777

MINIMUM EQUIPMENT LIST (MEL)

TG Revision:	No. 22, dated 26 SEP 18
Boeing DDG Revision:	No. 35, dated 16 MAR 18 No. 35-1, dated 11 APR 18 No. 35-2, dated 17 APR 18
FAA MMEL Revision:	No. 22, dated 30 JAN 18
FAA AFM CDL Revision:	No. 3, dated 10 JAN 17

Thai Airways International Public Company Limited

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General

The table below provides a list of airplanes in order of their delivery dates. Model designation, Line, Serial, and Fuselage numbers are supplied by the manufacturer of the airplanes.

No.	Model	Reg.	Name	Line No.	Serial/ Fuselage No.	Delivery Date
1.	2D7	HS-TJA	LAMPHUN	025	27726/WA086	31MAR96
2.	2D7	HS-TJB	UTHAI THANI	032	27727/WA087	13JUN96
3.	2D7	HS-TJC	NAKHON NAYOK	044	27728/WA088	25OCT96
4.	2D7	HS-TJD	MUKDAHAN	051	27729/WA089	19DEC96
5.	2D7	HS-TJG	PATTANI	100	27732/WA092	31OCT97
6.	2D7	HS-TJH	SUPHAN BURI	113	27733/WA093	09JAN98
7.	3D7	HS-TKA	SRIWANNA	156	29150/WB601	23DEC98
8.	3D7	HS-TKB	CHAINARAI	170	29151/WB602	30DEC98
9.	3D7	HS-TKC	KWANMUANG	250	29211/WB603	18OCT99
10.	3D7	HS-TKD	THEPALAI	260	29212/WB604	08DEC99
11.	3D7	HS-TKE	SUKHIRIN	304	29213/WB605	17OCT00
12.	3D7	HS-TKF	LAHAN SAI	310	29214/WB606	09DEC00
13.	2D7ER	HS-TJR	NAKHON SAWAN	588	34586/WC531	01NOV06
14.	2D7ER	HS-TJS	PHRA NAKHON	595	34587/WC532	09NOV06
15.	2D7ER	HS-TJT	PATHUM WAN	596	34588/WC533	17NOV06
16.	2D7ER	HS-TJU	PHICHIT	599	34589/WC534	08DEC06
17.	2D7ER	HS-TJV	NAKHON PATHOM	665	34590/WC535	24SEP07
18.	2D7ER	HS-TJW	PHETCHABUN	672	34591/WC536	29OCT07
19.	3ALER	HS-TKK	PHILAVAN	1030	41520/WE271	2AUG12
20.	3ALER	HS-TKL	SUNANDA	1049	41521/WE272	30OCT12
21.	3ALER	HS-TKM	PRABHASRI	1082	41522/WE273	07MAR13
22.	3ALER	HS-TKN	MEDININAT	1091	41523/WE274	09APR13
23.	3ALER	HS-TKO	VIMOLMASSIRI	1107	41524/WE275	11JUN13
24.	3ALER	HS-TKP	SRI-AMPHORN	1119	41525/WE276	19JUL13
25.	3ALER	HS-TKQ	KHEMARAT	1129	41526/WE277	26AUG13
26.	3ALER	HS-TKR	HAT YAI	1145	41527/WE278	22OCT13
27.	3D7ER	HS-TKU	ACHARASOBHIT	1166	42110/WE441	21JAN14
28.	3D7ER	HS-TKV	SUCHITRA	1215	42111/WE442	10JUL14

No.	Model	Reg.	Name	Line No.	Serial/ Fuselage No.	Delivery Date
29.	3D7ER	HS-TKW	MUKDASAYAM	1228	42112/WE443	27AUG14
30.	3D7ER	HS-TKX	SUDHARMA	1267	42113/WE444	20JAN15
31.	3D7ER	HS-TKY	YUBHAPHAKA	1310	42114/WE445	22JUN15
32.	3D7ER	HS-TKZ	SULALIVAN	1338	42115/WE446	28SEP15

General

The following abbreviations may be found throughout the manual. Some abbreviations may also appear in lowercase letters. Abbreviations having very limited use are explained in the chapter where they are used.

A	
ABV	Above
A/C	Air Conditioning
AC	Alternating Current
ACARS	Aircraft Communications Addressing and Reporting System
ACP	Audio Control Panel
ACT	Active
ADC	Air Data Computer
ADF	Automatic Direction Finder
ADI	Attitude Director Indicator
ADIRS	Air Data Inertial Reference System
ADIRU	Air Data Inertial Reference Unit
AFDS	Autopilot Flight Director System
AFM	Airplane Flight Manual (FAA approved)
A/G	Air/Ground
AGL	Above Ground Level
AIL	Aileron
ALT	Altitude
ALTN	Alternate
AM	Amplitude Modulation
AMI	Airline Modifiable Information
ANP	Actual Navigational Performance
ANT	Antenna
AOA	Angle of Attack
A/P	Autopilot
APL	Airplane
APP	Approach
APU	Auxiliary Power Unit
ARINC	Aeronautical Radio, Incorporated

A	
ARPT	Airport
ARR	Arrival
ASA	Autoland Status Annunciator
ASYM	Asymmetry
A/T	Autothrottle
ATA	Actual Time of Arrival
ATC	Air Traffic Control
ATT	Attitude
AUTO	Automatic
AUTO–THROT	Autothrottle
AUX	Auxiliary
AVAIL	Available
B	
BARO	Barometric
BAT	Battery
B/CRS	Back Course
BFO	Beat Frequency Oscillator
BKR	Breaker
BLD	Bleed
BLW	Below
BRG	Bearing
BRT	Bright
BTL	Bottle
C	
C	Captain Celsius Center Cool
CAAT	The Civil Aviation Authority of Thailand
CANC	Cancel
CAP	Capture
CAPT	Captain
CB	Circuit Breaker

C	
CDU	Control Display Unit
CG	Center of Gravity
CHR	Chronograph
CKT	Circuit
CL	Close
CLB	Climb
CLR	Clear
CMD	Command
CO	Company
COMM	Communication
COMP	Comparator
COMPT	Compartment
CON	Continuous
CONFIG	Configuration
CONT	Control
COOL	Cooling
CRS	Course
CRT	Cathode Ray Tube
CRZ	Cruise
CTL	Control
CTR	Center
CWS	Control Wheel Steering
D	
DA(H)	Decision Altitude (Height)
DC	Direct Current
DDG	Dispatch Deviations Guide
DEL	Delete
DEP	Departure
DEPR	Depressurize
DES	Descent
DH	Decision Height
DIFF	Differential
DISC	Disconnect

D	
DISCH	Discharge
DK	Deck
DME	Distance Measuring Equipment
DN	Down
DSPL	Display
E	
E/D	End of Descent
E/E	Electrical/Electronic
EEC	Electronic Engine Control
EFI	Electronic Flight Instruments
EFIS	Electronic Flight Instrument System
EGT	Exhaust Gas Temperature
EICAS	Engine Indication and Crew Alerting System
ELEC	Electrical
ELEV	Elevator
EMER	Emergency
ENG	Engine
ENT	Entry
EO	Engine Out
EPR	Engine Pressure Ratio
EQPT or EQUIP	Equipment
ETOPS	Extended Range Operation with Twin Engine Airplanes
EVAC	Evacuation
EXEC	Execute
EXT	Extend or External
F	
F	Fahrenheit
FADEC	Full Authority Digital Engine Control
FCC	Flight Control Computer
FCOM	Flight Crew Operations Manual
FD, F/D or FLT DIR	Flight Director
FF	Fuel Flow
FILT	Filter

F	
FL CH or FLCH	Flight Level Change
FLT	Flight
FMA	Flight Mode Annunciations
FMC	Flight Management Computer
FMS	Flight Management System
FOM	Flight Operations Manual
F/O or F O	First Officer
FPA	Flight Path Angle
FPM	Feet Per Minute
FPV	Flight Path Vector
FREQ	Frequency
F/S	Fast/Slow
FT	Feet
FWD	Forward
FWSOV	Fire Wall Shut Off Valve
G	
GA	Go–Around
GEN	Generator
GMT	Greenwich Mean Time
GND	Ground
GPS	Global Positioning System
GPWS	Ground Proximity Warning System
G/S	Glide Slope
GS	Ground Speed
H	
HDG	Heading
HF	High Frequency
HI	High
HLD	Hold
HPSOV	High Pressure Shut Off Valve
HSI	Horizontal Situation Indicator
HYD	Hydraulic

I	
IAS	Indicated Airspeed
IDENT	Identification
IGN	Ignition
IGS	Instrument Guidance System
ILS	Instrument Landing System
INBD	Inboard
IND	Indicator
IND LTS	Indicator Lights
INIT	Initialization
INOP	Inoperative
INSTR	Instrument
INTC	Intercept
INT or INTPH	Interphone
IRS	Inertial Reference System
ISA	International Standard Atmosphere
ISFD	Integrated Standby Flight Display
ISLN	Isolation
K	
KGS	Kilograms
K or KTS	Knots
L	
L	Left
LBS	Pounds
LD	Load
LDA	Localizer-type Directional Aid
LDG	Landing
LE	Leading Edge
LIM	Limit
LKD	Locked
L NAV or LNAV	Lateral Navigation
LOC	Localizer
LT	Light

M	
M	Mach
MAG	Magnetic
MAN	Manual
MAX	Maximum
MCP	Mode Control Panel
MDA(H)	Minimum Descent Altitude (Height)
MEL	Minimum Equipment List
MFD	Multifunction Display
MIC	Microphone
MIN	Minimum
MLS	Microwave Landing System
MMO	Maximum Mach Operating Speed
MOD	Modify
MSG	Message
N	
N	Normal
N1	Low Pressure Rotor Speed
N2	High Pressure Rotor Speed (Pratt & Whitney engines) Intermediate Pressure Rotor Speed (Rolls–Royce engines)
N3	High Pressure Rotor Speed (Rolls–Royce engines)
NAV	Navigation
NM	Nautical Miles
NORM	Normal
NPS	Navigation Performance Scales
O	
OAT	Outside Air Temperature
OFST	Offset
OM-A	Operations Manual Part A
OP	Open
OVHT	Overheat
OVRD	Override
OVSPD	Overspeed

O	
OXY or O2	Oxygen
P	
PA	Passenger Address
PASS	Passenger
PCP	Pilot Call Panel
PERF	Performance
PES	Pitch Enhancement System
PF	Pilot Flying
PM	Pilot Monitoring
PNL	Panel
POS	Position
PPOS	Present Position
PRES or PRESS	Pressure
PREV	Previous
PROX	Proximity
P/RST	Push To Reset
PRV	Pressure Regulating Valve
PSI	Pounds Per Square Inch
PTH	Path
PTT	Push To Talk
PTU	Power Transfer Unit
PWR	Power
PWS	Predictive Windshear System
Q	
Q	Quantity
QFE	Local Station Pressure
QNH	Local Station Pressure corrected to MSL
R	
R	Right
RA	Radio Altitude Resolution Advisory
RAD	Radio
RAT	Ram Air Turbine

R	
RDMI	Radio Distance Magnetic Indicator
REC	Recorder
RECIR or RECIRC	Recirculation
REF	Reference
REV	Reverse
RF	Refill
RMI	Radio Magnetic Indicator
RNP	Required Navigational Performance
RNV	Area Navigation (RNAV)
RPM	Revolutions Per Minute
RST	Reset
RSVR	Reservoir
R/T	Radio Transmit
RTE	Route
RTO	Rejected Takeoff
RUD	Rudder
RVSM	Reduced Vertical Separation Minimum
S	
SAT	Static Air Temperature
SB	Service Bulletin
S/C	Step Climb
SDF	Simplified Directional Facility
SEL	Select
SELCAL	Selective Calling
SENS	Sensitivity
SERV	Service
SPD	Speed
SPDBRK	Speedbrake
STAB	Stabilizer
STBY	Standby
SYS	System
T	
TA	Traffic Advisory

T	
TAI	Thermal Anti–Ice
TAT	Total Air Temperature
T/C	Top of Climb
TCAS	Traffic Alert and Collision Avoidance System
T/D	Top of Descent
TE	Trailing Edge
TEMP	Temperature
TERR	Terrain
TFC	Traffic
TFR	Transfer
THR	Throttle Thrust
TO/GA	Takeoff/Go–Around
TO or T/O	Takeoff
T or TK or TRK	Track
T or TRU	true
TURB	Turbine Turbulence
U	
UNLKD	Unlocked
UNSCHD or UNSCHED	Unscheduled
USB	Upper Side Band
UTC	Universal Time Coordinated
UTIL	Utility
V	
V1	Takeoff Decision Speed
V2	Takeoff Safety Speed
VA	Design maneuvering Speed
VAL	Valve
VERT	Vertical
VHF	Very High Frequency
VIB	Vibration
VLV	Valve

V	
VMO	Maximum Operating Speed
V NAV or VNAV	Vertical Navigation
VOR	VHF Omnidirectional Range
VR	Rotation Speed
VREF	Reference Speed
V/S	Vertical Speed
VSI	Vertical Speed Indicator
VTK	Vertical Track
W	
W	Warm
WHL	Wheel
WPT	Waypoint
WXR	Weather Radar
X	
X–FEED	Crossfeed
XPDR or XPNDR	Transponder
XTK	Cross Track

REVISION RECORD

No.	Revision date	Date filed & Signature
1	15 JUN 06	Incorporated
3	18 JAN 07	Incorporated
5	08 FEB 08	Incorporated
7	05 JAN 09	Incorporated
9	10 MAY 10	Incorporated
11	05 SEP 11	Incorporated
13	23 MAY 12	Incorporated
15	20 JUN 14	Incorporated
17	21 JAN 15	Incorporated
19	09 JUN 16	Incorporated
21	04 OCT 17	Incorporated
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No.	Revision date	Date filed & Signature
2	15 OCT 06	Incorporated
4	25 OCT 07	Incorporated
6	26 JUL 08	Incorporated
8	09 JUN 09	Incorporated
10	10 AUG 10	Incorporated
12	02 NOV 11	Incorporated
14	25 SEP 13	Incorporated
16	22 JUL 14	Incorporated
18	03 JUN 15	Incorporated
20	15 MAR 17	Incorporated
22	26 SEP 18	
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General

The Company issues MEL revisions to provide new or revised procedures and information.

Revisions include a Filing Instruction, Revision Status, Revision Highlights, and a List of Effective Sections. Use the information on the Filing Instruction and List of Effective Sections to verify the manual content.

oOo indicates the end of sections.

Revision Status

TG Revision:	No. 22, dated 26 SEP 18
Boeing DDG Revision:	No. 35, dated 16 MAR 18 No. 35-1, dated 11 APR 18 No. 35-2, dated 17 APR 18
FAA MMEL Revision:	No. 22, dated 30 JAN 18
FAA AFM CDL Appendix Revision:	No. 3, dated 10 JAN 17

Revision Highlights

Revision marks indicate changes to contents. These marks are removed in the digital format of the subsequent revision. Revision marks include:

- Shading (gray for PDF, yellow for HTML) on texts or illustrations indicates changes to or addition of the content for the current revision.
- "DELETION" mark appears when a text or illustration from previous revision has been deleted.
- Asterisk (*) symbol appearing adjacent to airplane registration numbers indicates changes to airplane effectivity of that content.

Revision highlights provide brief reasons for changes to individual contents. Technical changes are always provided with revision highlights. There are cases where non-technical changes are not accompanied by revision highlights. These include but not limited to:

- Minor grammatical corrections
- Changes to publishing system database configuration; revision marks may appear on contents that appear unchanged.

Section 1—EICAS Messages

Introduction

Considerations for Dispatch with Displayed EICAS and CMCS Messages

1.00-01-00.3—Clarified nomenclature regarding non-normal checklist considerations.

EICAS Message Cross Reference List

1.00-02-00.1—Added back previously deleted CHILLER EXHAUST SYS EICAS message cross referenced to 21-26-02.

DOOR AFT CARGO ARMED added reference to 52-35-04.

ENG FUEL VALVE L added reference to 73-21-08.

ENG FUEL VALVE R added reference to 73-21-08.

LSCF ASG CARD R corrected MEL item reference.

Corrected SMOKE COMP UPR DR 1 message to SMOKE COMPT UPR DR 1.

Corrected SMOKE COMP UPR DR 3 message to SMOKE COMPT UPR DR 3.

Corrected SMOKE COMP UPR DR 5 message to SMOKE COMPT UPR DR 5.

TAIL STRIKE added reference to 32-71-01.

Section 2—MEL

ATA 21—Air Conditioning

Environmental Control System Miscellaneous Cards (ECSMC)

2.21-00-01.1—Removed note to also dispatch item 21-25-01 because the proviso of 21-25-01 is satisfied by the provisos of 21-00-01.

2.21-00-01.1—Revised Maintenance notes.

Overhead Flight Crew/Attendant Rest Supply Shutoff Valves

2.21-29-04.1—Modified proviso.

2.21-29-04.1—Revised note.

2.21-29-04.—Deleted (M) procedure steps and Operations Note.

2.21-29-04.1—Modified proviso.

2.21-29-04.1—Revised note.

2.21-29-04.2—Deleted (M) procedure steps and Operations Note.

Overhead Flight Crew/Attendant Rest Exhaust Valves

2.21-29-05.1—Modified proviso.

2.21-29-05.1—Revised note.

2.21-29-05.—Deleted (M) procedure steps and Operations Note.

2.21-29-05.1—Modified proviso.

2.21-29-05.1—Revised note.

2.21-29-05.2—Deleted (M) procedure steps and Operations Note.

Overhead Flight Crew Rest Supply Shutoff Valves (Taxi, Takeoff & Landing Installation)

2.21-29-06.1—Modified proviso.

2.21-29-06.1—Revised note.

2.21-29-06.—Deleted (M) procedure steps and Operations Note.

2.21-29-06.2—Added Operations Note.

Auto Cabin Pressure Controls (L and R)

2.21-31-01.2—Modified proviso.

2.21-31-01.2—Revised note.

2.21-31-01.3—Modified proviso.

2.21-31-01.3—Added note.

2.21-31-01.4—Deleted (M) procedure steps.

2.21-31-01.4—Deleted (O) procedure steps.

Manual Cabin Pressure Outflow Valve Controls (FWD and AFT)

2.21-31-02.1—Modified proviso.

2.21-31-02.1—Revised note.

2.21-31-02.2—Modified proviso.

2.21-31-02.2—Revised note.

