Total Quality Care

B787

Minimum Equipment List / Component Deviation List

Rev. 01 / March 20, 20120

This document has Auto Generated hyperlinked Table of Contents and List of effective pages.Ideal for Ipad or computer.

CAUTION: This is a Sample document and do not contain updated and complete material.

Civil Aviation approval is placed here

Preface MEL Approval

Place company preparation, review and acceptance here.

Civil Aviation MEL PREAMBLE

The Civil Aviation Preamble is placed here .

Revision Record

MEL Rev xx is revised to match the Boeing DDG Rev. xx dated xxx and FAA MMEL Rev. xx and FAA 787 AFM Appendix CDL Revision xx.

This MEL is applicable to Aircraft xxxMSN: xxxx.

Revision Record

No.	Revision Date	Dev By
0	xxx,xx 2020	

No.	Revision Date	Dev By

Filing Instructions

This MEL is a complete revision..

Revision Highlights

Specific changes in this revision are noted in the following highlights.

General

Document Administration

0.00-01-00.3 Deleted para as CDDG is temporarily suspended and is not offered.

EICAS Messages

Messages

1.00-02-00.7 Corrected spelling. S/B "EICAS" instead of "ECAS".
1.00-02-00.8 Added new EICAS Message.
1.00-02-00.8 Added new EICAS Message.
1.00-02-00.8 Added new EICAS Message.
1.00-02-00.8 Added new EICAS Message.
1.00-02-00.60 Added new EICAS Message.
1.00-02-00.62 Added new EICAS Message.
1.00-02-00.62 Added new EICAS Message.
1.00-02-00.62 Added new EICAS Message.

Introduction

Document Administration

2.00-01-00.2 Deleted Note due duplicate with item 4.

MMEL

ATA 21 - Air Conditioning

Recirculation Fans

2.21-25-01.1 Added the word "lower" for clarification.
2.21-25-01.3 Added the word "lower" for clarification.
2.21-25-01.3 N/A for -10.
2.21-25-01.3 Relief re-numbered to -21-25-01-04.

Forward EE Cooling Exhaust Fan

2.21-27-02.2 Revised statement.
2.21-27-02.2 Revised for applicability to 787-8 and 787-9 airplanes.
2.21-27-02.2 N/A- for 787-10 airplane.
2.21-27-02.2 Revised statement.

ATA 23 - Communications

Audio Control Panels (ACP)

2.23-51-01.1 Added sub-item -01 to clarify relief.

Flight Deck Hand Microphones

2.23-51-02.1 Revised item name to be consistent with updated proviso to comply with PL-58.

2.23-51-02.1 Revised proviso to comply to PL-58.

ATA 24 - Electrical Power

Variable Frequency Starter Generator (VFSG) Systems

2.24-22-01.2 Revised note to add option for 2 CAC inoperative.

2.24-22-01.5 Updated performance info for when APU is running and APU is not running IAW with C/S.

ATA 25 - Equipment/Furnishings

Overhead Flight Crew Rest (OFCR)

2.25-29-01.1 N/A.

ATA 26 - Fire Protection

Main Engine Data Concentrator (MEDC) Channels

2.26-11-02.2 Verification steps renumbered. No technical change.

2.26-11-02.3 Verification steps renumbered. No technical change.

Lower Cargo Compartment Smoke Detectors

2.26-16-01.3 N/A- 787-10 airplane.

Wheel Well Fire Detection System

2.26-17-01.1 N/A- 787-10 airplane.

ATA 28 - Fuel

Item Moved

2.28-22-05.1 Added item description for relief redirect.

Center Tank Jettison Isolation Valves

2.28-31-02.2 Added annotation for clarification.

2.28-31-02.2 Added performance penalty for 787-9 airplanes.

ATA 34 - Navigation

Angle of Attack (AOA) Sensors

2.34-12-03.1 Added additional dispatch condition.

2.34-12-03.1 Changed to "connectors" for clarification.

2.34-12-03.1 Added new step to (M) procedure to address broken vane.

2.34-12-03.2 Changed to "connectors" for clarification.

Radio Altimeter Systems

2.34-33-01.1 N/A".

2.34-33-01.1 Revised (O) note 1 to state message "may" be

displayed instead of "will".

ATA 49 - Airborne Auxiliary Power

APU Air Inlet Door Actuation System

2.49-15-01.1 Revised (O) procedure.

2.49-15-01.2 Revised (O) procedure.

ATA 73 - Engine Fuel and Control

Electronic Engine Controls (EEC) Normal Mode

2.73-21-01.1 N/A.

2.73-21-01.1 N/A-787-10 airplane.

2.73-21-01.1 Added performance data for 787-8 and 787-9 airplanes.

ATA 75 - Bleed Air

Engine Section Stator (ESS) Anti-Ice Valves (RR)

2.75-11-01.2 N/A- 787-10 airplane.

CDL

ATA 21 - Air Conditioning

Cabin Pressure Control System Outflow Valve Doors

3.21-31-01.1 Updated content per AFM CDL revision.

3.21-31-01.1 Updated content per AFM CDL revision.

Negative Pressure Relief Valve Door

3.21-32-01.1 Updated content per AFM CDL Rev 10.

3.21-32-01.1 Updated content per AFM CDL Rev 10.

ATA 23 - Communications

Static Discharger

3.23-61-01.1 Added NOTE.

3.23-61-01.1 Re-worded content.

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Document Purpose

This document is intended to assist airline operations and maintenance organizations in developing the procedures required to operate the airplane in the various nonstandard configurations allowed by the Federal Aviation Administration (FAA) Master Minimum Equipment List (MMEL) and the Airplane Flight Manual (AFM) Appendix Configuration Deviation List (CDL).

Background

Some background information is placed here..

Document Content and Organization

The MEL is divided into five sections as follows:

SECTION 0 - GENERAL

SECTION 1 - EICAS MESSAGES

SECTION 3 - CDL

This section contains all items from the AFM Appendix CDL.

SECTION 4 - MISCELLANEOUS

This section contains information on the use of annotations for airplane model applicability.

Use of Procedures

Some procedures are listed here

Source Document

listing source documents here

Revision Service

The MEL is prepared by TQCARE in coordination with relevant Fleet Captain. :

MELs are available as Adobe Portable Document Format (PDF) digital medium on the EDL and a hard copy is placed in each aircraft library.

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EICAS Messages Cross Reference List

A Cross Reference List of Engine Indication and Crew Alerting System (EICAS) messages and corresponding MEL items is provided in this section.

