takeoff	Enroute Climb	Approach and Landing
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**For -600/-700/-800/-900/-900ER:**

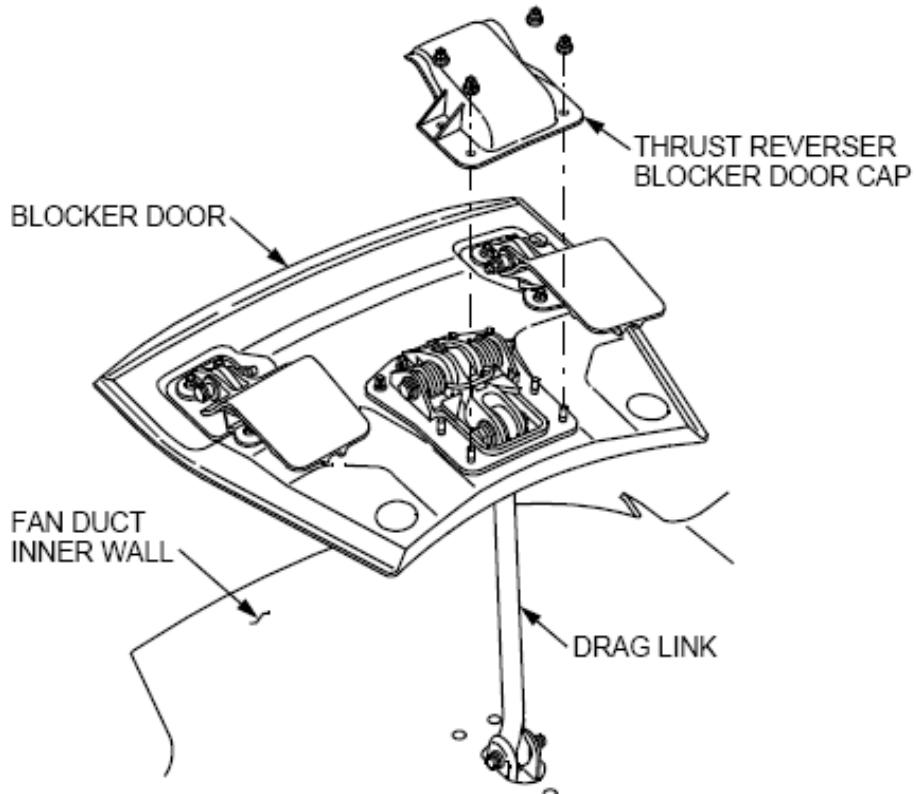
Dry Runway

20	No penalty	No penalty	No penalty
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**For -600/-700/-800/-900/-900ER:**

Wet/Contaminated Runway

20	150 lb (68 kg)	No penalty	No penalty
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**78-31-04 Thrust Reverser Track Fairing Seals**