2.21-31-02.3—Deleted (M) procedure step.

2.21-31-02.3—Deleted (O) procedure step.

Outflow Valves (FWD and AFT)

2.21-31-03.1—Modified proviso.

2.21-31-03.1—Deleted note.

2.21-31-03.4—Modified proviso.

2.21-31-03.5—Revised note.

2.21-31-03.6—Deleted (M) procedure step.

2.21-31-03.6—Deleted (O) procedure step.

Cabin Rate Of Climb Indication

2.21-31-05.1—Modified proviso.

2.21-31-05.1—Revised note.

Cabin Differential Pressure Indication

2.21-31-06.2—Modified proviso.

2.21-31-06.2—Revised note.

Cabin Altitude Indication

2.21-31-07.2—Modified proviso.

2.21-31-07.2—Revised note.

Positive Pressure Relief Valves

2.21-32-01.1—Modified proviso.

2.21-32-01.2—Revised note.

Overhead Flight Crew/Attendant Rest Electric Heater Systems

2.21-41-04.1—Modified proviso.

2.21-41-04.1—Revised note.

2.21-41-04.—Deleted (M) procedure step and Operations Note.

2.21-41-04.3—Modified proviso.

2.21-41-04.3—Revised note.

2.21-41-04.4—Deleted (M) procedure step.

2.21-41-04.4—Deleted Operations Note.

Air Conditioning Packs

2.21-51-01.7—Deleted dispatch relief for both packs inoperative.

Pack Flow Control/Shutoff Valves (FCVs)

2.21-51-02.2—Added Operations Note.

Ram Air Inlet Door Systems

2.21-52-05.1—Revised number required.

2.21-52-05.1—Revised proviso.

2.21-52-05.2—Revised note to include the procedure for both air conditioning packs off instead of referencing the 21-51-01 Operations procedure.

Ram Air Exhaust Door Systems

2.21-52-06.2—Revised note to include the procedure for both air conditioning packs off instead of referencing the 21-51-01 Operations procedure.

Cabin Temperature Controllers (CTC)

2.21-61-01.4—Modified proviso.

2.21-61-01.4—Revised note.

Trim Air Control Systems

2.21-62-01.1—Revised (O) procedure step.

ATA 22—Autoflight

Autopilot Flight Director Computers (AFDC)

2.22-11-01.1—Added step to align the ADIRU prior to engaging the autopilot.

2.22-11-01.2—Added step to align the ADIRU prior to engaging the autopilot.

Autopilot Backdrive Actuator Systems

2.22-11-02.1—Added step to align the ADIRU prior to engaging the autopilot.

Mode Control Panel Switches

2.22-11-06.2—Removed N1 in (O) procedure. N1 not applicable to RR engine.

2.22-11-06.5—Revised Operations Note.

2.22-11-06.5—Revised Operations Note.

Takeoff/Go-Around (TO/GA) Switches

2.22-11-09.1—Revised to state applicability of proviso b to the approach/landing phase only.

ATA 23—Communications

High Frequency (HF) Communication Systems

2.23-11-01.1—Revised interval.

2.23-11-01.1—Modified proviso.

2.23-11-01.1—Modified (M) procedure step.

2.23-11-01.1—Revised the title name.

2.23-11-01.1—Modified proviso.

2.23-11-01.1—Deleted Note.

2.23-11-01.1—Modified (O) procedure step to align with proviso.

2.23-11-01.2—Added new sub item 23-11-01C.

Satellite Communication (SATCOM) Systems

2.23-15-01.1—Added requirements for PBCS operations.

2.23-15-01.1—Added requirements for PBCS operations.

2.23-15-01.3—Added requirements for PBCS operations.

2.23-15-01.3—Added requirements for PBCS operations.

Emergency Locator Transmitter (ELT) (Fixed)

2.23-24-02.1—Revised MEL item for compliance with CAAT AC AW-02.

Data Communication Management System

2.23-27-01.1—Added requirements for PBCS operations.

2.23-27-01.2—Added requirements for PBCS operations.

2.23-27-01.2—Added requirements for PBCS operations.

2.23-27-01.2—Added requirements for PBCS operations.

Cabin Interphone Systems (Passenger)

2.23-42-01.1—Added proviso.

2.23-42-01.1—Added proviso.

Cabin Interphone Alerting Systems (Passenger)

2.23-42-02.1—Splitted into subitems for clarity and more dispatch options.

2.23-42-02.2—Splitted into subitems for clarity and more dispatch options.

2.23-42-02.3—Splitted into subitems for clarity and more dispatch options.

Overhead Panel Bus Controllers (OPBC)

2.23-93-01.1— Added proviso to consider Passenger Information Signs inoperative with Left OPBC inoperative.

2.23-93-01.1—Added requirement note to dispatch per 33-24-01 for left OPBC inoperative.

2.23-93-01.2—Deleted (O) note due to additional of new proviso.

ATA 24—Electrical Power

Engine Driven Generator Systems (IDG, GCB)

2.24-11-01.2—Modified NOTE to (M) step 2.

Backup Electrical Power System (Backup Generators, Converter and CCBs)

2.24-25-01.1—Revised Maintenance note.

ATA 25—Equipment/Furnishings

Flight Crew Seats

2.25-11-01.1—Revised AMM reference.

2.25-11-01.1—Revised (M) procedure for consistency with proviso a.

Crew/Attendant Rest Seats

2.25-25-04.2—Added sub item relief 25-25-04-03.

Overhead Flight Crew/Attendant Rest Door

2.25-29-03.1—Deleted (M) procedure.

2.25-29-03.1—Added Note for dispatch option.

Crew/Attendant Rests (OFCR, OFAR, FCR)

2.25-29-04.1—Added proviso.

2.25-29-04.1—Added subitem -01 for bunk inoperative.

Portable Emergency Locator Transmitter (ELT)

2.25-63-03.1—Removed inapplicable provisos.

ATA 26—Fire Protection

Overhead Flight Crew/Attendant Rest Smoke Detection Systems

2.26-14-04.1—Removed (O) indicator.

2.26-14-04.1—Modified proviso.

2.26-14-04.1—Deleted note.

2.26-14-04.1—Added note for dispatch option.

2.26-14-04.2—Removed (O) procedure.

APU Fire Detection System

2.26-15-01.2—Added operation (O) note to dispatch option B per FTD 777-26-16161.

2.26-15-01.3—Added Operation (O) note per FTD 777-26-16161.

Fire Extinguishing Squib Test System

2.26-21-02.1—Added (M) procedure steps for -200/-200ER and -300/-300ER.

Lower Cargo Compartment Fire Extinguisher Bottles

2.26-23-01.2—Revised cap part numbers to reflect MS21913 being.

Lower Cargo Compartment Fire Extinguisher Flow Valves (Forward or Aft)

2.26-23-02.1—Revised cap part numbers to reflect MS21913 being canceled and superseded by AS5231.

2.26-23-02.1—Revised part number in accordance with Boeing Part Standard BACC14AD.

2.26-23-02.1—Revised part number in accordance with Boeing Part Standard BACC14AD.

ATA 27—Flight Controls

Flaperon Power Control Units (PCUs)

2.27-11-04.1—Deleted step.

2.27-11-04.1—Modified step.

ATA 28—Fuel

Pressure Fueling System

2.28-21-01.1—Deleted (O) indicator.

2.28-21-01.1—Revised proviso from "deactivated" to "considered inoperative".

2.28-21-01.2—Added note in accordance with NGS.

2.28-21-01.2—Deleted (O) procedure.

Refuel Adapters

2.28-21-03.1—Added relief item 28-21-03 Refuel Adapters.

Fuel Crossfeed Valves

2.28-22-03.1—Added note about fuel imbalance pointer.

2.28-22-03.2—Corrected typo.

Fuel Scavenge Systems

2.28-22-04.1—Added operations note to omit fuel penalty incurred on normal condition for airplanes without fuel scavenge system icing prevention installed.

2.28-22-04.2—Revised step title for consistency.

2.28-22-04.2—Revised step title for consistency.

2.28-22-04.2—Revised step title for consistency.

Center Tank Jettison Isolation Valves

2.28-31-02.2—Removed (O) indicator.

2.28-31-02.2—Modified proviso from deactivated to "considered inoperative".

2.28-31-02.3—Deleted (O) procedure.

2.28-31-02.4—Removed (O) indicator.

2.28-31-02.4—Revised proviso from "deactivated" to "considered inoperative".

2.28-31-02.5—Deleted (O) procedure.

Fuel Quantity Indications (Flight Deck)

2.28-41-01.3—Added sub item 28-41-01-02-01 for airplanes without PRR 62777-79S or equivalent.

2.28-41-01.5—Added sub sub-item 28-41-01-02-02 for airplanes with PRR 62777-79S or equivalent.

ATA 29—Hydraulic Power

Center System Primary Alternating Current Motor Pumps (ACMP)

2.29-11-02.1—Revised Operations Note to include EICAS messages post-start.

ATA 30—Ice & Rain Protection

Pitot Probe Heater Systems

2.30-31-01.2—Revised (M) procedure step, for ISFD installed.

2.30-31-01.4—Revised (M) procedure step, for ISFD installed.

Flight Deck Forward Window Primary Heater Systems

2.30-41-01.1—Revised AMM reference.

Windshield Wipers

2.30-42-01.1—Removed 'known or forecast' to align relief with other airplanes.

Drain Mast Heaters

2.30-71-01.1—Clarified -200/-200ER forward drain mast heater inoperative procedure.

ATA 31—Indicating/Recording Systems

Airplane Information Management System (AIMS)

2.31-41-03.1—Changed 'AIMS-II' to 'AIMS-2' for consistency with other documents.

ATA 32—Landing Gear

Semi-Lever Gear (SLG) System

2.32-30-02.1—Clarified SLG nomenclature.

2.32-30-02.1—Clarified SLG nomenclature.

Autobrake System (Including Autobrakes Solenoid Valve)

2.32-42-04.2—Revised cap part numbers to reflect MS21913 being canceled and superseded by AS5231 and changed "Cap" to "Plug".

Tail Strike Detector Channels

2.32-71-01.1—Added sub item "One Inoperative".

2.32-71-01.1—Added sub item "Both Inoperative".

ATA 33—Lights

Passenger Information Signs

2.33-24-01.1—Revised title name.

2.33-24-01.1—Modified proviso wording to replace "No Smoking/Fasten Seat Belt/Return To Seat" with "Passenger Information".

Main Wheel Well and Nose Wheel Well Service Area Lights

2.33-31-01.1—Modified proviso to remove use of the word "day".

Landing Lights

2.33-42-02.1—Modified proviso to remove use of the word "day".

Position Lights

2.33-43-01.1—Modified proviso to remove use of the word "day".

Anti-Collision Lights

2.33-44-01.1—Revised relief for anti-collision lights.

2.33-44-01.2—Renumbered sub-item (originally 33-44-01-01).

Exterior Emergency Slide Lights

2.33-51-02.1—Modified proviso to remove use of the word "day".

ATA 34—Navigation

Pitot Air Data Modules (Primary—ARINC 629)

2.34-21-04.1—Revised (M) procedure step.

2.34-21-04.3—Revised (M) procedure step.

2.34-21-04.5—Revised (M) procedure step.

Static Air Data Modules (Primary—ARINC 629)

2.34-21-05.1—Revised (M) procedure step.

2.34-21-05.3—Revised (M) procedure step.

2.34-21-05.4—Revised (M) procedure step.

Weather Radar System

2.34-43-01.1—Removed proviso stating that weather radar is not required by regulations.

2.34-43-01.1—Removed proviso stating that weather radar is not required by regulations.

2.34-43-01.2—Removed proviso stating that weather radar is not required by regulations.

2.34-43-01.2—Removed proviso stating that weather radar is not required by regulations.

Ground Proximity Warning System (GPWS)

2.34-46-01.1—Added note for weather radar autotilt function installed.

2.34-46-01.1—Revised operations (O) note.

2.34-46-01.3—Added note.

2.34-46-01.4—Revised Operations note.

ATC Transponder/Automatic Altitude Reporting Systems

2.34-53-01.1—Corrected proviso.

2.34-53-01.2—Added note.

Flight Management Computing Systems (FMCS)

2.34-61-01.2—Revised relief in accordance with FAA MMEL PL-98 Rev 1, released 6/1/2017.

ATA 35—Oxygen

Passenger Oxygen Service Units (Passenger)

2.35-21-02.1—Added "lavatory" to Note for clarification.

2.35-21-02.1—Added note to specify applicability of 25-25-01 in accordance with proviso b.

2.35-21-02.1—Added lavatory door (M) procedure in accordance with proviso c.

ATA 36—Pneumatic

Air Supply and Cabin Pressure Controllers (ASCPC)

2.36-00-01.1—Removed relief for Left Primary ASCPC inoperative.

2.36-00-01.1—Revised proviso wording to reflect removal of relief for Left Primary ASCPC.

2.36-00-01.1—Added proviso to account for right isolation valve and APU bleed air shutoff valve indication becoming invalid with Right Primary ASCPC inoperative.

2.36-00-01.1—Added dispatch requirement associated with right isolation valve and APU bleed air shutoff valve indications being considered inoperative.

2.36-00-01.1—Added (M) note to state interchangeability of ASCPCs.

2.36-00-01.2—Revised wording in accordance with new relief.

2.36-00-01.2—Revised wording in accordance with new relief.

2.36-00-01.2—Revised wording in accordance with new relief.

2.36-00-01.3—Deleted (M) procedure step pertaining to left primary ASCPC inoperative.

2.36-00-01.3—Deleted (M) procedure steps pertaining to left primary ASCPC inoperative.

2.36-00-01.3—Revised note to clarify flight deck effects inoperative right primary ASCPC.

Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)

2.36-11-01.3—Clarified (O) procedure step .

2.36-11-01.5—Clarified (O) procedure step.

2.36-11-01.7—Clarified (O) procedure step.

2.36-11-01.9—Clarified (O) procedure step.

High Pressure Shutoff Valves (HPSOV)

2.36-11-02.6—Clarified (O) procedure to ON ENG BLEED switch at 55% N1 or greater.

2.36-11-02.10—Clarified (O) procedure to ON ENG BLEED switch at 55% N1 or greater.

2.36-11-02.15—Clarified (O) procedure to ON ENG BLEED switch at 55% N1 or greater.

Center Isolation System (Valve and/or Indication)

2.36-12-02.1—Modified note to align with 36-12-01.

2.36-12-02.2—Added note to align with 36-12-01.

ATA 38—Water/Waste

Potable Water Systems

2.38-10-01.1—Modified Operations Note to account airplane weight and balance.

Lavatory Waste Systems

2.38-30-01.1—Revised title in accordance with FAA MMEL Policy letter 83.

ATA 52—Doors

Door Indication Systems

2.52-71-01.1—Added (M) note to clarify optional procedure to deactivate inoperative door sensor/switch.

2.52-71-01.1—Modified (M) procedure to make sensor deactivation optional.

2.52-71-01.2—Reformated (M) procedure to include door 3L connector/ sensor for -200/-200ER airplane.

2.52-71-01.2—Remove (M) procedure to include door 3L connector/ sensor for -300/-300ER airplane.

2.52-71-01.2—Remove (M) procedure to include door 3R connector/ sensor for -300/-300ER airplane.

2.52-71-01.3—Modified (M) procedure to make sensor deactivate optional.

2.52-71-01.4—Modified (M) procedure to make sensor deactivate optional.

2.52-71-01.4—Modified (M) procedure to make sensor deactivate optional.

2.52-71-01.5—Modified (M) procedure to make sensor deactivate optional.

2.52-71-01.5—Modified (M) procedure to make sensor deactivate optional.

2.52-71-01.5—Modified (M) procedure to make sensor deactivate optional.

2.52-71-01.6—Added step 1, to clarify optional procedure to deactivate door sensor/switch and identify EICAS messages which may appear.

2.52-71-01.6—Clarified step 2.

ATA 73—Engine Fuel & Control

Engine Fuel High Pressure Shut Off Valve (HPSOV) Run Solenoid (GE)

2.73-21-08.1—Added relief item 73-21-08.

ATA 78—Engine Exhaust

Thrust Reversers

2.78-31-01.2—Modified step to remove conductive cap part number (MS27292-5).

Reverse Thrust Lever Interlocks

2.78-34-01.1—Removed sub-item 78-34-01-01. Renumbered relief (originally 78-34-01-02A).

2.78-34-01.1—Renumbered relief (originally 78-34-01-02B).

Section 3—CDL

ATA 23—Communications

Static Discharger

3.23-61-01.1—Added note.

3.23-61-01.3—Added note.

ATA 32—Landing Gear

Main Landing Gear Trunnion Door

3.32-12-02.6—Revised penalties.

ATA 33—Lights

Tail Cone Position Light Lens

3.33-43-02.1—Revised proviso.

3.33-43-02.2—Updated illustration.

Upper Or Lower Fuselage Anti-Collision Light Lens

3.33-44-01.1—Added note.

Tail Cone Anti-Collision Light Lens

3.33-44-02.1—Revised proviso for consistency.

ATA 52—Doors

Aft Small Cargo Door Control Door

3.52-35-01.2—Revised illustration.

Aft Large Cargo Door Control Door

3.52-37-01.2—Revised illustration.

ATA 55—Stabilizer

Vertical Stabilizer-To-Fuselage Seal

3.55-40-08.1—Revised proviso.

ATA 57—Wings

Wing Tip Fairing

3.57-31-02.1—Added note.

3.57-31-02.2—Added note.

3.57-31-02.4—Added note.

Raked Tip (-300ER)

3.57-31-03.1—Revised proviso.

ATA 78—Engine Exhaust

Thrust Reverser Blocker Door

3.78-31-02.1—Revised penalty.

Thrust Reverser Hinge Beam Forward Fairing Access Door

3.78-31-06.2—Added illustration for airplanes with GE90-100 engines, per AFM-CDL Revision 4.