EICAS Messages

EICAS is the primary means of displaying airplane system information to the flight crew. E.

Maintenance Level Messages

Maintenance level messages are listed here.

Considerations for Dispatch with Displayed EICAS and CMCF Messages

Any monitored faults that affect airplane dispatchability will be displayed

Considerations for Dispatch Using Synoptic Displays

Airplane system faults and/or Common Data Network (CDN) communication faults is explained here

Reduced Vertical Separation Minimum (RVSM)

The MEL include the RVSM affected items

Required Navigation Performance (RNP)

The MEL include the minimum equipment required for RNP operations.

Landing Capability (CAT II, CAT IIIa, CAT IIIb)

The MEL include the minimum equipment required for CAT 2 and Cat 3.

Extended Twin Engine Operations (ETOPs)

B787 is ETOPs capable, This MEL includes the items required for ETOPs.

Communication Management System (Datalink)

The FAA has approved the B787 aircraft data link system to the criteria contained in FAA AC 20-140A.

Head Up Guidance System

The Head up guidance system is approved for use.....

Message	Level	MMEL Item
A/P BACKDRIVE COLUMN	Caution	22-11-02
A/P BACKDRIVE PEDAL	Caution	22-11-02
A/P BACKDRIVE WHEEL	Caution	22-11-02
A/P DISC WARN SYS	Status	31-51-03
ACM BYPASS VALVE L	Status	21-52-09
ACM BYPASS VALVE R	Status	21-52-09
ACM CPRSR OUTLET SNSR L	Status	21-52-04
ACM CPRSR OUTLET SNSR R	Status	21-52-04
ACP CHANNEL CAPT	Status	23-51-01
ACP CHANNEL F/O	Status	23-51-01
ACP CHANNEL FOBS	Status	25-11-02
ACTUATO-R DELTA PRESS	Status	27-02-04
ADF L	Status	34-57-01
ADF R	Status	34-57-01
ADS-B OUT	Advisory	34-42-06
ADS-B OUT DATA L	Status	34-42-06
ADS-B OUT DATA R	Status	34-42-06
AHRU ALIGN MODE L	Memo	N/A
AHRU ALIGN MODE L+R	Memo	N/A
AHRU ALIGN MODE R	Memo	N/A
AHRU ATT MODE L	Advisory	34-21-01-02
AHRU ATT MODE R	Advisory	34-21-01-02
AHRU L	Status	34-21-01-02
AHRU R	Status	34-21-01-02
AILERON SYS	Status	None

General Notes

This section contains the MEL Definitions, the MEL Preamble and all of the MEL items from FAA 787 MMEL .

MEL Definitions

1. System Definitions. System numbers are based on the Air Transport Association (ATA) Specification Number 100 and items are numbered sequentially.
   A. "Item" This column depicts the equipment, system, component, or function listed in the “Item” column.
   B. Repair Categories (A, B, C, and D) are listed on right side of column.
      • Repair intervals are described in definition No. 22.
   C. "Number Installed" (Column 2) This column depicts the number (quantity) of instrument and equipment items normally installed in the aircraft. This number represents the aircraft configuration considered in developing this MEL. Should the number be a variable (e.g., fleet configuration differences, cockpit lighting items, cabin lighting items, cargo restraint components) a number is not required and the “-” symbol is used.
   D. "Number Required for Dispatch" (Column 3) is the minimum number (quantity) of instrument and equipment items required for operation provided the conditions specified in “Remarks or Exceptions”Column 4 are met.

      Note: The MEL must reflect the actual number required for dispatch or an alternate means of configuration control approved by the Administrator.

   E. "Remarks or Exceptions" (Column 4) in this column includes a statement either prohibiting or permitting operation with a specific number of instrument and equipment items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes.
   F. A vertical bar (change bar) in the margin indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.

XXXXXX Airlines B787 MEL PREAMBLE

The following is applicable for authorized certificate holders operating under Civil Avitaion AOC (XXXXXX Airlines).

21 - Air Conditioning

21-25-01 Recirculation Fans
21-25-01-01 787-8
21-25-01-01-01 Upper Recirculation Fan

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

May be inoperative deactivated.

MAINTENANCE (M)

Deactivate the upper recirculation fan (AMM DDG 21-25-01).

1. Using a flight deck multi-function display only, open the following circuit breakers and lock with an INOP tag:
   A. MC-UPPR RECIRC FAN UPPER
   B. RECIRC FAN-UPR

21-25-01 Recirculation Fans
21-25-01-01 787-8
21-25-01-01-02 Lower Recirculation Fans

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

One may be inoperative provided:

a. Inoperative fan is deactivated.
b. Air conditioning packs operate normally.
c. At least three cabin air compressors operate normally.

MAINTENANCE (M)

NOTE 1: For an air conditioning pack to be operating normally, certain items associated with that system must operate normally. See MEL item 21-51-01 for a list of those items.

NOTE 2: For a cabin air compressor to be operating normally, certain items must operate normally. See MEL item 21-52-01-01 for a list of those items.

Deactivate the inoperative lower recirculation fan (AMM DDG 21-25-01).

1. For lower left recirculation fan inoperative:
   A. Using a flight deck multi-function display only, open the following circuit breakers and lock with an INOP tag:
      1) MC-LWR L RECIRC FAN

2) RECIRC FAN-LWR L

2. For lower right recirculation fan inoperative:
   A. Using a flight deck multi-function display only, open the following circuit breakers and lock with an INOP tag:
      1) MC-LWR R RECIRC FAN
      2) RECIRC FAN-LWR R

21-25-01 Recirculation Fans

21-25-01-02 787-9

21-25-01-02-01 Upper Recirculation Fan

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

May be inoperative provided:

a. Fan is deactivated.
b. Air conditioning packs operate normally.
c. At least one left cabin air compressor operates normally.
d. At least one right cabin air compressor operates normally.

MAINTENANCE (M)

NOTE 1: For an air conditioning pack to be operating normally, certain items associated with that system must operate normally. See DDG item 21-51-01 for a list of those items.

NOTE 2: For a cabin air compressor to be operating normally, certain items must operate normally. See DDG item 21-52-01 for a list of those items.

Deactivate the upper recirculation fan (AMM DDG 21-25-01).

1. Using a flight deck multi-function display only, open the following circuit breakers and lock with an INOP tag:
   A. MC-UPPR RECIRC FAN UPPER
   B. RECIRC FAN-UPR

21-25-01 Recirculation Fans

21-25-01-02 787-9

21-25-01-02-02 Lower Recirculation Fans

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

One may be inoperative provided:

a. Inoperative fan is deactivated.
b. Air conditioning packs operate normally.
c. At least one left cabin air compressor operates normally.
d. At least one right cabin air compressor operates normally.