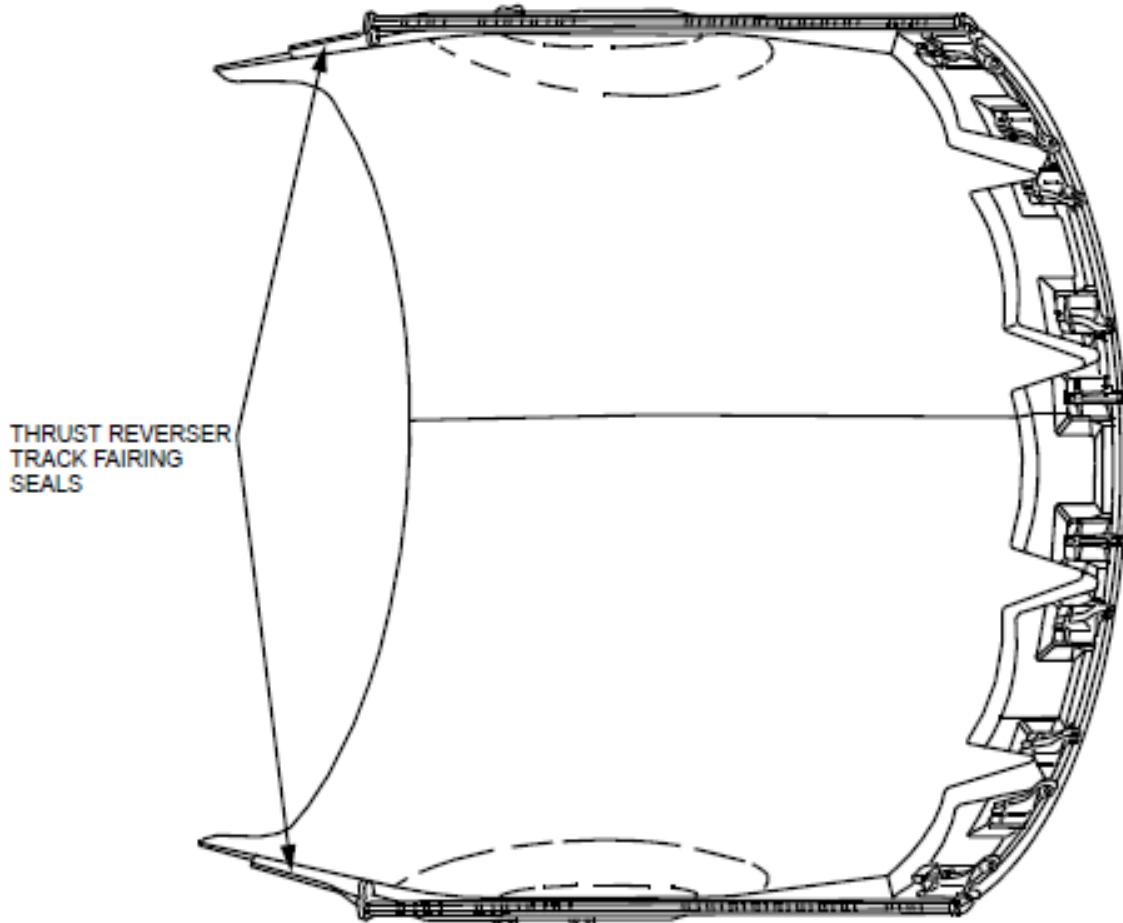
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing seal:

Number Installed	Takeoff & Landing	Enroute Climb
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Any number may be missing.

8	Negligible penalty	Negligible penalty
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**78-31-05 Thrust Reverser Cascades**