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2.73-31-01.1	25 Sep 13
2.73-34-01.1 to 3	15 Mar 17
Section 2—ATA 74 (tab)	
2.74-TC-00.1	23 May 12
2.74-00-01.1	10 May 10
Section 2—ATA 75 (tab)	
2.75-TC-00.1	21 Jan 15
2.75-24-01.1	21 Jan 15

Section/Page	Date
3.57-31-03.1 to 2	26 Sep 18
3.57-41-01.1 to 8	15 Mar 17
3.57-41-02.1 to 4	15 Mar 17
3.57-41-03.1 to 4	15 Mar 17
3.57-41-04.1 to 2	15 Mar 17
3.57-41-05.1 to 4	15 Mar 17
3.57-41-06.1 to 4	15 Mar 17
3.57-41-08.1 to 2	15 Mar 17
3.57-41-09.1 to 6	15 Mar 17
3.57-51-01.1 to 8	15 Mar 17
3.57-51-02.1 to 3	15 Mar 17
3.57-51-03.1 to 6	15 Mar 17
3.57-51-04.1 to 2	15 Mar 17
3.57-53-01.1 to 2	15 Mar 17
3.57-53-02.1 to 2	15 Mar 17
3.57-53-03.1 to 2	15 Mar 17
3.57-63-02.1 to 2	15 Mar 17
3.57-63-03.1 to 8	15 Mar 17
3.57-63-04.1 to 2	15 Mar 17
3.57-63-05.1 to 2	15 Mar 17
3.57-63-06.1 to 2	15 Mar 17
3.57-63-07.1 to 2	15 Mar 17
3.57-71-01.1 to 2	15 Mar 17
3.57-71-02.1 to 2	15 Mar 17
Section 3—ATA 71 (tab)	
3.71-TC-00.1	15 Mar 17
3.71-GL-00.1	15 Mar 17
3.71-11-02.1 to 2	15 Mar 17
3.71-11-04.1 to 2	15 Mar 17
3.71-11-05.1 to 2	15 Mar 17
Section 3—ATA 78 (tab)	
3.78-TC-00.1	26 Sep 18
3.78-GL-00.1 to 2	15 Mar 17
3.78-31-01.1 to 3	15 Mar 17
3.78-31-02.1 to 4	26 Sep 18
3.78-31-03.1 to 2	15 Mar 17
3.78-31-04.1 to 2	15 Mar 17
3.78-31-05.1 to 4	15 Mar 17
3.78-31-06.1 to 2	26 Sep 18

Foreword

The 777 Minimum Equipment List is the property of Thai Airways International Public Company Limited. The manual contents are under the responsibility of THAI Flight Technical Engineering Department (BKKOU). Since the manual includes information regarding THAI policies and methods of operation, it is prohibited to reveal its contents to persons not associated with the Company. It is a responsibility of each manual holder to inform BKKOU of any discrepancy found in the manual at:

Tel (02) 545-2805
Fax (02) 545-3851
E-mail bkkouoffice@thaiairways.com
SITA BKKOUTG

For paper format of this manual, it is also a responsibility of each manual holder to guard the manual against damage and loss and to keep it up to date by inserting all revisions as soon as they are received.

Purpose and Scope

This manual is specifically prepared for dispatching and contains information and instructions for operation of the 777. The procedures in this manual cover the regulations issued by The Civil Aviation Authority of Thailand (CAAT) as applicable and specific to this type of aircraft. Although these procedures must be adhered to, nothing should limit personnel from acting on their own best judgement in an emergency.

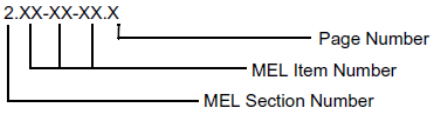
Document Content and Organization

The MEL is divided into sections as follows:

- SECTION 0—INTRODUCTION
- SECTION 1—EICAS MESSAGES

  This section provides a cross reference between EICAS messages and MEL items which may provide dispatch relief. The EICAS message list is in alphabetic order and includes all of the current EICAS messages.
- SECTION 2—MEL

  The page numbering uses the MEL item number as follows:



For example, MEL Item 21-51-01 would be found on page 2.21-51-01.1 in Section 2.

Each MEL item is separated by a double horizontal line, with each applicable sub item separated by a single horizontal line. The MEL entry is separated from applicable procedures by a dashed horzontal line.

When appropriate, procedures follow the MEL item. MEL items may not have suggested procedures for the following reasons:

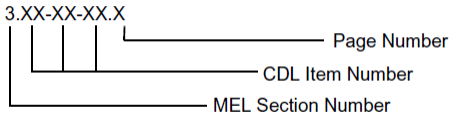
– The procedure is obvious.

– The MMEL (Master Minimum Equipment List) does not require that a procedure be established.

MAINTENANCE NOTES and OPERATIONS NOTES in this document are advisory in nature and should not be considered as required Maintenance or Operations procedures.

- SECTION 3—CDL

  The page numbering uses the CDL item number as follows:



For example, CDL item 52-11-01 would be found on page 3.52-11-01.1 in Section 3.

When appropriate, illustrations, system effects and performance adjustments follow the CDL item.

Airplane Effectivities

Differences in airplane configuration are expressed through the use of airplane effectivities which lists airplane registration numbers applicable to particular contents.

Airplane registration numbers are listed in alpha-numeric order. A list of more than four consecutive registration numbers is presented as a range of airplanes. A comma is used in the list to indicate a break in the range, e.g. the list of "TKK to TKR, U" includes the alphabets K through R and U of the "TK" series.

An airplane list of an entire fleet may, in some cases, be expressed as the fleet itself, e.g. the list of "-200, -200ER" includes all airplanes in the -200 and -200ER fleets.

For PDF format of this document, airplane effectivities are shown adjacent to the applicable contents on the left for even pages and on the right for odd pages. In some rare cases where the effectivity includes several airplane registration numbers or models, the effectivity may extend below its content and slightly cover the area associated with the following content.

For HTML format of this document, airplane effectivities are distinguished by text colors and the airplane lists will be displayed in a pop-up note when the cursor moves over the respective contents.

Example (PDF format):

23-27-02 **Flight Deck Communications System (ACARS Data Link)**

23-27-02A **SATCOM Voice Inoperative**

Interval	Installed	Required	Procedure
C	1	0	(O) (P) (MV)

May be inoperative provided:

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

OPERATIONS (O)

TJR to TJW, TKK to TKR, TKU to TKZ

Notes:
1. For AIMS-2 with BP V14 and on, the 8.33 kHz VHF radio tuning is not available.
2. Interface to ACARS Communications Manager on MFD will be inoperative.

1. Use VHF or HF voice for communication.
2. The flight must remain within 180 minutes of landing at a suitable airport.

Example (HTML format):

23-27-02 **Flight Deck Communications System (ACARS Data Link)**
23-27-02A **SATCOM Voice Inoperative**

Interval	Installed	Required	Procedure
C	1	0	(O) (P) (MV)

May be inoperative provided:

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

OPERATIONS (O)

Notes: 1. For AIMS-2 with BP V14 and on, the 8.33 kHz VHF radio tuning is not available.

2. Interface to ACARS Communications Manager on MFD will be inoperative. TJR to TJW,TKK to TKR,TKU to TKZ

1. Use VHF or HF voice for communication.

2. The flight must remain within 180 minutes of landing at a suitable airport.

The two examples above show that the entire MEL Item 23-27-02A except "Note 1" applies to all 777 airplanes. Note 1 applies only to airplanes TJR, TJS, TJT, TJU, TJV, TJW, TKK, TKL, TKM, TKN, TKO, TKP, TKQ, TKR, TKU, TKV, TKW, TKX, TKY and TKZ.

Revisions

Revisions will be issued as necessary by the Flight Technical Engineering Department (BKKOU), and published the distributed by the Flight Documentation and Publication Services Department (BKKOR). The revision procedure shall be in accordance with the MEL Revision Process.

Rapid Content Revision

As a means to promptly provide operational information/instructions to flight crew when normal revisions cannot be published in time, a brief description together with necessary operational instructions will be published in the Operations Briefing Card (OBC).

The published information/instructions:

- must not be less restrictive than the current revision of MEL
- may contain aircraft effectivity update to an existing MEL item.

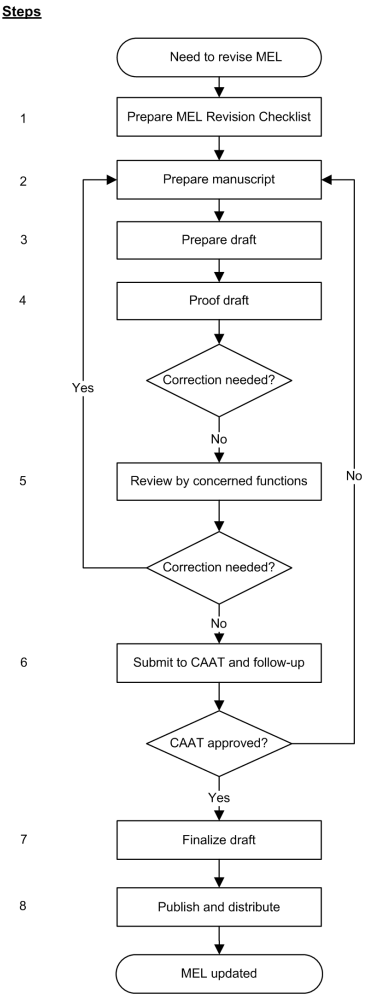
The OBC is located inside the front cover of the Technical Log on each aircraft. The content will later be incorporated into a future revision of MEL as applicable.

Distribution

The 777 MEL is available at THAISphere and https://vpn.thaiairways.com. It is also available on the following locations and formats:

Aircraft	Paper
CAAT	CD-ROM

MEL Revision Process



MEL Work Instruction

This process shall be followed when MEL need to be updated.

MEL shall be updated as soon as the new MMEL/DDG or new directive from CAAT have been issued. Normally this should not exceed 90 days.

Form SQMR 18 shall be used to record process and obtain signature of responsible person to each revision.

1. Prepare MEL Revision Checklist
   - OU-O prepares the MEL Revision Checklist which will be used by OU-O and OR to assist in preparing manuscripts and drafts, and to record revision progress.
2. Prepare manuscript
   - OU-O prepares the manuscript based on MMEL revision and THAI policy, considering all applicable authority regulations. The MEL shall not be less restrictive than the MMEL.
3. Prepare draft
   - OU-O and OR review the draft for editorial and technical correctness. If the draft needs correction, go back to step 3.
4. Proof draft
   - OU-O and OR review the draft for editorial and technical correctness. If the draft needs correction, go back to step 3.
5. Review by concerned functions
   - OU-O submits the draft to TE and OE for a review. The MEL Revision Review Form (OU-FM11) and Revision Approval Records & Minutes (SQMR-FM18) are used to record acknowledgement/acceptance of the draft by the concerned functions. If either TE or OE rejects the draft, go back to step 2.
6. Submit to CAAT for approval
   - OU-O submits the draft to CAAT for approval and follows up with responsible CAAT inspectors. If CAAT rejects the draft, go back to step 2.
7. Finalize draft
   - Once the MEL revision is approved, OU-O collects approval documents from CAAT. OR incorporates the approval documents into the MEL revision.
8. Publish and distribute
   - OR publishes and distributes the MEL revision. OU-O files manuscript and approval form for record and future reference.

Bangkok, 15 June 2018
THAI AIRWAYS INTERNATIONAL PUBLIC COMPANY LIMITED

Operations Department (DO)

DELETION

Capt. Pongtorn Thepkanjana
Executive Vice President

Introduction - 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. The Cross Reference List is intended to assist flight crew and maintenance personnel in quickly identifying the proper MEL item to consult for possible dispatch relief. All EICAS messages at Status level or higher are listed by message text in alphabetic order. A description of the information provided in each column of the Cross Reference List follows.

Message Text This column alphabetically lists each message exactly as they would appear on EICAS.

Level The appropriate EICAS message level is listed: Warning, Caution, Advisory, Memo, Comm, or Status.

MEL Item This column lists the appropriate MEL item(s) to consult for possible dispatch relief with the associated message displayed. EICAS messages that do not have a specific MEL item to allow dispatch are listed with one of the following cross references:

- **N/A** Not Applicable: There is no MEL item listed because the message does not indicate a system failure.
- **None** There is no MEL item for the failure condition indicated by this message (NO GO).

EICAS Messages

EICAS is the primary means of displaying airplane system information to the flight crew. EICAS consolidates engine and subsystem indications and provides a centrally located crew alerting function. EICAS displays System Alerts (Warning, Caution, and Advisory), Communication Alerts, Memo messages, and Status messages.

Warning A non-normal operational or system condition displayed in red text accompanied by annunciation of the master warning lights and an aural tone. Immediate crew awareness and corrective action is required.

Caution A non-normal operational or system condition displayed in amber text accompanied by annunciation of the master caution lights and an aural tone. Immediate crew awareness is required and corrective action may be required.

Advisory A non-normal operational or system condition displayed in amber text without other visual or aural annunciations. Routine crew awareness is required and corrective action may be required.

Comm A reminder of normal incoming flight crew communications displayed in white text.

Memo A reminder of a normal condition in white text that indicates the current state of certain manually and automatically configured airplane systems.

Status A system condition which affects airplane dispatch, displayed in white text on the MFD status page. Status messages are checked prior to engine start and the condition should be corrected or dispatched per the THAI MEL. There are no inflight crew procedures associated with Status messages.

Maintenance Level Messages

Maintenance level messages are not included in the Cross Reference List, since they do not affect the airworthiness release of the airplane. Maintenance level messages are provided by EICAS and the Central Maintenance Computing System (CMCS) as follows:

Scheduled Maintenance Task (SMT): These are a special category of EICAS messages that are uniquely associated with a Certification Maintenance Requirement (CMR) or a Scheduled Maintenance Task (SMT). They are displayed on a special MFD maintenance page. SMT messages are checked as a result of a specified maintenance task defined by the CMR or maintenance program requirement, which also defines a specific time interval when corrective maintenance action is required. There is no requirement to check SMT messages prior to each flight. SMT messages are not included in the Cross Reference List.

Central Maintenance Computing System (CMCS) Messages: The Central Maintenance Computing Function of the Onboard Maintenance System processes BITE fault reports into maintenance messages. These are nonessential messages that are displayed on the Maintenance Access Terminal (MAT). Maintenance messages are not displayed on EICAS and they are not used to determine the airworthiness of the airplane. They provide diagnostic information useful in troubleshooting or maintenance planning. There are two general types of CMCS maintenance messages: correlated and uncorrelated. Correlated messages are associated with a specific EICAS message or other flight deck effect. Each fault indicated by an EICAS message has at least one correlated maintenance message to assist the maintenance personnel in determining the root cause of the fault indicated on EICAS. Uncorrelated messages do not have a corresponding flight deck effect. Some uncorrelated messages, known as Maintenance Memos, provide information regarding the condition of a redundant component or system that is installed to enhance departure reliability, but is not required for certification. Maintenance Memos provide maintenance departments the ability to monitor system degradation and plan appropriate action before annunciation of an EICAS message which affects the airworthiness release of the airplane. CMCS maintenance messages are not included in the Cross Reference List.

Considerations for Dispatch with Displayed EICAS and CMCS Messages

Any monitored faults that affect airplane dispatchability will be displayed on EICAS as a Status or Alert level (Warning, Caution, Advisory) message, with a corresponding correlated maintenance message. System faults displayed at Status level or Alert level should be resolved by MEL compliance or maintenance action prior to engine start. After engine start, EICAS Alert messages are the primary means of alerting the crew to non-normal conditions or improper configuration. Alert messages may appear as a direct consequence of the MEL dispatch configuration. The checklists associated with these messages should not be accomplished, and crews should override the associated electronic checklists. If uncertain whether the alert is associated with the MEL configuration or procedures, the non-normal procedure should be accomplished. Upon completion of the procedure and prior to takeoff, the MEL should be consulted to determine if relief is available for continued operation with system faults displayed at the Alert level (Warning, Caution, Advisory).

Any system faults that result only in a SMT message or a CMCS maintenance message do not require MEL consideration or maintenance action prior to dispatch. They are addressed within company standard maintenance program.

Considerations for Dispatch Using Synoptic Displays

Airplane system faults and/or ARINC 629 communication faults may result in missing information on synoptic displays. Missing data may include any synoptic display element such as flow bars, pump or valve symbols, and digital indications. Display elements may be absent from one, two, or all three Multi-Function Displays. Missing information on a specific synoptic page caused by an ARINC 629 communication fault is not indicative of a fault in the system associated with that synoptic page. Decisions regarding dispatch should be based on EICAS Status or Alert level messages and/or other flight deck effects.