MAINTENANCE (M)

NOTE 1: For an air conditioning pack to be operating normally, certain items associated with that system must operate normally. See DDG item 21-51-01 for a list of those items.

NOTE 2: For a cabin air compressor to be operating normally, certain items must operate normally. See DDG item 21-52-01 for a list of those items.

Deactivate the inoperative lower recirculation fan (AMM DDG 21-25-01).

1. For lower left recirculation fan inoperative:
   A. Using a flight deck multi-function display only, open the following circuit breakers and lock with an INOP tag:
      1) MC-LWR L RECIRC FAN
      2) RECIRC FAN-LWR L
2. For lower right recirculation fan inoperative:
   A. Using a flight deck multi-function display only, open the following circuit breakers and lock with an INOP tag:
      1) MC-LWR R RECIRC FAN
      2) RECIRC FAN-LWR R

21-25-01 Recirculation Fans

21-25-01-03 RECIRC FANS Switch ON Lights

Interval	Installed	Required	Procedure
C	2	0	

21-25-02 Lavatory/Galley Crown Temperature Sensor System

Interval	Installed	Required	Procedure
C	1	0	

22 - Auto Flight

22-11-01 Autoflight Function

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

May be dispatched with AUTOFLIGHT FUNCTION faults provided the A/P DISENGAGE bar is verified to operate normally.

MAINTENANCE (M)

Verify that the A/P DISENGAGE bar operates normally. (AMM DDG 22-11-01).

1. With flaps up, engage the autopilot.
2. Disconnect the autopilot with the A/P DISENGAGE bar.
3. Confirm that the autopilot disconnects, the AUTOPILOT DISC warning message is displayed, the aural is activated, and at least one master warning light is illuminated.

OPERATIONS NOTE

The autopilot system has lost redundancy but operates normally.

22-11-02 Autopilot Backdrive Actuator Systems

22-11-02A One Inoperative

Interval	Installed	Required	Procedure
C	3	2	**(M) (O)**

One may be inoperative provided:

a. Associated backdrive actuator is deactivated.

b. Autopilot disconnect warning indications are verified to operate normally before each departure.

NOTE: For wheel backdrive inoperative, the Bank Angle Protection function will be inoperative and the status message BANK ANGLE PROTECT will be displayed. The airplane must also be dispatched using MEL item 27-02-01.

MAINTENANCE (M)

Deactivate the associated backdrive actuator, and verify that autopilot disconnect indications operate normally prior to each departure (AMM DDG 22-11-02).

1. Deactivate the associated backdrive actuator:
   A. For column backdrive actuator inoperative, using a flight deck multi-function display only, open circuit breaker BACKDRIVE ACTR-R COLUMN and lock with an INOP tag.
   B. For pedal backdrive actuator inoperative, using a flight deck multi-function display only, open circuit breaker BACKDRIVE ACTR-R PEDAL and lock with an INOP tag.
   C. For wheel backdrive actuator inoperative, using a flight deck multi-function display only, open circuit breaker BACKDRIVE ACTR-R CTRL WHEEL and lock with an INOP tag.
2. Prior to each departure, confirm that autopilot disconnect indications operate normally:
   A. With flaps up, engage the autopilot.
   B. Disconnect the autopilot with either autopilot disconnect switch.
   C. Confirm that the AUTOPILOT DISC warning message is displayed, the aural is activated, and at least one master warning light is illuminated.

OPERATIONS (O)

1. Autopilot override and disconnect are affected as follows:
   A. Force override of the autopilot requires much less force than normal.

B. For wheel or pedal backdrive inoperative, if the autopilot is disconnected during the autoland runway alignment maneuver, expect a minor flight path change due to mismatch of the controls and control surfaces.

22-11-02 Autopilot Backdrive Actuator Systems

22-11-02B Two or Three Inoperative

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

May be inoperative provided:

a. Associated backdrive actuator is deactivated.

b. Autopilot disconnect warning indications are verified to operate normally before each departure.

NOTE: For wheel backdrive inoperative, the Bank Angle Protection function will be inoperative and the status message BANK ANGLE PROTECT will be displayed. The airplane must also be dispatched using MEL item 27-02-01.

MAINTENANCE (M)

Deactivate the associated backdrive actuator, and verify that autopilot disconnect indications operate normally prior to each departure (AMM DDG 22-11-02).

1. Deactivate the associated backdrive actuator:
   A. For column backdrive actuator inoperative, using a flight deck multi-function display only, open circuit breaker BACKDRIVE ACTR-R COLUMN and lock with an INOP tag.
   B. For pedal backdrive actuator inoperative, using a flight deck multi-function display only, open circuit breaker BACKDRIVE ACTR-R PEDAL and lock with an INOP tag.
   C. For wheel backdrive actuator inoperative, using a flight deck multi-function display only, open circuit breaker BACKDRIVE ACTR-R CTRL WHEEL and lock with an INOP tag.
2. Prior to each departure, confirm that autopilot disconnect indications operate normally:
   A. With flaps up, engage the autopilot.
   B. Disconnect the autopilot with either autopilot disconnect switch.
   C. Confirm that the AUTOPILOT DISC warning message is displayed, the aural is activated, and at least one master warning light is illuminated.

OPERATIONS (O)

1. Autopilot override and disconnect are affected as follows:
   A. Force override of the autopilot requires much less force than normal.
   B. For wheel or pedal backdrive inoperative, if the autopilot is disconnected during the autoland runway alignment maneuver, expect a minor flight path change due to mismatch of the controls and control surfaces.

23 - Communications

23-11-01 High Frequency (HF) Communication Systems
23-11-01A SATCOM Operates Normally

Interval	Installed	Required	Procedure
C	2	1	(O)

One may be inoperative while conducting operations that require two LRCS provided:

a. Aircraft SATVOICE system operates normally.
b. SATVOICE services are available as a LRCS over the intended route of flight.
c. The ICAO flight plan is updated (as required) to notify ATC of the communications equipment status of the aircraft.
d. If SATCOM voice is to be used over the intended route of flight, SATCOM voice short codes (INMARSAT) or direct dial commercial numbers (IRIDIUM) must be available. If not available, prior coordination with appropriate ATS (FIR) facility is required.
e. Alternate procedures are established and used.

NOTE: SATCOM is to be used only as a backup to normal HF communications.

MAINTENANCE NOTE

If desired, the inoperative HF radio may be deactivated.