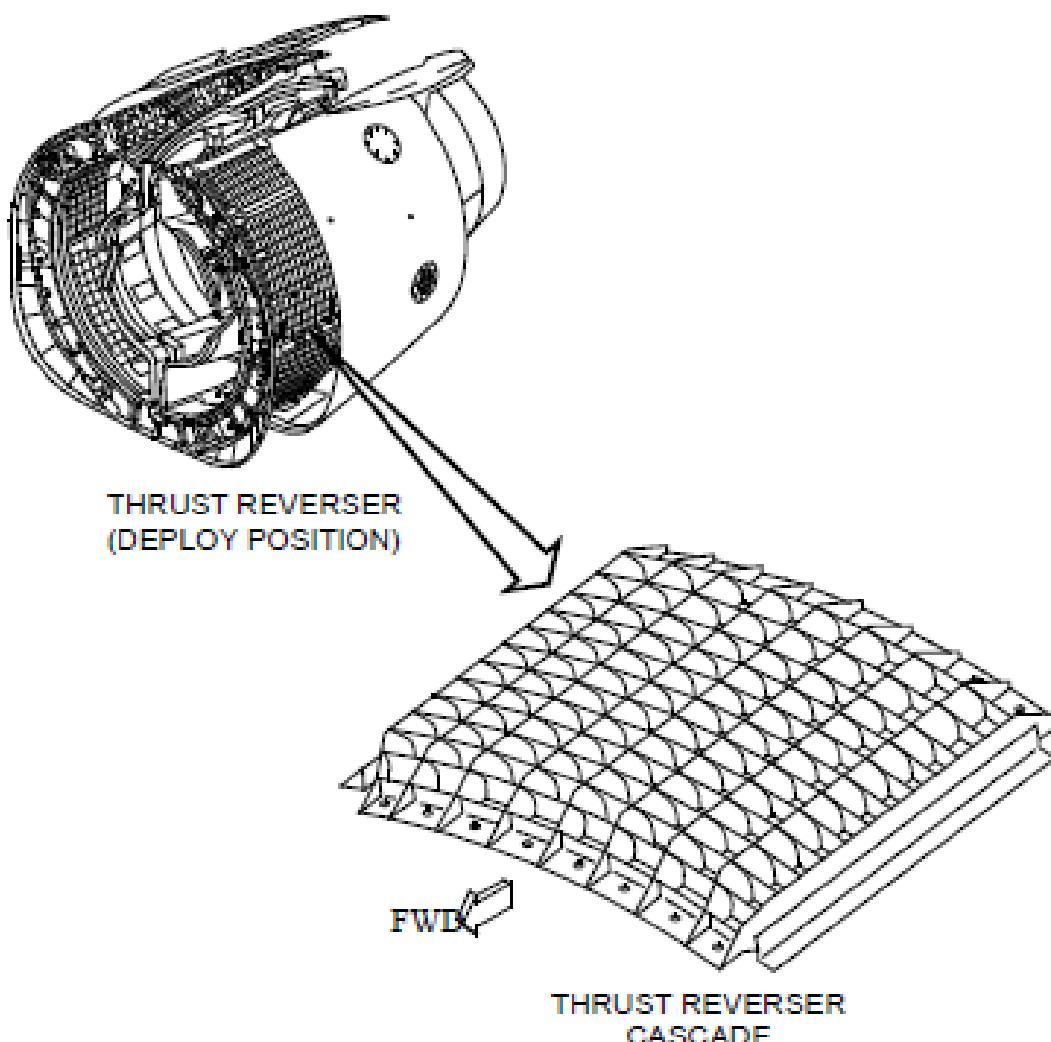
**For -600/-700/-800/-900/-900ER:**

**NOTE 1:** The affected thrust reverser must be locked out. The thrust reverser on the opposite engine must operate normally. No credit for reverse thrust may be taken on the affected engine.

**NOTE 2:** Refer to MMEL Item 78-1 for inoperative thrust reverser.

Performance limited weights are reduced by the following for each missing cascade:

Number Installed	Takeoff & Landing	Enroute Climb
One per thrust reverser side on one engine (for a total of two) may be missing.		
24	No penalty	No penalty