Message	Level	MEL Item
A/P DISC WARN SYS	Status	31-51-05
ACTUATOR PRESS SNSR	Status	27-02-05
ADF L	Status	34-57-01
ADF R	Status	34-57-01
ADIRU	Status	34-21-03
ADIRU ALIGN MODE	Memo	N/A
ADS-B OUT L	Advisory	34-53-01-02
ADS-B OUT L	Status	34-53-01-02
ADS-B OUT R	Advisory	34-53-01-02
ADS-B OUT R	Status	34-53-01-02
AFDC C	Status	22-11-01
AFDC L	Status	22-11-01
AFDC R	Status	22-11-01
AILERON ACTUATOR	Status	27-11-03
AIMS	Status	None
AIMS CABINET BUS	Status	31-41-03
AIR DATA SYS	Caution	None
AIR/GROUND L	Status	32-09-01-01
AIR/GROUND R	Status	32-09-01-02
AIR/OIL VLV CLOSED L	Status	None
AIR/OIL VLV CLOSED R	Status	None
AIRSPEED LOW	Caution	N/A
ALTITUDE ALERT	Caution	N/A
ALTITUDE ALERT SYS	Status	34-16-01
ALTITUDE CALLOUTS	Advisory	34-46-01
ALTN ATTITUDE	Advisory	N/A
ALTN GEAR EXTEND	Status	32-35-01
ALTN PITCH TRIM LEV	Status	27-41-02
ANTI-ICE ENG L	Advisory	30-21-01
ANTI-ICE ENG R	Advisory	30-21-01
ANTI-ICE LEAK ENG L	Caution	30-21-01
ANTI-ICE LEAK ENG R	Caution	30-21-01
ANTI-ICE LOSS ENG L	Advisory	30-21-01

Message	Level	MEL Item
ANTI-ICE LOSS ENG R	Advisory	30-21-01
ANTI-ICE ON	Advisory	N/A
ANTI-ICE WING	Advisory	30-11-01 30-11-02
ANTISKID	Advisory	None
ANTISKID	Status	None
ANTISKID ALTN VALVE	Status	32-42-03
ANTISKID NORM VLV L	Status	32-42-01
ANTISKID NORM VLV R	Status	32-42-01
ANTISKID XDCR L	Status	32-42-02
ANTISKID XDCR R	Status	32-42-02
AOA VANE L	Status	34-21-06
AOA VANE R	Status	34-21-06
APU	Status	49-11-01
APU AIR STARTER	Status	49-43-01
APU BATTERY	Status	24-31-01
APU BATTERY OVHT	Status	24-31-01
APU BLEED AIR	Status	49-52-01
APU CONTROL	Status	49-61-01
APU COOLDOWN	Memo	N/A
APU DOOR	Status	49-15-01
APU LIMIT	Caution	49-11-01
APU OIL QTY	Status	49-94-01
APU REMOTE SHUTDOWN	Status	49-11-01
APU RUNNING	Memo	N/A
APU SHUTDOWN	Advisory	49-11-01
APU START SYS	Status	49-42-01
ARINC 629 DATA BUS	Status	None
ASCP CONTROLLER	Status	None
ASCP PRIMARY CTRL L	Status	36-00-01
ASCP PRIMARY CTRL R	Status	36-00-01
ATC	Comm	N/A
ATC COMM	Status	23-27-02

Message	Level	MEL Item
ATC DATALINK LOST	Advisory	N/A
AUTO SPEEDBRAKE	Advisory	27-62-01
AUTO SPEEDBRAKE	Status	27-62-01
AUTOBRAKE	Advisory	32-42-04
AUTOBRAKE	Status	32-42-04
AUTOBRAKE 1	Memo	N/A
AUTOBRAKE 2	Memo	N/A
AUTOBRAKE 3	Memo	N/A
AUTOBRAKE 4	Memo	N/A
AUTOBRAKE MAX	Memo	N/A
AUTOBRAKE RTO	Memo	N/A
AUTOBRAKE SOL VALVE	Status	32-42-04
AUTOPILOT	Caution	22-11-01
AUTOPILOT BACKDRV L	Status	22-11-02
AUTOPILOT BACKDRV R	Status	22-11-02
AUTOPILOT DISC	Warning	22-11-01
AUTOTHROTTLE DISC	Caution	22-31-01
AUTOTHROTTLE L	Advisory	22-31-02
AUTOTHROTTLE R	Advisory	22-31-02
AUTOTHROTTLE SERVO L	Status	22-31-02
AUTOTHROTTLE SERVO R	Status	22-31-02
AUTOTHROTTLE SYS	Status	22-31-01

Message	Level	MEL Item
BANK ANGLE PROTECT	Status	27-02-01
BARO SET DISAGREE	Advisory	N/A
BAT CHARGER APU	Status	24-31-02
BAT CHARGER MAIN	Status	None
BLEED FAMV L	Status	36-11-05
BLEED FAMV R	Status	36-11-05
BLEED HPSOV L	Status	36-11-02
BLEED HPSOV R	Status	36-11-02
BLEED ISLN CLOSED C	Advisory	36-12-02

Message	Level	MEL Item
BLEED ISLN CLOSED L	Advisory	36-12-01
BLEED ISLN CLOSED R	Advisory	36-12-01
BLEED ISLN OPEN C	Advisory	36-12-02
BLEED ISLN OPEN L	Advisory	36-12-01
BLEED ISLN OPEN R	Advisory	36-12-01
BLEED ISLN VALVE C	Status	36-12-02
BLEED ISLN VALVE L	Status	36-12-01
BLEED ISLN VALVE R	Status	36-12-01
BLEED LEAK BODY	Caution	None
BLEED LEAK L	Caution	None
BLEED LEAK R	Caution	None
BLEED LEAK STRUT L	Caution	None
BLEED LEAK STRUT R	Caution	None
BLEED LOOP 1 BODY	Status	26-18-02
BLEED LOOP 1 STRUT L	Status	26-18-03
BLEED LOOP 1 STRUT R	Status	26-18-03
BLEED LOOP 1 WING L	Status	26-18-01
BLEED LOOP 1 WING R	Status	26-18-01
BLEED LOOP 2 BODY	Status	26-18-02
BLEED LOOP 2 STRUT L	Status	26-18-03
BLEED LOOP 2 STRUT R	Status	26-18-03
BLEED LOOP 2 WING L	Status	26-18-01
BLEED LOOP 2 WING R	Status	26-18-01
BLEED LOSS BODY	Advisory	None
BLEED LOSS BODY L	Advisory	None
BLEED LOSS BODY R	Advisory	None
BLEED LOSS WING L	Advisory	None
BLEED LOSS WING R	Advisory	None
BLEED OFF APU	Advisory	36-12-03
BLEED OFF ENG L	Advisory	36-11-01 36-11-02
BLEED OFF ENG R	Advisory	36-11-01 36-11-02

Message	Level	MEL Item
BLEED PRESS SENSOR L	Status	36-21-02
BLEED PRESS SENSOR R	Status	36-21-02
BLEED PRSOV L	Status	36-11-01
BLEED PRSOV R	Status	36-11-01
BLEED TEMP SENSOR L	Status	36-22-01
BLEED TEMP SENSOR R	Status	36-22-01
BLEED VALVE APU	Status	36-12-03
BOTTLE 1 DISCH ENG	Advisory	None
BOTTLE 1 ENG	Status	None
BOTTLE 1A CARGO	Status	26-23-01-01
BOTTLE 1B CARGO	Status	26-23-01-01
BOTTLE 2 DISCH ENG	Advisory	None
BOTTLE 2 ENG	Status	None
BOTTLE 2A CARGO	Status	26-23-01-01
BOTTLE 2B CARGO	Status	26-23-01-03
BOTTLE 2C CARGO	Status	26-23-01-03
BOTTLE 2D CARGO	Status	26-23-01-03
BOTTLE APU	Status	26-22-01
BOTTLE DISCH APU	Advisory	26-22-01
BOTTLE DISCH CARGO	Advisory	26-23-01
BRAKE SOURCE	Advisory	N/A
BRAKE TEMP	Advisory	N/A
BRAKE TEMP SYS	Status	32-46-01

Message	Level	MEL Item
CABIN ALERT	Comm	N/A
CABIN ALT AUTO L	Status	21-31-01
CABIN ALT AUTO R	Status	21-31-01
CABIN ALTITUDE	Warning	None
CABIN ALTITUDE AUTO	Caution	21-31-01 21-31-03
CABIN CALL	Comm	N/A
CABIN INTERPHONE	Status	23-42-01

Message	Level	MEL Item
CABIN READY	Comm	N/A
CABIN TEMP CTRL L	Status	21-61-01
CABIN TEMP CTRL R	Status	21-61-01
CABIN TEMPERATURE	Advisory	N/A
CARGO A/C FWD	Advisory	21-00-01 21-62-01-01 21-62-02-01
CARGO A/C SELECT FWD	Status	None
CARGO A/C SOV FWD	Status	None
CARGO CALL	Comm	N/A
CARGO DUCT SNSRS FWD	Status	None
CARGO EXH FAN FWD	Status	None
CARGO HEAT AFT	Advisory	21-00-01 21-44-01 21-44-02
CARGO HEAT BULK	Advisory	21-00-01 21-44-03 21-44-04
CARGO HEAT VALVE AFT	Status	21-44-01
CARGO HEAT VALVE FWD	Status	21-27-07
CARGO HEAT VLV BULK	Status	21-44-03
CARGO SQUIB TEST	Status	26-21-02
CARGO TEMP SNSR AFT	Status	21-44-02
CARGO TEMP SNSR BULK	Status	21-44-04
CARGO TEMP SNSRS FWD	Status	None
CARGO TRIM VALVE FWD	Status	None
CARGO VENT FAN BULK	Status	21-26-02 21-26-03
CDU C	Status	34-61-03
CDU L	Status	34-61-03
CDU R	Status	34-61-03
CHECKLIST SYS	Status	31-61-07
CHILLER EXHAUST SYS	Status	21-26-02
CHKL INCOMP NORM	Caution	N/A

Message	Level	MEL Item
CHKL NON NORM	Advisory	N/A
CMPRSR TEMP SENSOR L	Status	21-52-03
CMPRSR TEMP SENSOR R	Status	21-52-03
COMM	Comm	N/A
COMM BUSY	Comm	N/A
CON IGNITION ON L	Memo	N/A
CON IGNITION ON L+R	Memo	N/A
CON IGNITION ON R	Memo	N/A
COND TEMP SENSOR L	Status	21-52-07
COND TEMP SENSOR R	Status	21-52-07
CONFIG DOORS	Warning	N/A
CONFIG FLAPS	Warning	N/A
CONFIG GEAR	Warning	N/A
CONFIG GEAR STEERING	Warning	N/A
CONFIG PARKING BRAKE	Warning	N/A
CONFIG RUDDER	Warning	N/A
CONFIG SPOILERS	Warning	N/A
CONFIG STABILIZER	Warning	N/A
CONFIG WARNING SYS	Advisory	None
CONFIG WARNING SYS	Status	None
CONTROL COLUMN XDCR	Status	27-31-01
CONTROL WHEEL XDCR	Status	27-11-02
CPCS AIR/GND	Status	None
CPCS REMOTE SENSOR	Status	21-31-04
CREW OXYGEN LOW	Advisory	35-11-01
CREW REST CALL	Comm	N/A
CURSOR CONTROL L	Status	31-61-02
CURSOR CONTROL R	Status	31-61-02

Message	Level	MEL Item
DATA COMM MGMT	Status	23-27-01
DATALINK AVAIL	Comm	N/A
DATALINK LOST	Advisory	N/A

Message	Level	MEL Item
DATALINK SYS	Advisory	23-27-01
DET CHAN 1 CARGO AFT	Status	26-16-01 26-16-01-01
DET CHAN 1 CARGO FWD	Status	26-16-01 26-16-01-01
DET CHAN 1 E/E SMOKE	Status	26-19-01
DET CHAN 2 CARGO AFT	Status	26-16-01 26-16-01-01
DET CHAN 2 CARGO FWD	Status	26-16-01 26-16-01-01
DET CHAN 2 E/E SMOKE	Status	26-19-01
DET FAN 1 CARGO AFT	Status	26-16-01 26-16-01-02
DET FAN 1 CARGO FWD	Status	26-16-01 26-16-01-02
DET FAN 2 CARGO AFT	Status	26-16-01 26-16-01-02
DET FAN 2 CARGO FWD	Status	26-16-01 26-16-01-02
DET FIRE APU	Advisory	26-15-01
DET FIRE CARGO AFT	Advisory	26-16-01
DET FIRE CARGO FWD	Advisory	26-16-01
DET FIRE ENG L	Advisory	None
DET FIRE ENG R	Advisory	None
DET FIRE WHEEL WELL	Advisory	26-17-01
DET FIRE WHEEL WELL	Status	26-17-01
DET HTR CARGO AFT	Status	26-16-01 26-16-01-04
DET HTR CARGO FWD	Status	26-16-01 26-16-01-04
DET OVERHEAT ENG L	Advisory	26-11-02
DET OVERHEAT ENG R	Advisory	26-11-02
DET TURB OVHT ENG L	Status	None
DET TURB OVHT ENG R	Status	None

Message	Level	MEL Item
DET ZONE 1 CARGO AFT	Status	26-16-01 26-16-01-03
DET ZONE 1 CARGO FWD	Status	26-16-01 26-16-01-03
DET ZONE 2 CARGO AFT	Status	26-16-01 26-16-01-03
DET ZONE 2 CARGO FWD	Status	26-16-01 26-16-01-03
DET ZONE 3 CARGO AFT	Status	26-16-01 26-16-01-03
DET ZONE 3 CARGO FWD	Status	26-16-01 26-16-01-03
DET ZONE 4 CARGO AFT	Status	26-16-01 26-16-01-03
DET ZONE 4 CARGO FWD	Status	26-16-01
DETECTOR IFES SMOKE	Status	21-27-11
DISPLAY INTERCABINET	Status	None
DISPLAY INTERFACE	Status	None
DISPLAY PROCESSING	Status	None
DISPLAY RESOURCES	Status	None
DISPLAY SELECT PNL	Advisory	31-61-04
DME L	Status	34-55-01
DME R	Status	34-55-01
DOOR AFT CARGO	Caution	52-71-01
DOOR AFT CARGO	Advisory	52-71-01
DOOR AFT CARGO ARMED	Status	52-35-04
DOOR AFT CARGO IND	Status	52-71-01
DOOR BULK CARGO	Advisory	52-71-01
DOOR E/E ACCESS	Advisory	52-71-01
DOOR ENTRY 1L	Advisory	52-71-01
DOOR ENTRY 1R	Advisory	52-71-01
DOOR ENTRY 2L	Advisory	52-71-01
DOOR ENTRY 2R	Advisory	52-71-01
DOOR ENTRY 3L	Advisory	52-71-01

DELETION

Message	Level	MEL Item
DOOR ENTRY 3R	Advisory	52-71-01
DOOR ENTRY 4L	Advisory	52-71-01
DOOR ENTRY 4R	Advisory	52-71-01
DOOR ENTRY 5L	Advisory	52-71-01
DOOR ENTRY 5R	Advisory	52-71-01
DOOR ENTRY IND 1L	Status	52-71-01
DOOR ENTRY IND 1R	Status	52-71-01
DOOR ENTRY IND 2L	Status	52-71-01
DOOR ENTRY IND 2R	Status	52-71-01
DOOR ENTRY IND 3L	Status	52-71-01
DOOR ENTRY IND 3R	Status	52-71-01
DOOR ENTRY IND 4L	Status	52-71-01
DOOR ENTRY IND 4R	Status	52-71-01
DOOR ENTRY IND 5L	Status	52-71-01
DOOR ENTRY IND 5R	Status	52-71-01
DOOR FLIGHT LOCK 1L	Status	52-11-05
DOOR FLIGHT LOCK 1R	Status	52-11-05
DOOR FLIGHT LOCK 2L	Status	52-11-05
DOOR FLIGHT LOCK 2R	Status	52-11-05
DOOR FLIGHT LOCK 3L	Status	52-11-05
DOOR FLIGHT LOCK 3R	Status	52-11-05
DOOR FLIGHT LOCK 4L	Status	52-11-05
DOOR FLIGHT LOCK 4R	Status	52-11-05
DOOR FLIGHT LOCK 5L	Status	52-11-05
DOOR FLIGHT LOCK 5R	Status	52-11-05
DOOR FWD ACCESS	Advisory	52-71-01
DOOR FWD CARGO	Caution	52-71-01
DOOR FWD CARGO IND	Status	52-71-01
DOOR WING SLIDE L	Advisory	52-71-01
DOOR WING SLIDE L	Status	52-71-01
DOOR WING SLIDE LK L	Status	52-71-01
DOOR WING SLIDE LK R	Status	52-71-01
DOOR WING SLIDE R	Advisory	52-71-01

Message	Level	MEL Item
DOOR WING SLIDE R	Status	52-71-01
DOORS	Advisory	52-71-01
DOORS AUTO	Memo	N/A
DOORS AUTO/MANUAL	Memo	N/A
DOORS MANUAL	Status	N/A
DUCT PRESS DET E4	Status	21-27-12
DUCT PRESS DET E5	Status	21-27-12
DUCT PRESS DET F/D	Status	21-27-12
DUCT PRESS DET VSCF	Status	21-27-12

Message	Level	MEL Item
EAI CARD L	Status	30-21-01
EAI CARD R	Status	30-21-01
EAI LOOPS FANCASE L	Status	26-18-04
EAI LOOPS FANCASE R	Status	26-18-04
EAI PRESS SENSOR L	Status	30-21-01
EAI PRESS SENSOR R	Status	30-21-01
EAI VALVE L	Status	30-21-01
EAI VALVE R	Status	30-21-01
ECON COOL VALVE L	Status	21-52-02
ECON COOL VALVE R	Status	21-52-02
ECS CARD L	Status	21-00-01
ECS CARD R	Status	21-00-01
EFIS CONTROL PNL L	Advisory	31-61-08
EFIS CONTROL PNL L	Status	31-61-08
EFIS CONTROL PNL R	Advisory	31-61-08
EFIS CONTROL PNL R	Status	31-61-08
ELEC AC BUS L	Caution	None
ELEC AC BUS R	Caution	None
ELEC BACKUP GEN L	Advisory	24-25-01
ELEC BACKUP GEN L	Status	24-25-01
ELEC BACKUP GEN R	Advisory	24-25-01
ELEC BACKUP GEN R	Status	24-25-01

Message	Level	MEL Item
ELEC BACKUP SYS	Advisory	24-25-01
ELEC BACKUP SYS	Status	24-25-01
ELEC BATTERY BUS	Status	None
ELEC BATTERY OFF	Advisory	N/A
ELEC BUS ISLN L	Advisory	None
ELEC BUS ISLN R	Advisory	None
ELEC CABIN/UTIL OFF	Advisory	N/A
ELEC DC BUS L	Status	None
ELEC DC BUS R	Status	None
ELEC GEN DRIVE L	Advisory	24-11-01
ELEC GEN DRIVE R	Advisory	24-11-01
ELEC GEN OFF APU	Advisory	24-21-01
ELEC GEN OFF L	Advisory	24-11-01
ELEC GEN OFF R	Advisory	24-11-01
ELEC GEN SYS L	Status	24-11-01
ELEC GEN SYS R	Status	24-11-01
ELEC GND HDLG BUS	Advisory	24-22-01
ELEC GND HDLG BUS	Status	24-22-01
ELEC HOT BATTERY BUS	Status	None
ELEC IFE/SEATS OFF	Advisory	N/A
ELEC STANDBY BUS	Status	None
ELEC STANDBY SYS	Advisory	None
ELEC STANDBY SYS	Status	None
ELEC TRU C1	Status	None
ELEC TRU C2	Status	None
ELEC TRU L	Status	None
ELEC TRU R	Status	None
ELMS P110 CHANNEL	Status	24-09-01
ELMS P110 PANEL	Status	None
ELMS P210 CHANNEL	Status	24-09-01
ELMS P210 PANEL	Status	None
ELMS P310 CHANNEL	Status	24-09-01
ELMS P310 PANEL	Status	None