1. For left HF radio inoperative, using a flight deck multi-function display only, open circuit breaker HF-L and lock with an INOP tag.
2. For right HF radio inoperative, using a flight deck multi-function display only, open circuit breaker HF-R and lock with an INOP tag.

OPERATIONS (O)

Ensure SATCOM voice or datalink is available over the intended route of flight.

23-11-01 High Frequency (HF) Communication Systems
23-11-01B Not Required By CAR

Interval	Installed	Required	Procedure
D	2	-	

Any in excess of those required by CAR may be inoperative.

MAINTENANCE NOTE

If desired, the inoperative HF radio may be deactivated.

1. For left HF radio inoperative, using a flight deck multi-function display only, open circuit breaker HF-L and lock with an INOP tag.
2. For right HF radio inoperative, using a flight deck multi-function display only, open circuit breaker HF-R and lock with an INOP tag.

OPERATIONS NOTE

(FAR 121.351 states : no person may conduct an extended over-water operation unless the airplane is equipped with at least two independent long-range navigation systems and at least two independent long-range communication systems .....).

23-11-01 High Frequency (HF) Communication Systems

23-11-01-01 HF Datalink

23-11-01-01A Alternate Procedures Required

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

May be inoperative provided alternate procedures are established and used.

OPERATIONS (O)

Alternate procedures must be established and used.

23-11-01 High Frequency (HF) Communication Systems

23-11-01-01 HF Datalink

23-11-01-01B Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	

May be inoperative provided procedures do not require its use.

25 - Equipment Furnishings

25-00-01 Non-Essential Equipment and Furnishings (NEF) ***

Interval	Installed	Required	Procedure
	-	0	

May be inoperative, damaged, or missing provided that the item(s) is deferred in accordance with the operator's NEF deferral program. The NEF program, procedures, and processes must be outlined in the operator's appropriate document. (M) and (O) procedures, if required, must be available to the flight crew and included in the operator's appropriate document.

NOTE: Exterior lavatory door ash trays are not considered NEF items.

26 - Fire Protection

26-11-01 Engine Fire Detector Elements

26-11-01-01 N/A

Interval	Installed	Required	Procedure
	0	0	

26-11-01 Engine Fire Detector Elements

26-11-01-02 GE

Interval	Installed	Required	Procedure
C	20	10	

One element in each detector assembly may be inoperative.

28 - Fuel

28-11-01 Sump Drain Valves

28-11-01-01 Surge Tanks

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

May be inoperative provided there is no evidence of leakage.

MAINTENANCE (M)

Verify that there is no evidence of fuel leakage (AMM DDG 28-11-01).

1. Visually inspect exterior surface location of the inoperative sump drain valve to confirm that there is no evidence of fuel leakage.

28-11-01 Sump Drain Valves

28-11-01-02 Main and Center Tanks

Interval	Installed	Required	Procedure
C	4	3	**(M)**

One may be inoperative provided:

a. There is no evidence of leakage.

b. Alternate procedures are used to prevent water accumulation in associated tank.

MAINTENANCE (M)

Verify that there is no evidence of fuel leakage and use alternate procedures to prevent water accumulation in associated tank (AMM DDG 28-11-01).

1. Visually inspect exterior surface location of the inoperative sump drain valve to verify that there is no evidence of fuel leakage.
2. Use alternate procedures to prevent water accumulation in the associated tank.

29 - Hydraulic Power

29-11-01 Engine Driven Pumps (EDP) Depressurization Function

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative deactivated.

30 - Ice Rain Protection

30-11-01 Wing Ice Protection System (WIPS)

Interval	Installed	Required	Procedure
C	1	0	

May be inoperative provided:

a. Airplane is not operated in known or forecast icing conditions.
b. Flight remains within 120 minutes of landing at a suitable airport.

30-11-01 Wing Ice Protection System (WIPS)
30-11-01-01 Wing Ice Protection Heat Zones

Interval	Installed	Required	Procedure
C	48	46	

One heat zone pair in symmetrical slats may be inoperative.

30-11-01 Wing Ice Protection System (WIPS)
30-11-01-02 Wing Ice Protection Channels

Interval	Installed	Required	Procedure
C	3	2	

31 - Indicating / Recording Systems

31-31-01 Digital Voice-Data Recorder Systems
31-31-01-01 Cockpit Voice Recorder (CVR) Functions
31-31-01-01A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	

31-31-01 Digital Voice-Data Recorder Systems
31-31-01-01 Cockpit Voice Recorder (CVR) Functions
31-31-01-01B Both Inoperative

Interval	Installed	Required	Procedure
A	2	0	

May be inoperative provided:

a. At least one flight data recorder (FDR) function operates normally.
b. Repairs are made within three flight days.

31-31-01 Digital Voice-Data Recorder Systems
31-31-01-02 Flight Data Recorder (FDR) Functions
31-31-01-02A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	

31-31-01 Digital Voice-Data Recorder Systems
31-31-01-02 Flight Data Recorder (FDR) Functions
31-31-01-02B Both Inoperative

Interval	Installed	Required	Procedure
A	2	0	

May be inoperative provided:

a. At least one cockpit voice recorder (CVR) function operates normally.

b. At least one datalink recorder (DLR) function operates normally.
c. Airplane is not dispatched from a designated airport as listed in the operator's MEL unless:
   1) The FDR failure occurs after pushback but prior to takeoff, or
   2) The FDR repair was attempted but was not successful.
d. In those cases where repair is attempted but not successful, the airplane may be dispatched on a flight or a series of flights until the next designated airport where repair must be accomplished prior to dispatch.
e. Repairs are made within three flight days.

31-31-01 Digital Voice-Data Recorder Systems

31-31-01-02 Flight Data Recorder (FDR) Functions

31-31-01-02-01 FDR Recording Parameters Required by CAR

Interval	Installed	Required	Procedure
A	-	-	

Up to three (3) recording parameters may be inoperative provided:

a. At least one cockpit voice recorder (CVR) function operates normally.
b. At least one datalink recorder (DLR) function operates normally.
c. Repairs are made within 20 calendar days.

OPERATIONS NOTE

CAR 1.715 states:.

"An operator shall not operate any aeroplane unless it is equipped with a flight data recorder that uses a digital method of recording and storing data and a method of readily retrieving that data from the storage medium is available ."

31-31-01 Digital Voice-Data Recorder Systems

31-31-01-02 Flight Data Recorder (FDR) Functions

31-31-01-02-02 FDR Recording Parameters Not Required by CAR

Interval	Installed	Required	Procedure
A	-	-	

May be inoperative provided repairs are made prior to the completion of the next heavy maintenance visit.