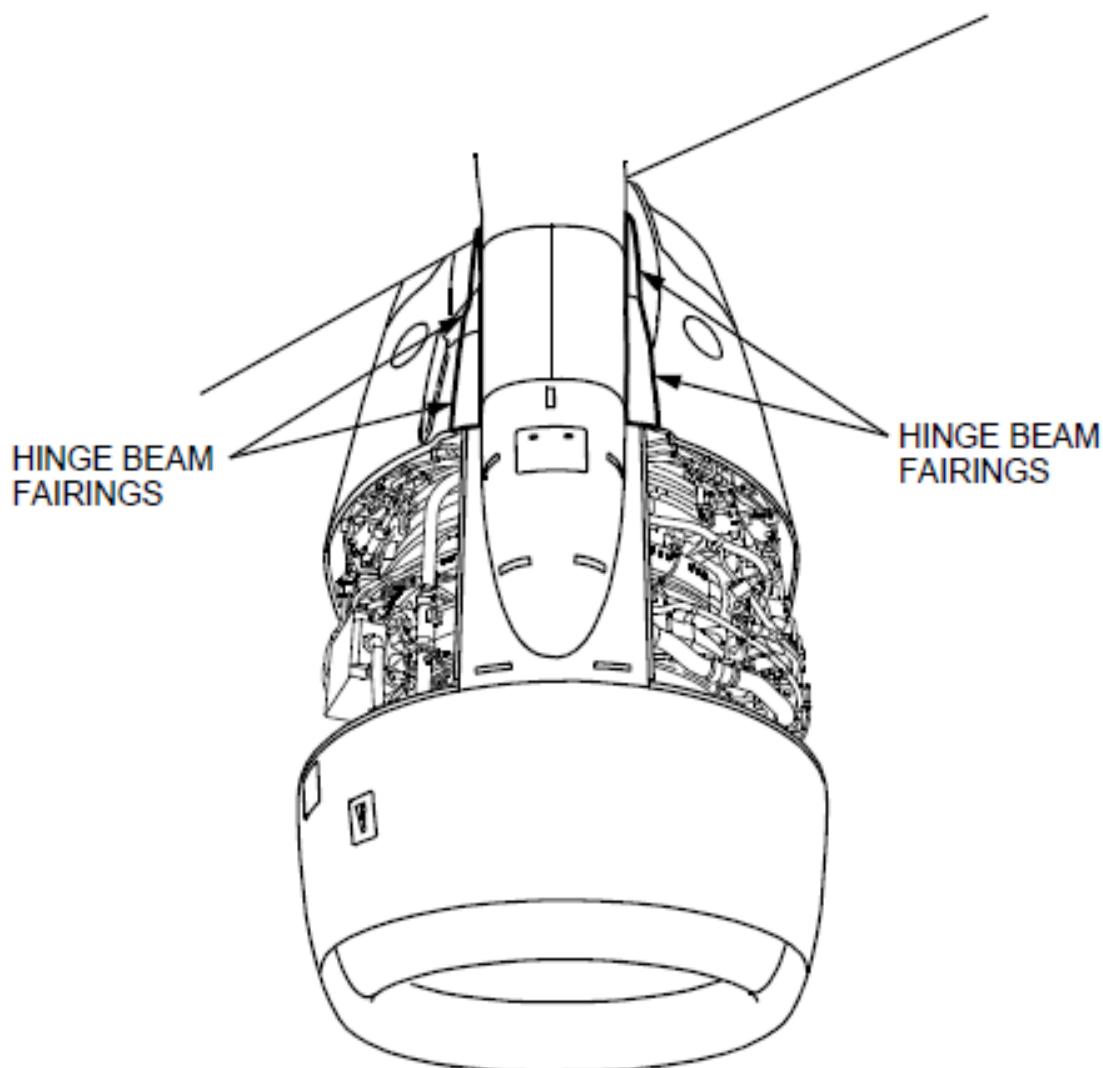


**78-31-06 Thrust Reverser Hinge Beam Fairings**

For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing fairing:

Number Installed	Takeoff & Landing	Enroute Climb
Any number may be missing.		
8	Negligible penalty	Negligible penalty