Message	Level	MEL Item
ELT ON	Advisory	23-24-02
EMER LIGHTS	Advisory	N/A
ENG AIR/OIL VALVE L	Status	79-21-01
ENG AIR/OIL VALVE R	Status	79-21-01
ENG ANTI-ICE AIR L	Advisory	None
ENG ANTI-ICE AIR R	Advisory	None
ENG AUTOSTART L	Caution	80-11-02
ENG AUTOSTART OFF	Advisory	N/A
ENG AUTOSTART R	Caution	80-11-02
ENG CCC VALVE L	Status	None
ENG CCC VALVE R	Status	None
ENG CONTROL L	Advisory	None
ENG CONTROL L	Status	None
ENG CONTROL R	Advisory	None
ENG CONTROL R	Status	None
ENG DMS L	Status	None
ENG DMS R	Status	None
ENG EEC C1 L	Status	73-21-04
ENG EEC C1 R	Status	73-21-04
ENG EEC MODE L	Advisory	30-34-01 73-21-02
ENG EEC MODE L	Status	30-34-01 73-21-02
ENG EEC MODE R	Advisory	30-34-01 73-21-02
ENG EEC MODE R	Status	30-34-01 73-21-02
ENG EEC OVHT L	Status	None
ENG EEC OVHT R	Status	None
ENG FAIL L	Caution	None
ENG FAIL R	Caution	None
ENG FUEL FILT SNSR L (GE)	Status	73-34-01-02
ENG FUEL FILT SNSR R (GE)	Status	73-34-01-02
ENG FUEL FILTER L (GE)	Advisory	None

Message	Level	MEL Item
ENG FUEL FILTER L (GE)	Status	None
ENG FUEL FILTER L (RR)	Advisory	73-34-01-01
ENG FUEL FILTER L (RR)	Status	73-34-01-01
ENG FUEL FILTER R (GE)	Advisory	None
ENG FUEL FILTER R (GE)	Status	None
ENG FUEL FILTER R (RR)	Advisory	73-34-01-01
ENG FUEL FILTER R (RR)	Status	73-34-01-01
ENG FUEL VALVE L	Advisory	73-21-06 73-21-08
ENG FUEL VALVE L	Status	73-21-06 73-21-08
ENG FUEL VALVE R	Advisory	73-21-06 73-21-08
ENG FUEL VALVE R	Status	73-21-06 73-21-08
ENG HP OIL FILT L	Status	79-35-01-03
ENG HP OIL FILT R	Status	79-35-01-03
ENG HPTACC VALVE L	Status	None
ENG HPTACC VALVE R	Status	None
ENG IDLE DISAGREE	Advisory	73-21-01
ENG IGNITOR L1	Status	74-00-01
ENG IGNITOR L2	Status	74-00-01
ENG IGNITOR R1	Status	74-00-01
ENG IGNITOR R2	Status	74-00-01
ENG L START EGT	Status	None
ENG LIMIT PROT L	Caution	N/A
ENG LIMIT PROT R	Caution	N/A
ENG LPTACC VALVE L	Status	75-24-01-02-01
ENG LPTACC VALVE R	Status	75-24-01-02-01
ENG OIL FILT SNSR L	Status	79-35-01-02
ENG OIL FILT SNSR R	Status	79-35-01-02
ENG OIL FILTER L	Advisory	None
ENG OIL FILTER L	Status	None
ENG OIL FILTER R	Advisory	None

Message	Level	MEL Item
ENG OIL FILTER R	Status	None
ENG OIL PRESS L	Caution	N/A
ENG OIL PRESS R	Caution	N/A
ENG OIL TEMP L	Advisory	N/A
ENG OIL TEMP R	Advisory	N/A
ENG OPU L	Status	None
ENG OPU R	Status	None
ENG OVERSPEED GOV L	Status	None
ENG OVERSPEED GOV R	Status	None
ENG R START EGT	Status	None
ENG REV LIMITED L	Advisory	78-31-01 78-34-01
ENG REV LIMITED R	Advisory	78-31-01 78-34-01
ENG REVERSER L	Advisory	78-31-01
ENG REVERSER L	Status	78-31-01
ENG REVERSER R	Advisory	78-31-01
ENG REVERSER R	Status	78-31-01
ENG REVERSER SNSR L	Status	78-36-01
ENG REVERSER SNSR R	Status	78-36-01
ENG RPM LIMITED L	Advisory	N/A
ENG RPM LIMITED R	Advisory	N/A
ENG SCAV OIL FILT L	Status	79-35-01-03
ENG SCAV OIL FILT R	Status	79-35-01-03
ENG SHUTDOWN	Caution	N/A
ENG SHUTDOWN L	Caution	N/A
ENG SHUTDOWN R	Caution	N/A
ENG START BLEED L	Status	None
ENG START BLEED R	Status	None
ENG START VALVE L	Advisory	80-11-01
ENG START VALVE L	Status	80-11-01
ENG START VALVE R	Advisory	80-11-01
ENG START VALVE R	Status	80-11-01

Message	Level	MEL Item
ENG STARTER CUTOUT L	Caution	80-11-01 80-11-03
ENG STARTER CUTOUT R	Caution	80-11-01 80-11-03
ENG TCMA L	Status	73-21-07
ENG TCMA R	Status	73-21-07
ENG THRUST L	Caution	None
ENG THRUST R	Caution	None
ENG TURB OVSP SYS L	Status	73-21-05
ENG TURB OVSP SYS R	Status	73-21-05
ENG VIB MONITOR L	Status	77-31-01
ENG VIB MONITOR R	Status	77-31-01
ENG/APU SQUIB TEST	Status	26-21-02
EQUIP COOLING	Advisory	None
EQUIP COOLING CTRL L	Status	21-27-08
EQUIP COOLING CTRL R	Status	21-27-08
EQUIP COOLING FAN L	Status	21-27-02
EQUIP COOLING FAN R	Status	21-27-02
EQUIP COOLING OVRD	Advisory	None
EQUIP DIVERT VALVE	Status	21-27-13
EQUIP FLOW DET	Status	21-27-04
EQUIP INBOARD VALVE	Status	21-27-14
EQUIP VENT FAN	Status	21-27-05
EQUIP VENT VALVE	Status	21-27-06
EXH REST UPR AFT	Status	21-29-05-02
EXH REST UPR FWD	Status	21-29-05-01

Message	Level	MEL Item
FIRE APU	Warning	None
FIRE CARD APU	Status	26-15-01
FIRE CARD ENG L	Status	None
FIRE CARD ENG R	Status	None
FIRE CARGO AFT	Warning	None

Message	Level	MEL Item
FIRE CARGO FWD	Warning	None
FIRE ENG L	Warning	None
FIRE ENG R	Warning	None
FIRE LOOP 1 APU	Status	26-15-01 26-15-01-01
FIRE LOOP 1 ENG L	Status	26-11-01
FIRE LOOP 1 ENG R	Status	26-11-01
FIRE LOOP 2 APU	Status	26-15-01 26-15-01-01
FIRE LOOP 2 ENG L	Status	26-11-01
FIRE LOOP 2 ENG R	Status	26-11-01
FIRE TEST FAIL	Warning	26-11-02 26-15-01 26-16-01 26-17-01
FIRE TEST IN PROG	Warning	N/A
FIRE TEST PASS	Warning	N/A
FIRE WHEEL WELL	Warning	None
FLAP/SLAT CONTROL	Caution	None
FLAP/SLAT CONTROL 1	Status	27-03-01
FLAP/SLAT CONTROL 2	Status	27-03-01
FLAP/SLAT SKEW SNSRS	Status	27-59-01
FLAPERON ACTUATOR	Status	27-11-04
FLAPS DRIVE	Caution	None
FLAPS PRIMARY FAIL	Caution	None
FLAPS SECONDARY FAIL	Status	27-03-02
FLIGHT CONTROL MODE	Caution	None
FLIGHT CONTROL SYS	Status	None
FLIGHT CONTROLS	Caution	None
FLOW VALVE CARGO AFT	Status	26-23-02
FLOW VALVE CARGO FWD	Status	26-23-02
FLT CONTROL VALVE	Advisory	27-02-06 27-02-07
FLT DECK FLOW DET	Status	21-27-04

Message	Level	MEL Item
FLT INST BUS CAPT	Status	None
FLT INST BUS F/O	Status	None
FLT RECORDER SYS	Status	31-31-01
FMC	Advisory	34-61-01
FMC	Comm	N/A
FMC	Status	34-61-01
FMC L	Advisory	34-61-01
FMC L	Status	34-61-01
FMC MESSAGE	Advisory	N/A
FMC R	Advisory	34-61-01
FMC R	Status	34-61-01
FMC RUNWAY DISAGREE	Caution	N/A
FUEL AUTO JETTISON	Caution	28-31-01
FUEL CROSSFEED AFT	Advisory	28-22-03
FUEL CROSSFEED AFT	Status	28-22-03
FUEL CROSSFEED FWD	Advisory	28-22-03
FUEL CROSSFEED FWD	Status	28-22-03
FUEL DISAGREE	Advisory	N/A
FUEL FLOW ENG L	Advisory	N/A
FUEL FLOW ENG R	Advisory	N/A
FUEL IMBALANCE	Advisory	N/A
FUEL IN CENTER	Advisory	N/A
FUEL ISLN VALVE APU	Status	28-25-03
FUEL JETT NOZZLE L	Advisory	28-31-04
FUEL JETT NOZZLE L	Status	28-31-04
FUEL JETT NOZZLE R	Advisory	28-31-04
FUEL JETT NOZZLE R	Status	28-31-04
FUEL JETT PUMP L	Status	28-31-03
FUEL JETT PUMP R	Status	28-31-03
FUEL JETTISON MAIN	Advisory	28-31-03
FUEL JETTISON SYS	Caution	28-31-01
FUEL JETTISON SYS	Status	28-31-01
FUEL LOW CENTER	Advisory	N/A

Message	Level	MEL Item
FUEL PRESS ENG L	Caution	None
FUEL PRESS ENG L+R	Advisory	N/A
FUEL PRESS ENG R	Caution	None
FUEL PUMP APU	Status	28-25-01
FUEL PUMP CENTER L	Advisory	28-22-02
FUEL PUMP CENTER L	Status	28-22-02
FUEL PUMP CENTER R	Advisory	28-22-02
FUEL PUMP CENTER R	Status	28-22-02
FUEL PUMP L AFT	Advisory	28-22-01
FUEL PUMP L AFT	Status	28-22-01
FUEL PUMP L FWD	Advisory	28-22-01
FUEL PUMP L FWD	Status	28-22-01
FUEL PUMP R AFT	Advisory	28-22-01
FUEL PUMP R AFT	Status	28-22-01
FUEL PUMP R FWD	Advisory	28-22-01
FUEL PUMP R FWD	Status	28-22-01
FUEL QTY CHANNEL	Status	28-41-02
FUEL QTY INDICATION	Status	28-41-01
FUEL QTY LOW	Caution	N/A
FUEL SCAVENGE SYS	Advisory	28-22-04
FUEL SOV BATTERY	Status	28-22-06
FUEL SPAR VALVE L	Status	None
FUEL SPAR VALVE R	Status	None
FUEL TEMP INDICATION	Status	28-43-01
FUEL TEMP LOW	Advisory	N/A
FUEL VALVE APU	Advisory	28-25-02
FUEL VALVE APU	Status	28-25-02

Message	Level	MEL Item
G/S ANTENNA C	Status	34-31-02
G/S ANTENNA L	Status	34-31-02
G/S ANTENNA R	Status	34-31-02
GEAR CONTROL	Status	32-31-02

Message	Level	MEL Item
GEAR DISAGREE	Caution	None
GEAR DOOR	Advisory	None
GEAR INDICATION SYS	Status	32-61-01
GND PROX SYS	Advisory	34-46-01
GND PROX SYS	Status	34-46-01-01 34-46-01-03-01B
GPS	Advisory	34-58-01
GPS L	Advisory	34-58-01
GPS L	Status	34-58-01
GPS R	Advisory	34-58-01
GPS R	Status	34-58-01
GROUND CALL	Comm	N/A
GROUND TEST ENABLE	Status	N/A

Message	Level	MEL Item
HEAT PITOT C	Advisory	30-31-01
HEAT PITOT C	Status	30-31-01-03
HEAT PITOT L	Advisory	30-31-01
HEAT PITOT L	Status	30-31-01-02
HEAT PITOT L+C+R	Advisory	None
HEAT PITOT R	Advisory	30-31-01
HEAT PITOT R	Status	30-31-01-01
HEAT TAT	Status	30-33-01
HF DATALINK	Advisory	23-11-01-01
HF DATALINK OFF	Memo	N/A
HYD AUTO CONTROL C	Advisory	None
HYD AUTO CONTROL L	Advisory	29-11-05
HYD AUTO CONTROL R	Advisory	29-11-05
HYD ISLN VALVE	Status	29-11-06
HYD OVERHEAT DEM C1	Advisory	29-11-03
HYD OVERHEAT DEM C2	Advisory	29-11-03
HYD OVERHEAT DEM L	Advisory	None
HYD OVERHEAT DEM R	Advisory	None

Message	Level	MEL Item
HYD OVERHEAT PRI C1	Advisory	29-11-02
HYD OVERHEAT PRI C2	Advisory	29-11-02
HYD OVERHEAT PRI L	Advisory	None
HYD OVERHEAT PRI R	Advisory	None
HYD PRESS DEM C1	Advisory	29-11-03 29-11-04
HYD PRESS DEM C2	Advisory	29-11-03 29-11-04
HYD PRESS DEM L	Advisory	29-11-04 29-31-02-01
HYD PRESS DEM R	Advisory	29-11-04 29-31-02-01
HYD PRESS IND DEM C1	Status	29-31-02-02
HYD PRESS IND DEM C2	Status	29-31-02-02
HYD PRESS IND DEM L	Status	29-31-02-01
HYD PRESS IND DEM R	Status	29-31-02-01
HYD PRESS IND PRI C1	Status	29-31-02-02
HYD PRESS IND PRI C2	Status	29-31-02-02
HYD PRESS IND PRI L	Status	29-31-02-01
HYD PRESS IND PRI R	Status	29-31-02-01
HYD PRESS PRI C1	Advisory	29-11-02 29-31-02-02
HYD PRESS PRI C2	Advisory	29-11-02 29-31-02-02
HYD PRESS PRI L	Advisory	29-31-02-01
HYD PRESS PRI R	Advisory	29-31-02-01
HYD PRESS SYS C	Caution	None
HYD PRESS SYS L	Caution	None
HYD PRESS SYS L+C	Caution	None
HYD PRESS SYS L+C+R	Caution	None
HYD PRESS SYS L+R	Caution	None
HYD PRESS SYS R	Caution	None
HYD PRESS SYS R+C	Caution	None

Message	Level	MEL Item
HYD PUMP DEM C1	Status	29-11-03 29-11-04
HYD PUMP DEM C2	Status	29-11-03 29-11-04
HYD PUMP DEM L	Status	29-11-04 29-31-02-01
HYD PUMP DEM R	Status	29-11-04 29-31-02-01
HYD PUMP PRI C1	Status	29-11-02
HYD PUMP PRI C2	Status	29-11-02
HYD PUMP PRI L	Status	29-31-02-01
HYD PUMP PRI R	Status	29-31-02-01
HYD QTY LOW C	Advisory	None
HYD QTY LOW L	Advisory	None
HYD QTY LOW L+C	Caution	None
HYD QTY LOW L+C+R	Caution	None
HYD QTY LOW L+R	Caution	None
HYD QTY LOW R	Advisory	None
HYD QTY LOW R+C	Caution	None
HYD RSVR PRESS C	Status	None
HYD RSVR PRESS L	Status	None
HYD RSVR PRESS R	Status	None
HYD SYS PRESS SNSR C	Status	29-31-01
HYD SYS PRESS SNSR L	Status	29-31-01
HYD SYS PRESS SNSR R	Status	29-31-01
HYD TEMP IND DEM C1	Status	29-32-01-02
HYD TEMP IND DEM C2	Status	29-32-01-02
HYD TEMP IND DEM L	Status	29-32-01-01
HYD TEMP IND DEM R	Status	29-32-01-01
HYD TEMP IND PRI C1	Status	29-32-01-02
HYD TEMP IND PRI C2	Status	29-32-01-02
HYD TEMP IND PRI L	Status	29-32-01-01
HYD TEMP IND PRI R	Status	29-32-01-01
HYDIM CARD HCL	Status	29-11-05

Message	Level	MEL Item
HYDIM CARD HCR	Status	29-11-05
HYDIM CARD HL	Status	29-11-05
HYDIM CARD HR	Status	29-11-05

Message	Level	MEL Item
ICE DETECTOR L	Status	30-81-01
ICE DETECTOR R	Status	30-81-01
ICE DETECTORS	Advisory	30-81-01
ICING ENG	Caution	N/A
ICING WING	Advisory	N/A
IDG VALVE CLOSED L	Status	24-11-01
IDG VALVE CLOSED R	Status	24-11-01
IFES COOLING FAN	Status	21-27-10
ILS ANTENNA	Caution	34-31-01 34-31-02 34-31-03
ILS C	Status	34-31-01
ILS L	Status	34-31-01
ILS R	Status	34-31-01
INSUFFICIENT FUEL	Advisory	N/A

Message	Level	MEL Item
JETT ISLN VALVE L	Status	28-31-02
JETT ISLN VALVE R	Status	28-31-02

Message	Level	MEL Item
L GEAR DOOR SENSOR	Status	32-61-02
L GEAR UPLOCK SENSOR	Status	32-61-03
LANDING ALTITUDE	Advisory	N/A
LAV-GALLEY FAN L	Status	21-26-01
LAV-GALLEY FAN R	Status	21-26-01
LOC ANTENNA C	Status	34-31-03
LOC ANTENNA L	Status	34-31-03
LOC ANTENNA R	Status	34-31-03

Message	Level	MEL Item
LSCF ASG CARD L	Status	31-09-01 31-09-01-01
LSCF ASG CARD R	Status	31-09-01 31-09-01-02 DELETION
LSCF PWR SUPPLY 1	Status	31-09-02-01
LSCF PWR SUPPLY 2	Status	31-09-02-01

Message	Level	MEL Item
MAIN BATTERY	Status	None
MAIN BATTERY DISCH	Advisory	None
MAIN BATTERY OVHT	Status	None
MAIN GEAR BRACE L	Caution	None
MAIN GEAR BRACE R	Caution	None
MAIN GEAR STEERING	Advisory	32-53-01
MAIN GEAR STEERING	Status	32-53-01
MAN PRESS SENSOR L	Status	36-21-01
MAN PRESS SENSOR R	Status	36-21-01
MANIFOLD SENSOR L	Status	36-21-01
MANIFOLD SENSOR R	Status	36-21-01
MODE CTRL PANEL LANE	Status	22-11-03