OPERATIONS NOTE

CAR 1.715 states:

"An operator shall not operate any aeroplane unless it is equipped with a flight data recorder that uses a digital method of recording and storing data and a method of readily retrieving that data from the storage medium is available "

31-31-01 Digital Voice-Data Recorder Systems
31-31-01-03 Datalink Recorder (DLR) Functions
31-31-01-03A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	

31-31-01 Digital Voice-Data Recorder Systems
31-31-01-03 Datalink Recorder (DLR) Functions
31-31-01-03B Both Inoperative

Interval	Installed	Required	Procedure
A	2	0	

May be inoperative provided:

a. At least one flight data recorder (FDR) function operates normally.
b. Repairs are made within three flight days.

31-31-01 Digital Voice-Data Recorder Systems
31-31-01-04 Recorder Independent Power Supply

Interval	Installed	Required	Procedure
C	1	0	

32 - Landing Gear

32-00-01 Landing Gear Synoptic Display

Interval	Installed	Required	Procedure
C	1	0	

OPERATIONS NOTE

For missing data on the synoptic display, selecting an alternate location for the display (captain's inboard, first officer's inboard, or lower) may restore the missing data. Synoptic displays containing missing data may continue to be used to the extent remaining data is useful. Airplane system faults will be annunciated by alerting and status messages.

33 - Lights

33-11-01 Flight Compartment Illumination System

Interval	Installed	Required	Procedure
C	-	-	

Individual lights or light controls may be inoperative provided:

a. Remaining lighting is sufficient to clearly illuminate all instruments and switches.

b. Direct rays are shielded from flight crew eyes.

c. Lighting configuration and intensity is acceptable to the flight crew.

NOTE: Individual button/switch lights and/or annunciations/indications are excluded from this relief.

33-11-01 Flight Compartment Illumination System

33-11-01-01 STORM Switch ON Light

Interval	Installed	Required	Procedure
C	1	0	

34 - Navigation

34-12-01 Pitot Air Data Modules
34-12-01-01 Right Pitot Air Data Module

Interval	Installed	Required	Procedure
B	1	0	**(M)**

May be inoperative provided:

a. Left and center pitot probes are inspected before each departure.
b. Left and center pitot probe heater systems operate normally.
c. Left and center pitot air data modules operate normally.
d. Static air data modules operate normally.
e. AIR DATA/ATT instrument source switches operate normally.
f. Approach minimums do not require its use.

MAINTENANCE (M)

NOTE: The left, center and right pitot and static ADMs are interchangeable.

Inspect the left and center pitot probes before each departure (AMM DDG 34-12-01).

1. Visually examine the left and center pitot probe external installations. Confirm there is no damage or unwanted material in the pitot probe opening.

OPERATIONS NOTE

The NO LAND 3 advisory message will be displayed.

34-12-01 Pitot Air Data Modules
34-12-01-02 Left Pitot Air Data Module

Interval	Installed	Required	Procedure
B	1	0	**(M)**

May be inoperative provided:

a. Right and center pitot probes are inspected before each departure.
b. Right and center pitot probe heater systems operate normally.
c. Right and center pitot air data modules operate normally.
d. Static air data modules operate normally.
e. AIR DATA/ATT instrument source switches operate normally.
f. Approach minimums do not require its use.

MAINTENANCE (M)

NOTE: The left, center and right pitot and static ADMs are interchangeable.

Inspect the right and center pitot probes before each departure (AMM DDG 34-12-01).

1. Visually examine the right and center pitot probe external installations. Confirm there is no damage or unwanted material in the pitot probe opening.

OPERATIONS NOTE

The NO LAND 3 advisory message will be displayed.

34-12-01 Pitot Air Data Modules

34-12-01-03 Center Pitot Air Data Module

Interval	Installed	Required	Procedure
B	1	0	**(M)**

May be inoperative provided:

a. Left and right pitot probes are inspected before each departure.
b. Left and right pitot probe heater systems operate normally.
c. Left and right pitot air data modules operate normally.
d. Static air data modules operate normally.
e. AIR DATA/ATT instrument source switches operate normally.
f. Approach minimums do not require its use.

NOTE: ISFD airspeed will be inoperative. The airplane must also be dispatched using MEL item 34-24-01-02.

MAINTENANCE (M)

NOTE: The left, center and right pitot and static ADMs are interchangeable.

Inspect the left and right pitot probes before each departure (AMM DDG 34-12-01).

1. Visually examine the left and right pitot probe external installations. Confirm there is no damage or unwanted material in the pitot probe opening.

OPERATIONS NOTE

The NO LAND 3 advisory message will be displayed.

35 - Oxygen

35-11-01 Crew Oxygen Pressure Indication System

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

May be inoperative provided:

a. Crew oxygen supply is verified to be above minimum required before each departure.

b. Crew oxygen shutoff valve(s) is verified open.

MAINTENANCE (M)

Verify crew oxygen supply is above minimum required for dispatch and oxygen shutoff valve(s) is open (AMM DDG 35-11-01).

1. Using a flight deck multi-function display only, open circuit breaker CREW OXY-PRESS INDICATION and lock with an INOP tag.
2. Gain access to right side of the Main Equipment Center, outboard of the nose landing gear wheel well.
3. Verify crew oxygen pressure shown on the gauge of the crew oxygen cylinder(s) is above the minimum required for dispatch.
4. Verify crew oxygen cylinder shutoff valve(s) is open.

35-11-01 Crew Oxygen Pressure Indication System

35-11-01-01 Overboard Discharge Indicator Disc

Interval	Installed	Required	Procedure
C	1	0	

May be damaged or missing.

49 - Airborne Auxiliary Power

49-11-01 Auxiliary Power Unit (APU)

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

May be inoperative provided:

a. Left AGCU operates normally.

b. VFSG systems operate normally.

c. Flight remains within 180 minutes of landing at a suitable airport.

MAINTENANCE NOTE

A VFSG system is considered to be operating normally if its associated status message (ELEC GEN SYS L1, L2, R1 or R2) is not displayed.

The APU may be deactivated by opening and collaring P49 panel circuit breakers APUC-1, ACTR-APU INLET DR, and APU FUEL CTRL.

The APU may be removed by installing dispatch tool K49003.

OPERATIONS (O)

1. Flight must remain within 180 minutes of landing at a suitable airport.
2. Start the first engine using the Ground Power Engine Start Supplementary Procedure.