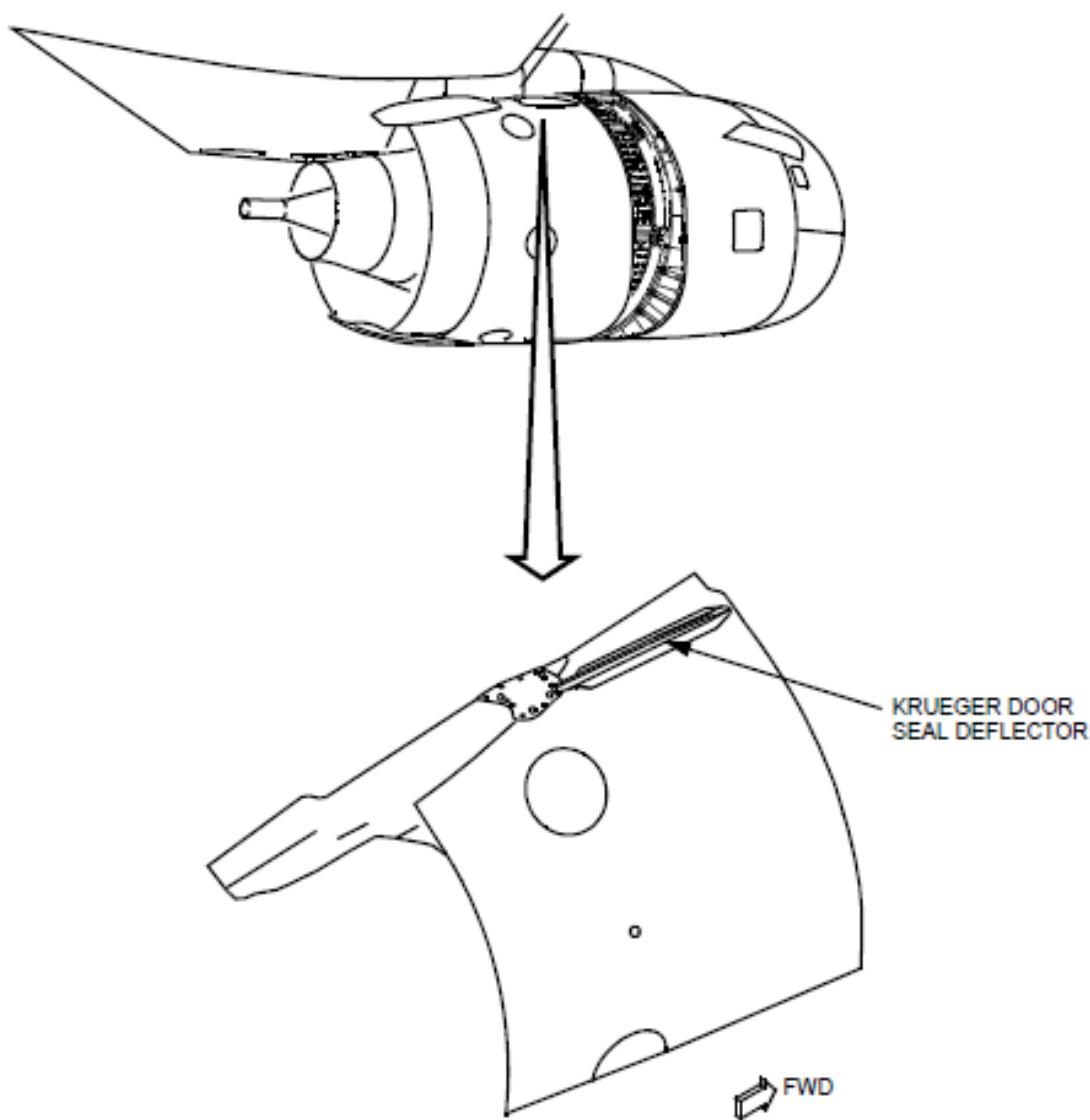
**78-31-07 Thrust Reverser Krueger Door Seal Deflector**

For -600/-700/-800/-900/-900ER:

NOTE 1: The affected thrust reverser must be locked out. The thrust reverser on the other side must operate normally. No credit for reverse thrust may be taken on the affected engine.

NOTE 2: Refer to MMEL Item 78-1 for inoperative thrust reverser.

Number Installed	Takeoff & Landing	Enroute Climb
One may be missing.		
2	Negligible penalty	Negligible penalty



**78-31-08 Thrust Reverser Krueger Door Seal Fairing**

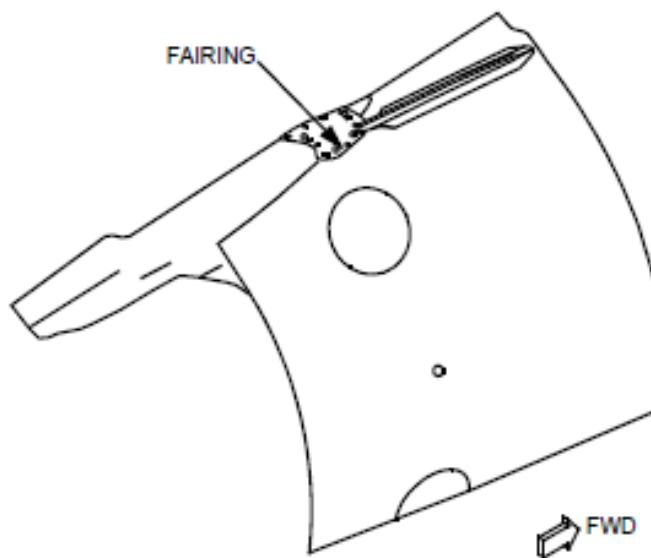
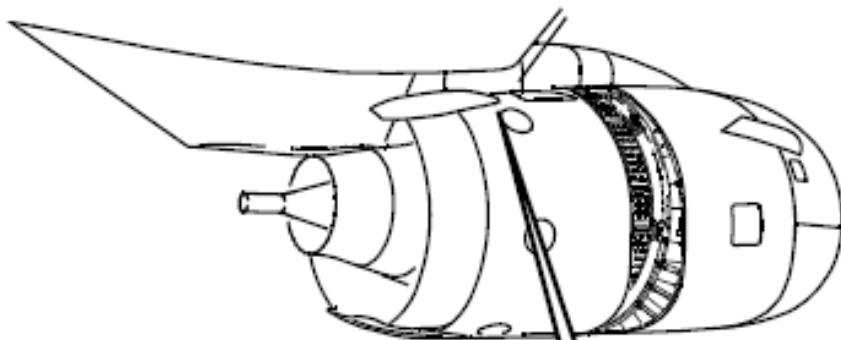
For -600/-700/-800/-900/-900ER:

Performance limited weights are reduced by the following for each missing fairing:

Number Installed	Takeoff & Landing	Enroute Climb
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One or both may be missing.

2	Negligible penalty	Negligible penalty
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**78-32-02 Primary Nozzle Fences**

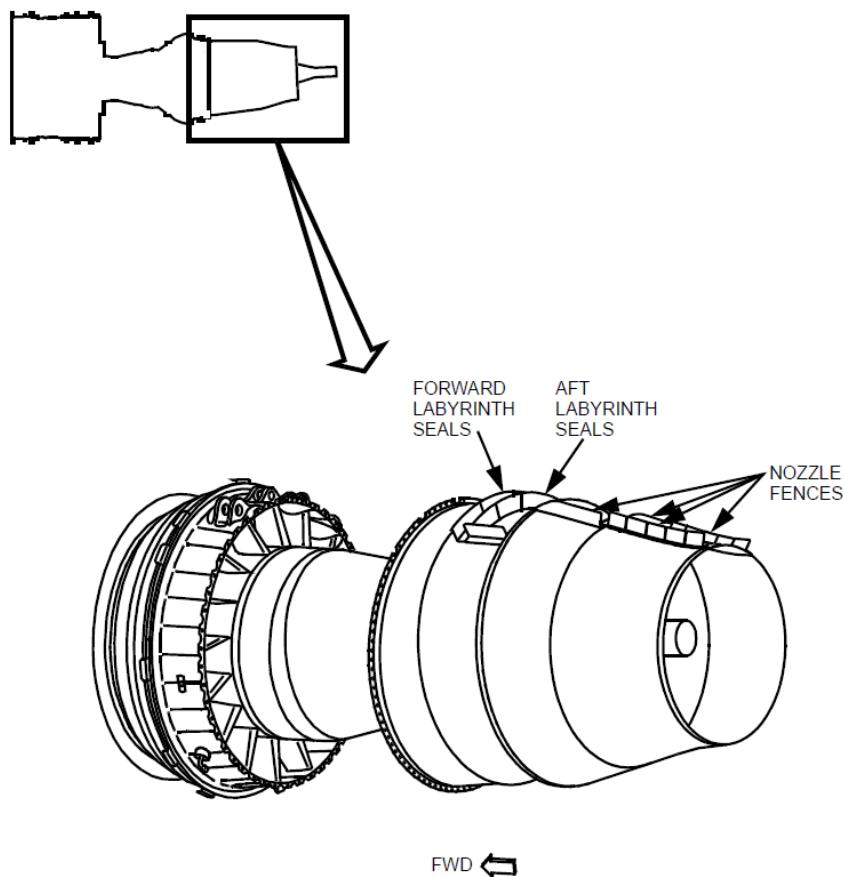
Number Installed	Takeoff & Landing	Enroute Climb
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For assembly part number 314A2610, four per nozzle for a total of eight may be missing for a maximum of 10 days or 125 flights, whichever comes first. Visual inspections of the nozzle and aft fairing for non-normal mechanical deterioration are required every 10 flights within this interval. Replace fasteners proceeding the removal of the P/N 314A2610.

24	No penalty	No penalty
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For assembly part number 314A2630, one aft-most fence per nozzle for a total of two may be missing for a maximum of 10 flights. Visual inspection for non-normal mechanical deterioration of the nozzle and aft fairing are required every flight within this interval. Replace fasteners proceeding the removal of the P/N 314A2630.

12	No penalty	No penalty
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