Message	Level	MEL Item
NAV ADIRU INERTIAL	Caution	None
NAV AIR DATA SYS	Advisory	None
NAV UNABLE RNP	Caution	N/A
NAV UNABLE RNP	Advisory	N/A
NITROGEN GEN PERF	Status	47-11-01-01
NITROGEN GEN SYS	Status	47-11-01
NO AUTOLAND	Caution	22-11-07
NO AUTOLAND	Advisory	22-11-07
NO AUTOLAND	Status	22-11-07
NO ELECTRONICS ON	Memo	N/A
NO LAND 3	Caution	22-11-07-01

Message	Level	MEL Item
NO LAND 3	Advisory	22-11-07-01 22-11-09 27-02-04 34-21-03 34-21-04 34-21-05 34-21-07 34-31-01 34-31-02 34-31-03 34-33-01
NO LAND 3	Status	22-11-07-01
NO SMOKING ON	Memo	N/A
NOSE GEAR DOOR SNSR	Status	32-61-02
NOSE GEAR PRESS XDCR	Status	27-48-04
NOSE GEAR UP SENSOR	Status	32-61-03

Message	Level	MEL Item
OIL PRESS SENSORS L	Status	None
OIL PRESS SENSORS R	Status	None
OIL QTY SENSOR L	Status	79-31-01
OIL QTY SENSOR R	Status	79-31-01
OIL TEMP SENSORS L	Status	None
OIL TEMP SENSORS R	Status	None
OPBC L	Status	23-93-01
OPBC R	Status	23-93-01
OPIC LA1	Status	23-93-02
OPIC LA2	Status	23-93-02
OPIC RA1	Status	23-93-02
OPIC RA2	Status	23-93-02
OUTFLOW VALVE AFT	Advisory	21-31-03
OUTFLOW VALVE AFT	Status	21-31-03
OUTFLOW VALVE FWD	Advisory	21-31-03
OUTFLOW VALVE FWD	Status	21-31-03
OVERHEAT CIRCUIT L1	Status	26-11-02

Message	Level	MEL Item
OVERHEAT CIRCUIT L2	Status	26-11-02
OVERHEAT CIRCUIT R1	Status	26-11-02
OVERHEAT CIRCUIT R2	Status	26-11-02
OVERHEAT ENG L	Caution	None
OVERHEAT ENG R	Caution	None
OVERSPEED	Warning	N/A
OVERSPEED SYS	Status	None
OVERSPEED VFE	Status	None
OVERSPEED VMO/MMO	Status	None
OVRD VALVE MOTOR L	Status	21-27-03
OVRD VALVE MOTOR R	Status	21-27-03

Message	Level	MEL Item
PACK ACM L	Status	21-52-01
PACK ACM R	Status	21-52-01
PACK FCV L	Status	21-51-02
PACK FCV LWR L	Status	21-51-02-02
PACK FCV LWR R	Status	21-51-02-02
PACK FCV R	Status	21-51-02
PACK FCV UPR L	Status	21-51-02-01
PACK FCV UPR R	Status	21-51-02-01
PACK L	Advisory	21-51-01
PACK L	Status	21-51-01
PACK L+R	Caution	21-51-01
PACK MODE L	Advisory	21-52-01 21-52-02 21-52-07
PACK MODE R	Advisory	21-52-01 21-52-02 21-52-07
PACK OUT TEMP SNSR L	Status	21-52-04
PACK OUT TEMP SNSR R	Status	21-52-04
PACK R	Advisory	21-51-01
PACK R	Status	21-51-01

Message	Level	MEL Item
PARKING BRAKE SET	Memo	N/A
PASS OXYGEN C	Status	35-21-01
PASS OXYGEN L	Status	35-21-01
PASS OXYGEN LOW	Advisory	35-21-01
PASS OXYGEN ON	Advisory	N/A
PASS OXYGEN R	Status	35-21-01
PASS SIGNS ON	Memo	N/A
PASSENGER ADDRESS	Status	23-31-01
PDCU L	Status	23-93-03
PDCU R	Status	23-93-03
PFC CHANNEL	Status	27-02-03
PFC CONTROL LANES	Status	27-02-02
PFCS INTERFACE	Status	27-02-04
PILOT RESPONSE	Warning	N/A
PILOT RESPONSE	Caution	N/A
PILOT RESPONSE	Advisory	N/A
PITCH DOWN AUTHORITY	Caution	None
PITCH UP AUTHORITY	Caution	None
PITOT ADM C	Status	34-21-04-03
PITOT ADM L	Status	34-21-04-02
PITOT ADM R	Status	34-21-04-01
PR SNS REST UPR FWD	Status	21-29-07
PRI FLIGHT COMPUTERS	Caution	None
PRINTER	Comm	N/A
PSEU 1	Status	None
PSEU 1 CHANNEL	Status	32-08-01
PSEU 2	Status	None
PSEU 2 CHANNEL	Status	32-08-01

Message	Level	MEL Item
R GEAR DOOR SENSOR	Status	32-61-02
R GEAR UPLOCK SENSOR	Status	32-61-03
RADIO ALT C	Status	34-33-01

Message	Level	MEL Item
RADIO ALT L	Status	34-33-01
RADIO ALT MONITOR C	Status	34-33-01
RADIO ALT MONITOR L	Status	34-33-01
RADIO ALT MONITOR R	Status	34-33-01
RADIO ALT R	Status	34-33-01
RADIO TRANSMIT	Advisory	N/A
RAM AIR EXIT DOOR L	Status	21-52-06
RAM AIR EXIT DOOR R	Status	21-52-06
RAM AIR INLET DOOR L	Status	21-52-05
RAM AIR INLET DOOR R	Status	21-52-05
RAT DEPLOY INOP	Status	None
RAT GEN HEAT	Status	29-21-01
RAT UNLOCKED	Advisory	None
RECIRC FAN	Status	21-25-01
RECIRC FANS OFF	Memo	N/A
REMOTE LIGHT SENSOR	Status	31-61-03
RESERVE BRAKES/STRG	Advisory	29-11-06
REVERSER INTERLOCK L	Status	78-34-01
REVERSER INTERLOCK R	Status	78-34-01
RSCF ASG CARD L	Status	31-09-01 31-09-01-02
RSCF ASG CARD R	Status	31-09-01 31-09-01-02
RSCF PWR SUPPLY 1	Status	31-09-02-02B
RSCF PWR SUPPLY 2	Status	31-09-02-02A

Message	Level	MEL Item
SAARU	Status	34-21-07
SATCOM	Advisory	23-15-01
SATCOM COOLING FAN L	Status	21-27-09
SATCOM COOLING FAN R	Status	21-27-09
SATCOM DATALINK	Advisory	23-15-01-02
SATCOM DATALINK OFF	Memo	N/A

Message	Level	MEL Item
SATCOM HI GAIN	Status	23-15-01-01
SATCOM MESSAGE	Comm	N/A
SATCOM SYSTEM	Status	23-15-01
SATCOM VOICE	Advisory	23-15-01
SATVOICE AVAIL	Comm	N/A
SATVOICE LOST	Advisory	N/A
SEATBELTS ON	Memo	N/A
SELCAL	Comm	N/A
SEMI LEVER GEAR	Status	32-30-02
SEMI LEVER GEAR LOCK	Status	32-30-02
SEMI LEVER GEAR SYS	Status	32-30-02
SGL SOURCE AIR DATA	Advisory	None
SGL SOURCE DISPLAYS	Caution	None
SGL SOURCE RAD ALT	Advisory	None
SINGLE SOURCE F/D	Advisory	22-11-10
SINGLE SOURCE ILS	Caution	34-31-01
SLATS DRIVE	Caution	None
SLATS PRIMARY FAIL	Caution	None
SLATS SECONDARY FAIL	Status	27-03-03
SMOKE COMPT UPR DR 1	Caution	N/A
SMOKE COMPT UPR DR 3	Caution	N/A
SMOKE COMPT UPR DR 5	Caution	N/A
SMOKE CREW REST F/D	Caution	N/A
SMOKE LAV/COMPT	Advisory	N/A
SMOKE LAVATORY	Advisory	N/A
SMOKE REST UPR DR 1	Caution	N/A
SMOKE REST UPR DR 3	Caution	N/A
SMOKE REST UPR DR 5	Caution	N/A
SOV REST UPR AFT	Status	21-29-04-02
SOV REST UPR FWD	Status	21-29-04-01 21-29-06
SOV REST UPR SEC FWD	Status	21-29-06
SPEEDBRAKE ARMED	Memo	N/A

Message	Level	MEL Item
SPEEDBRAKE EXTENDED	Caution	N/A
SPEEDBRAKE LEV XDCR	Status	27-61-01
SPOILER ACTUATOR	Status	27-61-03
SPOILERS	Advisory	27-61-03
STAB AUTO SHUTDOWN	Status	None
STAB GREENBAND	Advisory	27-48-03 27-48-04
STAB POSITION XDCR	Status	27-48-02
STAB RATE VALVE	Status	27-41-03
STABILIZER	Warning	None
STABILIZER C	Advisory	None
STABILIZER CUTOUT	Advisory	N/A
STABILIZER R	Advisory	None
STALL WARNING SYS L	Status	27-32-01
STALL WARNING SYS R	Status	27-32-01
STANDBY INVERTER	Status	None
STATIC ADM C	Status	34-21-05-03
STATIC ADM L	Status	34-21-05-02
STATIC ADM R	Status	34-21-05-01

Message	Level	MEL Item
TAIL SKID	Advisory	32-72-01 32-72-02
TAIL SKID	Status	32-72-01
TAIL SKID SENSOR	Status	32-72-02
TAIL STRIKE	Caution	32-71-01 DELETION
TAIL STRIKE CHAN 1	Status	32-71-01
TAIL STRIKE CHAN 2	Status	32-71-01
TAT	Status	None
TCAS	Advisory	34-45-01
TCAS	Status	34-45-01
TCAS OFF	Advisory	N/A
TCAS RA CAPTAIN	Advisory	34-45-01

Message	Level	MEL Item
TCAS RA F/O	Advisory	34-45-01
TERR OVRD	Advisory	N/A
TERR POS	Advisory	34-46-01-03
TERR SYS	Status	34-46-01-03
THRUST ASYM COMP	Advisory	27-02-08
THRUST ASYM COMP	Status	27-02-08
TIRE PRESS	Advisory	32-49-01
TIRE PRESS	Status	32-49-01
TIRE PRESS SYS	Status	32-49-01
TRANSPONDER L	Advisory	34-53-01
TRANSPONDER L	Status	34-53-01
TRANSPONDER R	Advisory	34-53-01
TRANSPONDER R	Status	34-53-01
TRIM AIR L	Advisory	21-62-01 21-62-02
TRIM AIR L	Status	21-62-01
TRIM AIR PRSOV L	Status	21-62-02
TRIM AIR PRSOV R	Status	21-62-02
TRIM AIR R	Advisory	21-62-01 21-62-02
TRIM AIR R	Status	21-62-01
TURB OVHT SNSR ENG L	Status	77-22-01
TURB OVHT SNSR ENG R	Status	77-22-01

Message	Level	MEL Item
VHF DATALINK	Advisory	23-12-01-01
VHF DATALINK OFF	Memo	N/A
VMO GEAR DOWN	Memo	N/A
VNAV STEP CLIMB	Advisory	N/A
VOR L	Status	34-32-01 34-51-01
VOR R	Status	34-51-01
VSCF VALVE CLOSED L	Status	None
VSCF VALVE CLOSED R	Status	None

Message	Level	MEL Item
WAI CARD	Status	30-11-02
WAI PRESS SENSOR L	Status	30-11-01
WAI PRESS SENSOR R	Status	30-11-01
WAI VALVE L	Status	30-11-01
WAI VALVE R	Status	30-11-01
WARNING SPEAKER L	Status	31-51-03
WARNING SPEAKER R	Status	31-51-03
WEU CHANNEL L1	Status	31-51-04
WEU CHANNEL L2	Status	31-51-04
WEU CHANNEL R1	Status	31-51-04
WEU CHANNEL R2	Status	31-51-04
WINDOW FLT DECK L	Advisory	56-11-01
WINDOW FLT DECK R	Advisory	56-11-01
WINDOW HEAT	Advisory	None
WINDOW HEAT BACKUP L	Status	None
WINDOW HEAT BACKUP R	Status	None
WINDOW HEAT L FWD	Advisory	30-41-01
WINDOW HEAT L FWD	Status	30-41-01
WINDOW HEAT L SIDE	Advisory	30-41-02
WINDOW HEAT L SIDE	Status	30-41-02
WINDOW HEAT R FWD	Advisory	30-41-01
WINDOW HEAT R FWD	Status	30-41-01
WINDOW HEAT R SIDE	Advisory	30-41-02
WINDOW HEAT R SIDE	Status	30-41-02
WINDOWS	Advisory	56-11-01
WINDSHEAR PRED	Status	34-43-01-01
WINDSHEAR REAC	Status	34-46-01-02
WINDSHEAR SYS	Advisory	34-43-01 34-46-01
WXR SYS	Status	34-43-01

General Notes

MEL provides an aid for flight and maintenance crew in an effort to bring the aircraft from its point of origin to its point of destination safely and on schedule.

The list has been prepared according to the requirements of the official regulations. For company requirements regarding passenger comfort, refer to Non-essential Equipment & Furnising (NEF).

The MEL is not applicable for inflight malfunctions. Should an inflight malfunction occur, the actions taken shall be as outlined in the Non-Normal Checklist of the affected system.

For documents required to be on board, refer to Document Checklist on board.

MEL Items have a table of contents for each ATA. Each section of information in the MEL has been assigned a unique number and when appropriate, is followed by maintenance or operations information.

Description and Use of MEL

As a general rule, the MEL shall be referred to only if repair or replacement of unserviceable units cannot be made prior to scheduled departure.

The MEL specifies equipment or systems which must be operative or may be wholly or partly inoperative without sacrificing flight safety or seriously reducing passenger comfort. However, equipment or systems obviously basic to aircraft airworthiness such as wings, rudders, flaps, engines, landing gear, etc. are not listed and must be operative for all flights.

It is important to note that all items which are related to the airworthiness of the aircraft and not included in the MEL are automatically required to be operative.

If there is any doubt as to whether the equipment may be required or not, the P-i-C should request advice from Head Office via BKKOP before a final decision is taken.

Dispatching an aircraft with multiple MEL items inoperative is permitted. However, it must be determined prior to dispatch that the net effect of multiple discrepancies will not result in a degradation in the level of safety and/or undue increase in crew workload.

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" means the equipment, system, component, or function listed in the Item Heading.

   B. "Number Installed" (**Installed**) 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 (e.g., passenger cabin items) a number is not required. " - " symbol indicates a variable number (quantity) of installed item.

C. "Number Required for Dispatch" (**Required**) is the minimum number (quantity) of items required for operation provided the conditions specified are met. " - " symbol indicates a variable number (quantity) of required item.

D. "Remarks or Exceptions" includes a statement either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes. "Notes:" provides additional information for crewmember or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve THAI of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.

2. "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).

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

4. "(MV)" symbol indicates that, if dispatched per the MEL item there will be a significant impact on operations, for example, performance penalty or blocked seats.

5. "(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.

6. "(P)" symbol indicates the item must be placarded to inform and remind crewmember and maintenance personnel of the equipment condition.

7. "Repair Intervals" (**Interval**) specify the time interval in which the aircraft may be operated with the item inoperative. After the specified time interval, or if the time interval remaining is not sufficient to complete the next flight, the aircraft is not permitted to be dispatched from any station until the inoperative item has been repaired. The time interval, therefore, provides indication of the time in which the inoperative item must be repaired. Time intervals are divided into the following categories:

A. Category A. Items in this category shall be repaired within the time interval specified under Remarks or Exceptions of the MEL. For time intervals specified in "flight days", the day the malfunction was recorded in the aircraft maintenance logbook is excluded. For all other time intervals (flights, flight legs, cycles, hours, etc.), repair tracking begins

at the point when the malfunction is deferred in accordance with the MEL.

B. Category B. Items in this category may be inoperative for dispatch but shall be repaired within three (3) consecutive calendar days (72 hours), excluding the day the malfunction was recorded in the aircraft logbook. For example, if it was recorded at 10 a.m. on Jan 26, the 3-day interval would begin at midnight on the 26th and end at midnight on the 29th.

C. Category C. Items in this category may be inoperative for dispatch but shall be repaired within ten (10) consecutive calendar days (240 hours) excluding the day the malfunction was recorded in the aircraft logbook. For example, if it was recorded at 10 a.m. on Jan 26, the 10-day interval would begin at midnight on the 26th and end at midnight on February 5.

D. Category D. Items in this category may be inoperative for dispatch but shall be repaired within 120 consecutive calendar days (2880 hours) excluding the day the malfunction was recorded.

Note: Repair intervals are counted in UTC.

Note: Repair intervals are not specified for items which are not required by regulations or do not have direct impact on operation of flight or flight safety. These items have (–) in the Repair Interval column.

Note: Some MEL items may have repair intervals which differ from the intervals specified in the MMEL. These repair intervals are specified in accordance with requirements from The Civil Aviation Authority of Thailand (CAAT).

Note: For economic reasons, these items shall be repaired as soon as possible.

8. "Icing conditions" means an atmospheric environment that may cause ice to form on the aircraft or in the engines.

9. "Flight Day" means a 24 hour period (from midnight to midnight) Universal Coordinated Time (UCT) during which at least one flight is initiated.

10. "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.

Extension of Repair Interval for Category C Items

Maintenance Control Center Department (BKKMC) is responsible for controlling Aircraft Rectification Interval Extensions. In circumstances when there is

insufficient ground time to meet the repair time limit or when spare parts are not available, the Quality Assurance Department (BKKTQ) is authorized to apply a one-time repair interval extension for Category C MEL items in accordance with TTPM-TQ 620. The Civil Aviation Authority of Thailand (CAAT) shall be notified of the extension in advanced. A copy of the Dispensation Letter shall be placed in the Flight Deck Log. If the P-i-C considers that the inoperative item will not adversely affect the flight and all the conditions in the MEL have been fulfilled, he can then accept the aircraft for flight.

Repair interval for Category A, B, and D MEL items cannot be extended.

Responsibility for Application of MEL

Close cooperation is required between the P-i-C and Maintenance in order to determine the best course of action to be taken when a system or component failure has occurred. Failures in the cabin, galley or lavatory systems require cooperation with the Inflight Manager.

1. Maintenance responsibility

    A. To make every effort to have the aircraft fully serviceable prior to scheduled departure time.

    B. If it becomes evident that the failure cannot be corrected in time, inform the P-i-C as early as possible and obtain his decision as to whether repair shall be made or not.