73 - Engine Fuel Control

73-11-01 Engine Main Fuel Pump Strainer Sensors (GE)

Interval	Installed	Required	Procedure
C	2	1	

One may be inoperative provided associated engine fuel/oil heat exchanger sensor operates normally.

74 - Ignition

74-00-01 Ignition Systems
74-00-01-01 N/A- RR

Interval	Installed	Required	Procedure
	0	0	

74-00-01 Ignition Systems
74-00-01-02 GE

Interval	Installed	Required	Procedure
B	4	3	

One may be inoperative provided:

a. Associated engine anti-ice system operates normally.
b. Associated engine BAI valve operates normally.

OPERATIONS NOTE

Associated engine anti-ice system is considered operating normally for dispatch with pressure sensors number 1 inoperative (30-21-01-06-01) or pressure sensors number 2 inoperative (30-21-01-06-02).

75 - Bleed Air

75-11-01 N/A-Engine Section Stator (ESS) Anti-Ice Valves (RR)

75-11-01A N/A-Valve Closed

Interval	Installed	Required	Procedure
	-	-	

75-11-01 N/A-Engine Section Stator (ESS) Anti-Ice Valves (RR)

75-11-01B N/A-Valve Open

Interval	Installed	Required	Procedure
	-	-	

78 - Engine Exhaust

78-31-01 Thrust Reversers

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

One may be inoperative provided:

a. Inoperative reverser is secured in the forward thrust position.

b. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate and secure the inoperative reverser in the forward thrust position (AMM DDG 78-31-01).

1. Verify the track lock is in the locked position (primary or alternate method).
2. Gain access to the hydraulic actuators on each thrust reverser half.
3. Verify one hydraulic actuator on each thrust reverser half is in the locked position.
4. Gain access to the deactivation pins and retainers.
5. Install the deactivation pins in the left and right reverser sleeves.

OPERATIONS (O)

NOTE: After engine start, the ENG REV LIMITED L or R advisory message will be displayed for the engine with the thrust reverser deactivated.

1. For a wet runway, apply the performance adjustments for one thrust reverser inoperative.

80 - Starting

80-11-01 Start Selector Holding/Cutout Systems

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

May be inoperative provided alternate start procedures are used.

OPERATIONS (O)

1. Set START selector to START and hold if required.
2. Set START selector to NORM when RUNNING is displayed.

General Notes

This section contains locations, illustrations and performance information for all of the CDL items from the 787 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 a 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.

Unless otherwise specified, combinations of parts from any system or sub-systems may be missing. Combinations of parts from systems or sub-systems that are not allowed will be specifically listed in the CDL.

Weight Reductions

The performance adjustments are cumulative unless specifically designated adjustments for combination of missing parts are indicated. Where performance adjustments 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 adjustments are listed as no decrement, any accumulative number of items listed as no penalty may be missing without further penalty.

Enroute Diversion Speed Effects

The enroute climb weight adjustments 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	1.9
280 KIAS	2.5
300 KIAS	3.5
320 KIAS	4.3
340 KIAS	5.2

Enroute Fuel Mileage Effects

The drag effects of many 787 CDL items are so small that the changes in flight planning fuel are negligible. For items that have enroute climb weight adjustments listed, an increase in flight planning fuel of 0.44% per (454 kg) of enroute climb weight penalty (non-factored penalty) may be used to account for the drag increase.

23 - Communications

23-61-01 Static Discharger

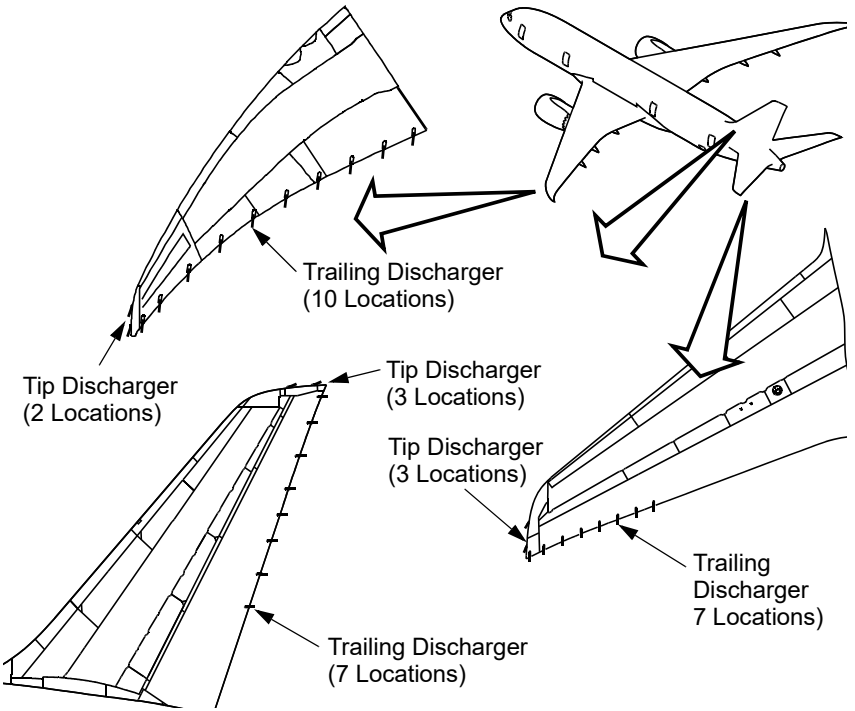
For all airplane operations, a maximum of 27 dischargers may be missing with the following exceptions.

1. 3 of the 6 most outboard trailing type dischargers on each wing may not be missing,
2. 3 of the 5 most outboard trailing type dischargers on each horizontal stabilizer may not be missing,
3. 3 of the 5 top most trailing type dischargers on the vertical stabilizer may not be missing.
4. A minimum of 5 tip type dischargers, one on each wing tip, and one on each stabilizer tip must be installed.

NOTE: For operations with wing tips removed (CDL item 57-31-01), the four trailing type dischargers on each wing just inboard of the removable tip may not be missing. The most outboard remaining trailing type discharger counts as the required tip type discharger.

Reduce performance limited weights by:

Model / Engine	Number installed	Takeoff	Enroute Climb	Approach and Landing
787/All	54	No decrement	No decrement	No decrement


Trailing Discharger
(10 Locations)
Tip Discharger
(2 Locations)
Tip Discharger
(3 Locations)
Tip Discharger
(3 Locations)
Trailing
Discharger
7 Locations)
Trailing Discharger
(7 Locations)

Intentionally
Blank

32 - Landing Gear

32-12-01 Main Landing Gear (Body) Door Seals

Eight per door may be missing, for a total length of 21.25 feet, provided landing gear remains extended for 10 minutes after takeoff and the Appendix 1, Landing Gear Extended, takeoff performance adjustment is applied.