    C. If the item is marked with (MV), send MAINTAVI message as soon as possible.

    D. To identify the failure and repair interval in Flight Deck Log and ensure that the fault is definitely localized and isolated according to appropriate procedure in the MM so that it will not affect the operation of any other system.

    E. To ensure that the failure is repaired within the specified repair interval.

    F. To placard the affected system or item in a suitable manner.

    G. To issue Maintenance Release.

2. Pilot-in-Command’s responsibility

    A. To take the final decision as to whether the subject failure has to be remedied prior to takeoff or if he can accept the aircraft without corrective action in order to avoid delaying the flight. The P-i-C is, however, not allowed to commence a takeoff with less equipment functioning than required by the MEL.

    B. To ensure that he is aware of all operational and technical consequences of the failure concerned, and when applicable, check that the system is isolated or deactivated by means of associated controls and/or indicating systems.

Placards

1. Placards for inoperative aircraft system/component include references to appropriate MEL item and aircraft log sequence. A placard is placed close to the switch/control of the inoperative system/equipment. For inoperative system/component that has no switch/control, the placard is placed on the associated system panel.
2. Inoperative systems/components that result in unusable facilities in the cabin such as passenger/crew seats, lavatories, overhead stowage bin/closet are placarded "INOPERATIVE PLEASE DO NOT USE".
3. Passenger seats assigned for cabin crew are placarded "RESERVED".

Engine Indication and Crew Alerting System (EICAS)

EICAS provides different priority levels of system messages (WARNING, CAUTION, ADVISORY, STATUS and MAINTENANCE). Any messages that affects airplane dispatch status will be displayed at a STATUS message level or higher. The absence of an EICAS STATUS or higher level (WARNING, CAUTION, ADVISORY) indicates that the system/component is operating within its approved operating limits or tolerances.

System conditions that result only in a maintenance level message, i.e. no correlation with a higher level EICAS message, do not affect dispatch and do not require action other than as addressed within THAI standard maintenance program.

Fuel Burn Penalty Negligibility Criteria

Performance penalties resulting in increased flight planning fuel can be considered negligible if the penalty is less than 0.5%.

Special Operations Requirements

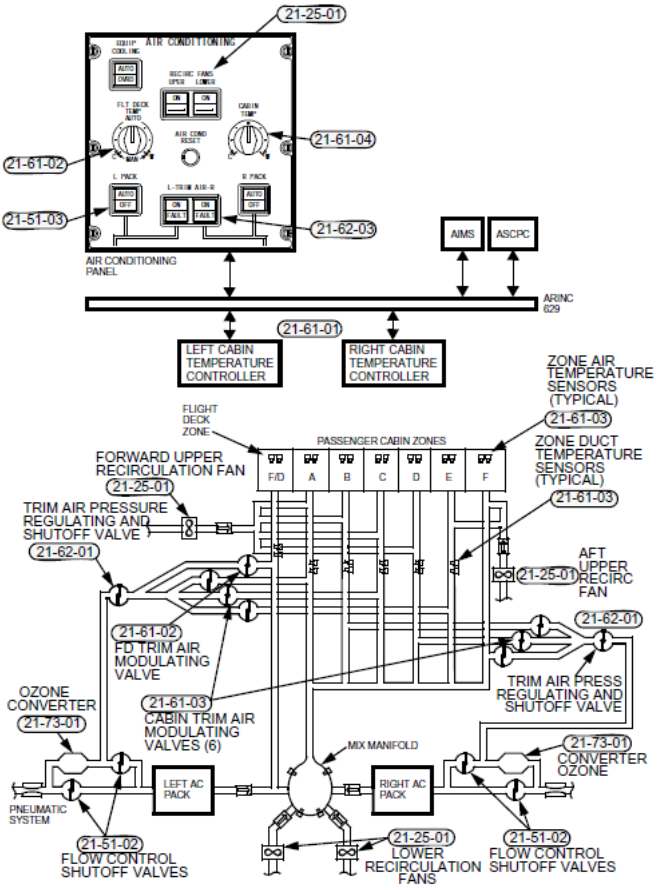
The dispatch requirements for special operations are addressed in relevant MEL items. These include:

- Extended Operations (EDTO)
- Performace Based Navigation (PBN)
- Low Visibility Operations (LVO)
- Reduced Vertical Separation Minima (RVSM)
- Future Air Navigation Systems (FANS).

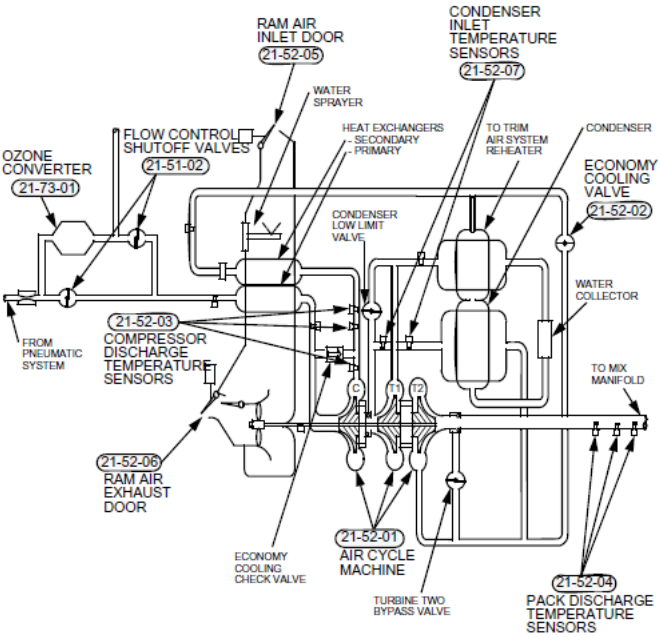
For inflight requirements and procedures, refer to QRH Chapter OI.

AIR CONDITIONING

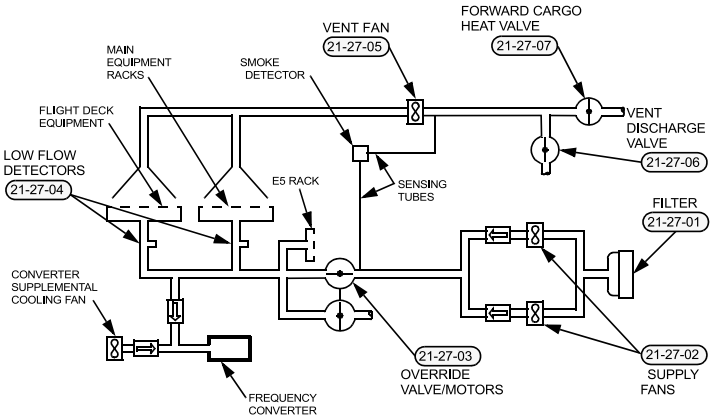
General Locations



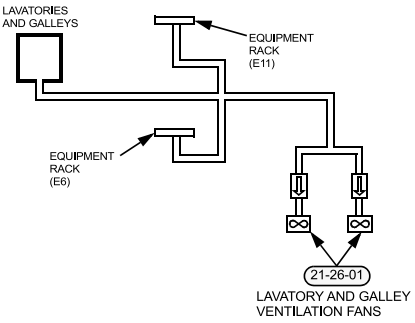
AIR CONDITIONING SYSTEM



AIR CONDITIONING PACK
21-51-01

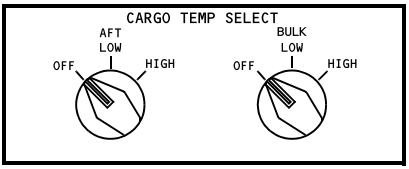


FORWARD EQUIPMENT COOLING SYSTEM

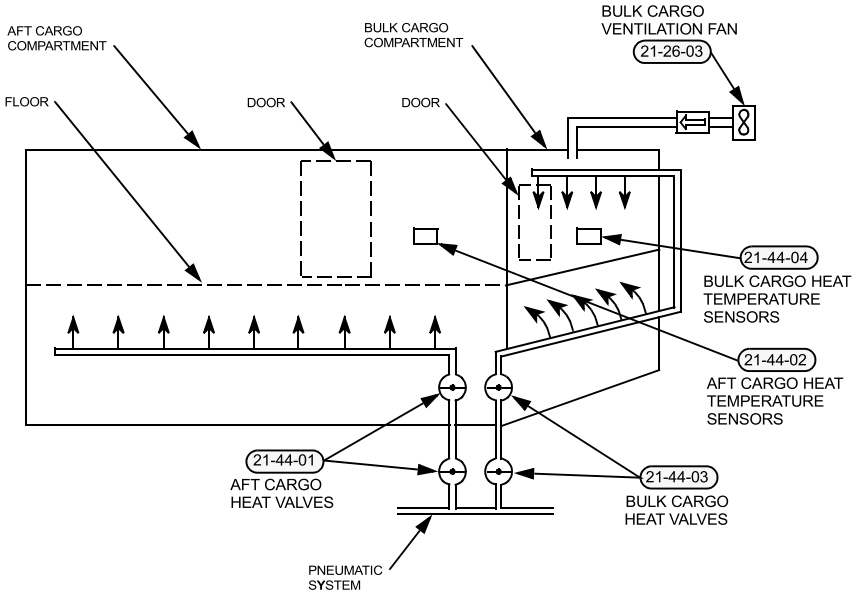


AFT EQUIPMENT COOLING SYSTEM

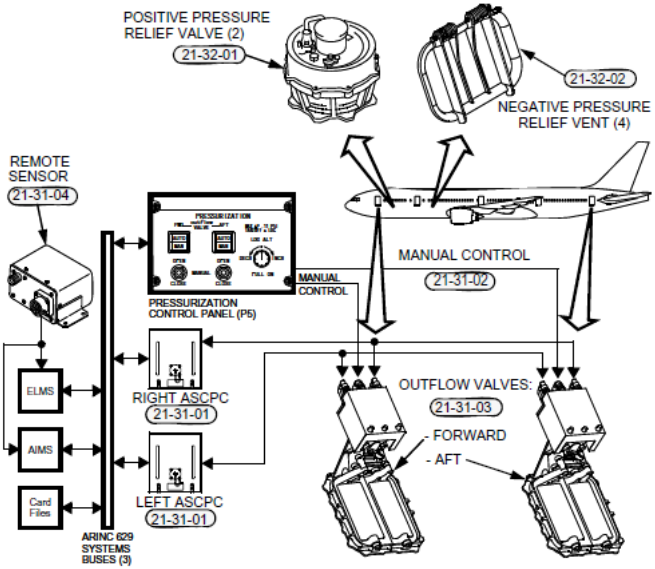
EQUIPMENT COOLING, AND LAVATORY AND
GALLEY VENTILATION SYSTEMS



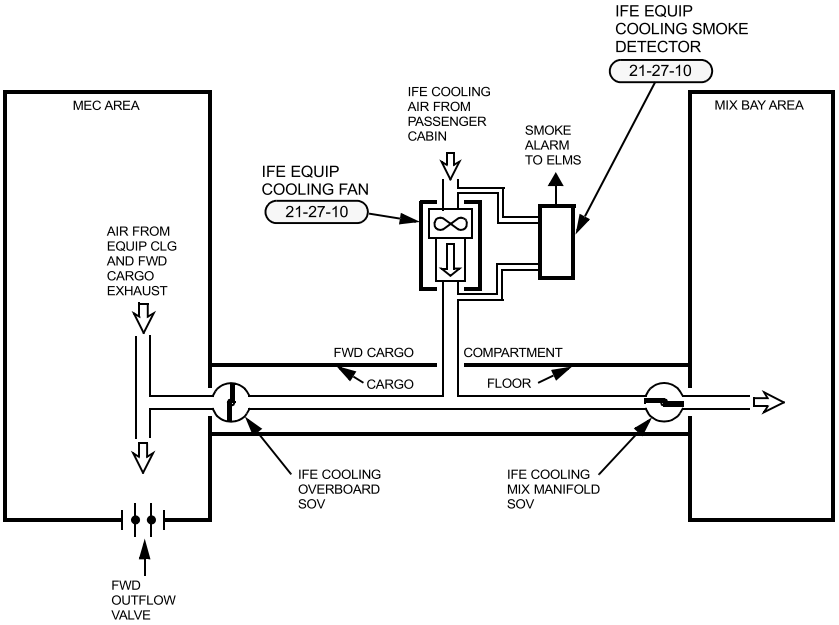
CARGO HEAT PANEL (P61)



AFT AND BULK CARGO COMPARTMENT HEATING SYSTEM



CABIN PRESSURE CONTROL



IN-FLIGHT ENTERTAINMENT EQUIPMENT COOLING SYSTEM
NOTE: SHOWN IN NORMAL IN-AIR MODE

21-00-01 Environmental Control System Miscellaneous Cards (ECSMC)

21-00-01-01 Passenger

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

One may be inoperative deactivated provided:

a. Associated ECSMC is deactivated.
b. Both ARINC Signal Gateway cards in the opposite cardfile operate normally.
c. Opposite equipment cooling controller operates normally.
d. Opposite equipment cooling supply fan operates normally.
e. Opposite lavatory/galley fan operates normally.
f. One pack operates normally.

DELETION

MAINTENANCE (M)

Note: For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

Deactivate the inoperative ECSMC and for Forward Cargo Air Conditioning installed with right ECSMC inoperative, position FWD CARGO A/C control OFF (AMM 21-00-00/901).

1. Deactivate the inoperative ECSMC (AMM 21-00-00/901).

Notes:
1. For left ECSMC deactivated:The left lower and forward upper recirculation fans are inoperative and the RECIRC FAN status message will be displayed. The aft cargo heat is inoperative and the CARGO HEAT AFT advisory message will be displayed.
2. For right ECSMC deactivated: The right lower and aft upper recirculation fans are inoperative and the RECIRC FAN status message will be displayed. The bulk cargo heat is inoperative and the CARGO HEAT BULK advisory message will be displayed.

A. Gain access to the right systems cardfile (P84) or left systems cardfile (P85) in the main equipment center.
B. Set the power switch for the inoperative ECSMC to the OFF position.

OPERATIONS (O)

1. For left ECSMC deactivated:

A. Aft cargo heat is inoperative and the CARGO HEAT AFT advisory message will be displayed.

B. Use MEL Item 21-44-01 (O) Note for predicting aft cargo compartment temperatures. Temperature sensitive cargo should not be carried in the aft cargo compartment.

Note: Actual aft cargo compartment temperature will not be available on the Air Synoptic.

C. Left lower and forward upper recirculation fans are inoperative. Increase flight planning fuel by 0.7%.

2. For right ECSMC deactivated:

A. Bulk cargo heat is inoperative and the CARGO HEAT BULK advisory message will be displayed.

B. Use MEL Item 21-44-03 (O) Note for predicting bulk cargo compartment temperatures. Temperature sensitive cargo should not be carried in the bulk cargo compartment.

Note: Actual bulk cargo compartment temperature will not be available on the Air Synoptic.

C. Right lower and aft upper recirculation fans are inoperative. Increase flight planning fuel by 0.7%.

21-25-01 Recirculation Fans

21-25-01-01 Passenger

Interval	Installed	Required	Procedure
C	4	0	**(M) (O) (P) (MV)**

May be inoperative provided.

a. Associated recirculation fan is deactivated.

MAINTENANCE (M)

Note: The RECIRC FAN status message indicates one or more fans are inoperative.

Deactivate the inoperative recirculation fan (AMM 21-00-00/901).

1. Determine which recirculation fan is inoperative.
   A. Position both Air Conditioning Panel (P5) PACK switches to OFF.
   B. Position both Air Conditioning Panel (P5) RECIRC FANS switches to ON.
   C. On the Air Conditioning Maintenance page, use the recirculation fan status to determine the inoperative fan.
   D. Position both Air Conditioning Panel (P5) PACK switches to AUTO.
2. Deactivate the inoperative recirculation fan.
   A. For forward upper recirculation fan inoperative:
      1) Open and collar the P110 panel FWD UPR RECIRC FAN circuit breaker.
   B. For aft upper recirculation fan inoperative:
      1) Open and collar the P210 panel AFT UPR RECIRC FAN circuit breaker.
   C. For left lower recirculation fan inoperative:
      1) Open and collar the P110 panel L LWR RECIRC FAN circuit breaker.
   D. For right lower recirculation fan inoperative: -200,-200ER
      1) Open and collar the P210 panel R LWR RECIRC FAN circuit breaker.
   E. For right lower recirculation fan inoperative: -300,-300ER
      1) Open the P210 panel AFT UPR/R LWR RECIRC FAN CTRL circuit breaker.

2) Gain access to the lower recirculation fans by removing the aft endwall in the forward cargo compartment.

3) Disconnect, cap and stow the electrical connector (DB21252) from the right lower recirculation fan.

4) Re-install the endwall.

5) Close the P210 panel AFT UPR/R LWR RECIRC FAN CTRL circuit breaker.

OPERATIONS (O)

1. For two recirculation fans inoperative, increase flight planning fuel by 0.7%, plus 0.3% for each additional inoperative fan.

21-25-01 Recirculation Fans

21-25-01-01 Passenger

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

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

21-26-01 Lavatory/Galley Ventilation Fans

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

One may be inoperative deactivated provided:

a. The opposite ECSMC operates normally.

MAINTENANCE (M)

Deactivate the inoperative lavatory/galley ventilation fan (AMM 21-00-00/901).

1. For the left lavatory/galley ventilation fan inoperative:

   Note: The right ECSMC must operate normally.

   A. Open and collar the P110 panel L LAV/GLY FAN CTRL circuit breaker.

   B. For P110 panel L LAV/GLY FAN circuit breaker installed:

      1) Open and collar the circuit breaker.

   C. For P110 panel L LAV/GLY FAN circuit breaker not installed:

      1) Gain access to the left lavatory/galley ventilation fan by removing the left endwall in the bulk cargo compartment.

      2) Disconnect, cap and stow the electrical connector (DB21262) from the left lavatory/galley ventilation fan.

      3) Re-install the endwall.

2. For the right lavatory/galley ventilation fan inoperative:

   Note: The left ECSMC must operate normally.

   A. Open and collar the P210 panel R LAV/GLY FAN CTRL circuit breaker.

   B. For P210 panel R LAV/GLY FAN circuit breaker installed:

      1) Open and collar the circuit breaker.