For 787-8, seals along the inboard edge of the door (2 seals per door) and the forward edge of the door inboard of the door vent (3 seals per door) may not be missing.

For 787-9, seals along the inboard edge of the door (2 seals per door) and the forward edge of the door inboard of the door vent (2 seals per door) may not be missing.

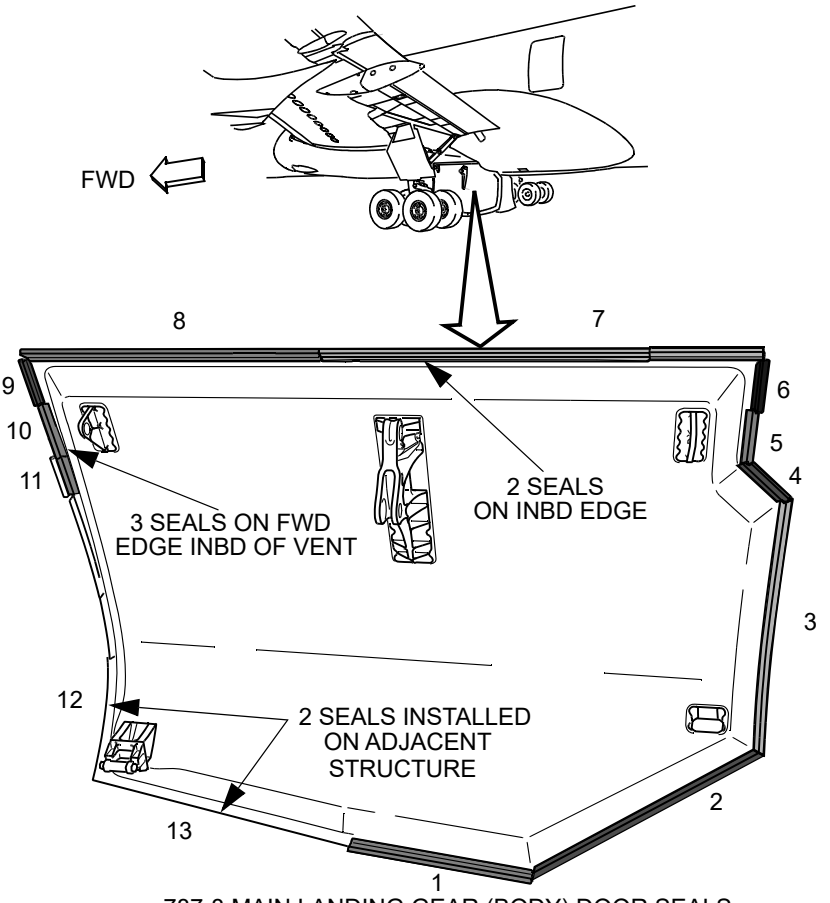
Seals along the inboard edge of the door (2 seals per door) and the forward edge of the door inboard of the door vent (3 seals per door for 787-8, 2 seals per door for 787-9) may not be missing.

No additional weight reductions relative to AFM-DPI Gear Down Dispatch calculations are required for the 787-8 or 787-10.

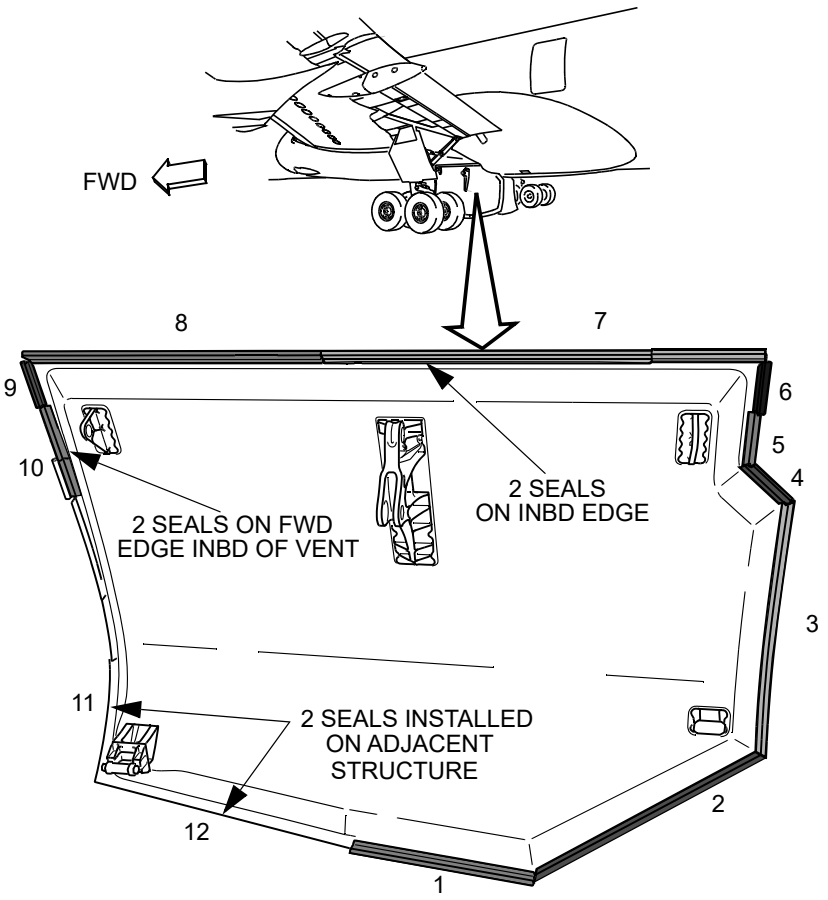
Reduce performance limited weights for each foot of missing seal by:

Model / Engine	Number Installed	Enroute Climb	Approach
787-8/All	26	(68 kg)	(23 kg)
787-9/All	24	(68 kg)	(23 kg)

NOTE: The CDL penalty for seals missing is negligible when operating with the landing gear extended (Appendix 1) for the entire flight.



787-8 MAIN LANDING GEAR (BODY) DOOR SEALS



787-9 MAIN LANDING GEAR (BODY) DOOR SEALS

33 - Lights

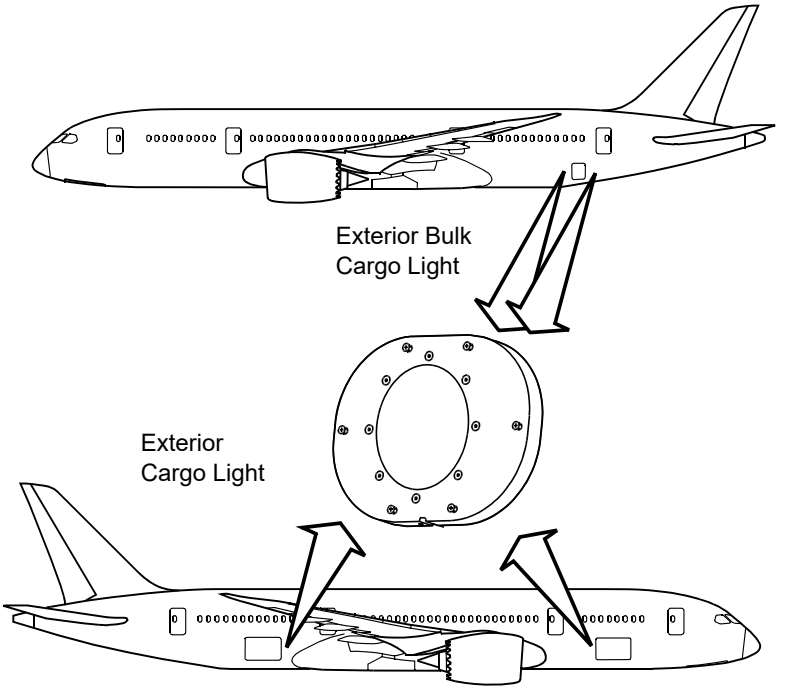
33-37-01 Exterior Cargo Light Lens

Any number may be missing. For each missing light lens, open the appropriate circuit breaker using a flight deck multi-function display and lock with an INOP tag. Cover the light assembly opening with speed tape. Inspect speed tape every other flight. The associated exterior cargo light must be considered inoperative.

NOTE: The airplane must be dispatched using MEL item 33-37-02.

Reduce performance limited weights by:

Model / Engine	Number Installed	Takeoff	Enroute Climb	Approach and Landing
787/All	4	No decrement	No decrement	No decrement



78 - Exhaust

78-31-01 Thrust Reverser Blocker Doors

For GE Engines:

Up to thirteen may be missing. Twelve may be missing from one engine and one may be missing from the other engine.

If blocker doors are missing from both engines, determine the performance limited weight adjustments for each engine separately and then combine the results.

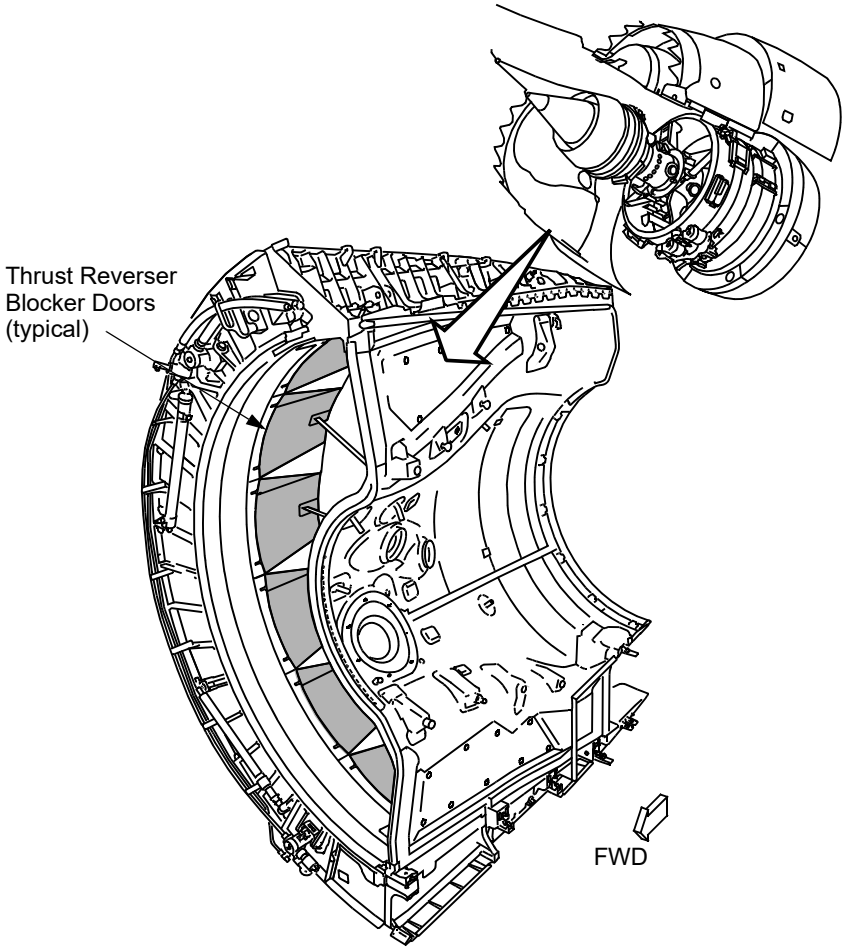
For an engine with one blocker door missing (thrust reverser is operative), reduce the performance limited weights by:

Model / Engine	Number Installed	Takeoff	Enroute Climb	Approach and Landing
787-8/GE	24	(1,497 kg) (Dry)	(862 kg)	(1,021 kg) (Dry)
		(4,581 kg) (Wet)		(1,021 kg) (Wet)
		(13,834 kg) (Contaminated)		(13,834 kg) (Contaminated)
787-9/GE	24	(2,064 kg) (Dry)	(975 kg)	(1,021 kg) (Dry)
		(6,781 kg) (Wet)		(1,021 kg) (Wet)
		(15,581 kg) (Contaminated)		(15,581 kg) (Contaminated)

For an engine with more than one blocker door missing, the thrust reverser must be considered inoperative.

Reduce the performance limited weights for each blocker door missing from this engine by:

Model / Engine	Number Installed	Takeoff	Enroute Climb	Approach and Landing
787-8/GE	24	(1,497 kg)	(862 kg)	(1,021 kg)
787-9/GE	24	(2,064 kg)	(975 kg)	(1,021 kg)


Thrust Reverser
Blocker Doors
(typical)
FWD

Airplane Model Information

Where applicable, airplane model information (annotation) is included above affected text to identify configuration-specific information. The annotation applies only to text aligned immediately below it and any associated indented text. The following example illustrates the model applicability for a Maintenance procedure:

MAINTENANCE (M)