   C. For P210 panel R LAV/GLY FAN circuit breaker not installed:

      1) Gain access to the right lavatory/galley ventilation fan by removing the left endwall in the bulk cargo compartment.

      2) Disconnect, cap and stow the electrical connector (DB21261) from the right lavatory/galley ventilation fan.

      3) Re-install the endwall.

21-26-02 Chiller Boost Fan (Passenger)

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

May be inoperative deactivated.

MAINTENANCE (M)

Deactivate the inoperative Chiller Boost Fan (AMM 21-00-00/901).

1. Open and collar the P210 panel CHLR BOOST FAN CTRL circuit breaker.
2. Open and collar the P210 panel CHLR BOOST FAN circuit breaker.

21-26-03 Bulk Cargo Ventilation Fan

21-26-03-01 With Chiller Boost Fan Installed

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

May be inoperative provided:

a. Bulk cargo ventilation fan is deactivated.

b. Chiller boost fan is deactivated.

MAINTENANCE (M)

Deactivate the Bulk Cargo Ventilation Fan and the Chiller Boost Fan (AMM 21-00-00/901).

1. Deactivate the Bulk Cargo Ventilation Fan.
   A. Open and collar the P210 panel BULK CGO VENT FAN CTRL circuit breaker.
   B. Open and collar the P210 panel BULK CGO VENT FAN circuit breaker.
2. Deactivate the Chiller Boost Fan.
   A. Open and collar the P210 panel CHLR BOOST FAN CTRL circuit breaker.
   B. Open and collar the P210 panel CHLR BOOST FAN circuit breaker.

OPERATIONS NOTE

1. Bulk cargo ventilation is not available. Live animals should not be carried in the bulk cargo compartment.

21-26-03 Bulk Cargo Ventilation Fan

21-26-03-02 Without Chiller Boost Fan Installed

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

May be inoperative provided:

a. Bulk cargo ventilation fan is deactivated.

MAINTENANCE (M)

Deactivate the Bulk Cargo Ventilation Fan (AMM 21-00-00/901).

1. Open and collar the P210 panel BULK CGO VENT FAN CTRL circuit breaker.
2. Open and collar the P210 panel BULK CGO VENT FAN circuit breaker.

OPERATIONS NOTE

1. Bulk cargo ventilation is not available. Live animals should not be carried in the bulk cargo compartment.

21-27-01 Equipment Cooling Air Filter

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

May be operated with filter removed.

MAINTENANCE (M)

Remove the equipment cooling air filter (AMM 21-00-00/901).

1. Gain access to the equipment cooling air filter by removing the left sidewall liner between STA 571 and STA 592 in lower forward cargo compartment.
2. Remove the equipment cooling air filter (AMM 21-27-02/401).
3. Re-install the left sidewall liner.

21-27-02 Equipment Cooling Supply Fans

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

One may be inoperative deactivated provided:

a. Opposite ECSMC operates normally.
b. Both override valve motors operate normally.
c. Both equipment cooling controllers operate normally.
d. Flight is conducted pressurized.

MAINTENANCE (M)

Notes: 1. At least one pack and two engine bleed systems must operate normally, or both packs and at least one engine bleed system must operate normally.

2. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

3. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

4. Dispatch is not allowed using the unpressurized dispatch option for MEL items: 21-31-01, 21-31-02, 21-31-03, 21-31-05, 21-31-06, 21-31-07, 21-32-01, 21-32-02, 21-51-01 and 21-61-01.

Deactivate the inoperative equipment cooling supply fan (AMM 21-00-00/901).

1. For the left equipment cooling supply fan inoperative:
   A. Open and collar the P110 panel EQPT CLG SPLY FAN 1 CTRL circuit breaker.
   B. Gain access to the left equipment cooling supply fan located in the lower forward cargo compartment behind the left sidewall panel near the forward ball panel.
   C. Disconnect, cap and stow the electrical connector (DB21581) from the left equipment cooling supply fan.
   D. Re-install the left sidewall panel.
2. For the right equipment cooling supply fan inoperative:
   A. Open and collar the P210 panel EQPT CLG SPLY FAN 2 CTRL circuit breaker.

B. Gain access to the right equipment cooling supply fan located in the lower forward cargo compartment behind the left sidewall panel near the forward ball panel.

C. Disconnect, cap and stow the electrical connector (DB21582) from the right equipment cooling supply fan.

D. Re-install the left sidewall panel.

21-27-03 Equipment Cooling Override Valve Motors

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

One may be inoperative deactivated provided:

a. Both equipment cooling supply fans operate normally.
b. Both equipment cooling controllers operate normally.

MAINTENANCE (M)

Deactivate the inoperative override valve motor (AMM 21-00-00/901).

1. For left override valve motor inoperative:
   A. Open and collar the P310 panel EQPT CLG SMOKE OVRD VLV MOT 1 circuit breaker.
2. For right override valve motor inoperative:
   A. Open and collar the P310 EQPT CLG SMOKE OVRD VLV MOT 2 circuit breaker.

21-27-04 Equipment Cooling Low Flow Sensors

21-27-04-01 Passenger

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

One may be inoperative deactivated.

MAINTENANCE (M)

Deactivate the inoperative equipment cooling low flow sensor (AMM 21-00-00/901).

1. For main equipment bay low flow sensor inoperative:
   A. Open and collar the P310 panel EQPT BAY LOW FLOW DET circuit breaker.
2. For flight deck low flow sensor inoperative:
   A. Open and collar the P210 panel F/D LOW FLOW DET circuit breaker.

21-27-05 Equipment Cooling Vent Fan

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

May be inoperative provided:

a. Fan is deactivated.

b. For ground operations with OAT 30 degrees C or higher:

1) Both packs are selected on, OR

2) Airplane is supplied with conditioned air.

MAINTENANCE (M)

Deactivate the equipment cooling vent fan (AMM 21-00-00/901).

1. Open and collar the P110 panel EQPT CLG VENT FAN CTRL circuit breaker.
2. Disconnect, cap and stow the electrical connector (DB21583) from the equipment cooling vent fan.
3. For ground operations with OAT at or above 30 degrees C, select both packs on or supply conditioned air to the airplane.

OPERATIONS NOTE

1. Forward cargo heat is not available. Temperature sensitive cargo should not be carried in the forward cargo compartment. Use MEL Item 21-27-07 (O) Note for predicting forward cargo compartment temperatures.

21-27-06 Equipment Cooling Vent Valve

21-27-06-01 Passenger

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

May be inoperative provided:

a. Valve is deactivated closed.

b. Equipment cooling vent fan is deactivated.

c. For ground operations with OAT 30 degrees C or higher:

1) Both packs are selected on, OR

2) Airplane is supplied with conditioned air.

MAINTENANCE (M)

Deactivate the equipment cooling vent valve closed and deactivate the equipment cooling vent fan (AMM 21-00-00/901).

1. Deactivate the equipment cooling vent valve closed.
   A. Open and collar the P110 panel EQPT CLG VENT VLV CTRL circuit breaker.
   B. Open and collar the P110 panel EQPT CLG VENT VLV circuit breaker.
   C. Gain access to the equipment cooling vent valve (V21584) located in the area below the forward cargo compartment floor on the left side by removing the floor panels and moisture shroud (AMM 25-52-10/401).
   D. Manually position the equipment cooling vent valve closed.
   E. Re-install the moisture shroud and floor panels.
2. Deactivate the equipment cooling vent fan.
   A. Open and collar the P110 panel EQPT CLG VENT FAN CTRL circuit breaker.
   B. Disconnect, cap and stow the electrical connector (DB21583) from the equipment cooling vent fan.
3. For ground operations with OAT 30 degrees C or higher, both packs are selected on or airplane is supplied with conditioned air.

OPERATIONS NOTE

1. Forward cargo heat is not available. Temperature sensitive cargo should not be carried in the forward cargo compartment. Use MEL Item 21-27-07 (O) Note for predicting forward cargo compartment temperatures.

21-27-07 Forward Cargo Heat Valve

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

May be inoperative:

a. The valve is deactivated closed.

MAINTENANCE (M)

Deactivate the forward cargo heat valve closed (AMM 21-00-00/901).

1. Open and collar the P110 panel EQPT CLG CGO HT VLV CTRL circuit breaker.
2. Open and collar the P110 panel EQPT CLG CGO HT VLV circuit breaker.
3. Gain access to the forward cargo heat valve located in the area below the forward cargo compartment floor on the left side by removing the floor panels the moisture shroud (AMM 25-52-10/401).
4. Manually position the forward cargo heat valve closed.
5. Re-install the moisture shroud and cargo floor panels.

OPERATIONS NOTE

1. Forward cargo heat is not available. Temperature sensitive cargo should not be carried in the forward cargo compartment.
2. The following tables may be used for predicting cargo compartment temperature. Temperature variations may occur.

Airport OAT Degrees C	Forward Cargo Compartment Temperature Degrees C
–40	–1
16	24
39	47

Note: Ground operation - Steady state temperatures with air conditioning packs on.

TAT Degrees C	Forward Cargo Compartment Temperature Degrees C
–44	2
–28	9

TAT Degrees C	Forward Cargo Compartment Temperature Degrees C
–3	20

Note: In-flight - Steady state temperatures after approximately 2.5 hours cruise at FL350.

21-27-08 Equipment Cooling Controllers

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

Left controller may be inoperative provided:

a. Right equipment cooling supply fan operates normally.
b. Right ECSMC operates normally.
c. Both override valve motors operate normally.
d. Flight deck low flow detector operates normally.

MAINTENANCE NOTE

1. The left and right equipment cooling controllers are interchangeable (AMM 21-27-01/401).

21-27-09 SATCOM Backup Cooling Fans (Passenger)

21-27-09A Both Lavatory/Galley Vent Fans Operational

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

May be inoperative deactivated provided:

a. Both lavatory/galley ventilation fans operate normally.

MAINTENANCE (M)

Deactivate the inoperative SATCOM backup cooling fan (AMM 21-00-00/901).

1. For the left backup cooling fan inoperative:
   A. Open and collar the P110 panel L SATCOM BACKUP CLG FAN CTRL circuit breaker.
   B. Open and collar the P110 panel L SATCOM BACKUP CLG FAN circuit breaker.
2. For right backup cooling fan inoperative:
   A. Open and collar the P210 panel R SATCOM BACKUP CLG FAN CTRL circuit breaker.
   B. Open and collar the P210 panel R SATCOM BACKUP CLG FAN circuit breaker.

21-27-09 SATCOM Backup Cooling Fans (Passenger)

21-27-09B Lavatory/Galley Fan(s) Inoperative

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative deactivated provided:

a. SATCOM remains off.

b. Route or procedures do not require use of SATCOM.

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

MAINTENANCE (M)

Deactivate the inoperative SATCOM backup cooling fan and SATCOM system (AMM 21-00-00/901).

1. For the left backup cooling fan inoperative:
   A. Open and collar the P110 panel L SATCOM BACKUP CLG FAN CTRL circuit breaker.
   B. Open and collar the P110 panel L SATCOM BACKUP CLG FAN circuit breaker.
   C. Open and collar the P110 panel SATL HIGH L circuit breaker.
   D. Open and collar the P110 panel SATL SDU L circuit breaker.
   E. For a low gain antenna system installed:
      1) Open and collar P110 panel SATL LOW circuit breaker.
2. For right backup cooling fan inoperative:
   A. Open and collar the P210 panel R SATCOM BACKUP CLG FAN CTRL circuit breaker.
   B. Open and collar the P210 panel R SATCOM BACKUP CLG FAN circuit breaker.
   C. Open and collar the P210 panel SATL HIGH R circuit breaker.
   D. Open and collar the P210 panel SATL SDU R circuit breaker.

OPERATIONS (O)

1. Flight must remain within 180 minutes of landing at a suitable airport.
2. Ensure route or procedures do not require use of SATCOM.

21-27-09 SATCOM Backup Cooling Fans (Passenger)

21-27-09C Procedures Do Not Require Use of SATCOM

Interval	Installed	Required	Procedure
D	1	0	**(M) (P) (MV)**

May be inoperative deactivated provided:

a. Procedures do not require the use of SATCOM.

MAINTENANCE (M)

Deactivate the inoperative SATCOM backup cooling fan and SATCOM system (AMM 21-00-00/901).

1. For the left backup cooling fan inoperative:
   A. Open and collar the P110 panel L SATCOM BACKUP CLG FAN CTRL circuit breaker.
   B. Open and collar the P110 panel L SATCOM BACKUP CLG FAN circuit breaker.

C. Open and collar the P110 panel SATL HIGH L circuit breaker.

D. Open and collar the P110 panel SATL SDU L circuit breaker.

E. For a low gain antenna system installed:

1) Open and collar P110 panel SATL LOW circuit breaker.

2. For right backup cooling fan inoperative:

A. Open and collar the P210 panel R SATCOM BACKUP CLG FAN CTRL circuit breaker.

B. Open and collar the P210 panel R SATCOM BACKUP CLG FAN circuit breaker.

C. Open and collar the P210 panel SATL HIGH R circuit breaker.

D. Open and collar the P210 panel SATL SDU R circuit breaker.

21-27-10 In-Flight Entertainment System (IFES) Equipment Cooling Fan

Interval	Installed	Required	Procedure
D	1	0	**(M) (P) (MV)**

May be inoperative provided:

a. IFES is deactivated.

Note: The following information is applicable to the Boeing system. One cooling fan is installed.

MAINTENANCE (M)

Deactivate the In-Flight Entertainment System (IFES) and cooling fan (AMM 21-00-00/901).

1. Open and collar P110 panel IFE CLG FAN circuit breaker.
2. Open and collar P110 panel IFE CLG FAN CTRL circuit breaker (If installed).
3. Deactivate the equipment cooled by the IFES cooling fan.

   Note: The following circuit breakers may or may not be installed.

   A. Open and collar P210 panel VIDEO PGMS & CTRL circuit breaker.
   B. Open and collar P210 panel VIDEO PGMS & CTRL B circuit breaker.
   C. Open and collar P210 panel CABIN PRINTER circuit breaker.
   D. Open and collar P110 panel VOD circuit breaker.

21-27-11 In-Flight Entertainment System (IFES) Equipment Cooling Smoke Detector

21-27-11B All Inoperative

Interval	Installed	Required	Procedure
D	1	0	**(M) (P) (MV)**

May be inoperative provided:

a. IFES is deactivated.

MAINTENANCE (M)

Deactivate the In-Flight Entertainment System (IFES), cooling fan and smoke detection (AMM 21-00-00/901).

1. Open and collar P110 panel IFE CLG SMK DET circuit breaker.
2. Open and collar P110 panel IFE COOLING FAN circuit breaker.
3. Open and collar P110 panel IFE CLG FAN CTRL circuit breaker (If installed).
4. Deactivate the equipment cooled by the IFES cooling fan.

   Note: Some of the following circuit breakers may or may not be installed.

   A. Open and collar P210 panel VIDEO PGMS & CTRL circuit breaker.
   B. Open and collar P210 panel VIDEO PGMS & CTRL B circuit breaker.
   C. Open and collar P210 panel CABIN PRINTER circuit breaker.
   D. Open and collar P110 panel VOD circuit breaker.

21-27-12 Equipment Cooling Duct Pressure Sensors

Interval	Installed	Required	Procedure
C	4	0	**(P)**

May be inoperative provided:

a. Both equipment cooling low flow sensors operate normally.

MAINTENANCE NOTE

For inoperative equipment cooling duct pressure sensor causing ground call horn to activate on ground, deactivate the inoperative sensor (AMM 21-00-00/901).

1. For the E4 or the F/D pressure sensor, open P110 panel E4/FLTDK PRESS XDCR circuit breaker.
2. For the E5 or the VSCF pressure sensor, open P210 panel E5/VSCF PRESS XDCR circuit breaker.
3. Gain access to the inoperative pressure sensor(s) ((AMM 21-27-08/401)).
4. Disconnect, cap and stow the electrical connector from the associated duct pressure sensor(s).
5. Cap the electrical receptacle on the pressure sensor(s)
6. Close the associated circuit breaker(s).

21-27-13 Equipment Cooling Divert Valve

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

May be inoperative provided:

a. Valve is deactivated closed.

b. Equipment cooling vent fan is deactivated.

c. For ground operations with OAT 30 degrees C or higher:

1) Both packs are selected on, OR

2) Airplane is supplied with conditioned air.

MAINTENANCE (M)

Deactivate the equipment cooling divert valve closed and deactivate the equipment cooling vent fan (AMM 21-00-00/901).

1. Deactivate the equipment cooling divert valve closed.
   A. Open and collar P210 panel EQT CLG DIVERT VLV CTRL circuit breaker.
   B. Open and collar P210 panel EQPT CLG DIVERT VLV circuit breaker.
   C. Gain access to be equipment cooling divert valve.
   D. Manually position the equipment cooling divert valve closed.
   E. Re-install the moisture shroud and the floor panels.
2. Deactivate the equipment cooling vent fan.
   A. Open and collar P110 panel EQPT CLG VENT FAN CTRL circuit breaker.
   B. Disconnect, cap and stow the electrical connector (DB21583) from the equipment cooling vent fan.
3. For ground operations with OAT at or above 30 degrees C, select both packs on or supply conditioned air to the airplane.

OPERATIONS NOTE

1. Forward cargo air conditioning will operate normally.

21-27-14 Equipment Cooling Inboard Valve

21-27-14-01 Passenger

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

May be inoperative provided:

a. Valve is deactivated closed.

b. Equipment cooling vent fan is deactivated.

c. For ground operations with OAT 30 degrees C or higher:

1) Both packs are selected on, OR

2) Airplane is supplied with conditioned air.

MAINTENANCE (M)

Deactivate the equipment cooling divert valve closed and deactivate the equipment cooling vent fan (AMM 21-00-00/901).

1. Deactivate the equipment cooling divert valve closed.
   A. Open and collar P210 panel circuit breaker EQT CLG INBD VLV.
   B. Gain access to be equipment cooling inboard valve.
   C. Manually position the equipment cooling inboard valve closed.
   D. Re-install the moisture shroud and the floor panels.
2. Deactivate the equipment cooling vent fan.
   A. Open and collar P110 panel EQPT CLG VENT FAN CTRL circuit breaker.
   B. Disconnect, cap and stow the electrical connector (DB21583) from the equipment cooling vent fan.
3. For ground operations with OAT at or above 30 degrees C, select both packs on or supply conditioned air to the airplane.

OPERATIONS NOTE

1. Forward cargo air conditioning will operate normally.

21-27-17 EQUIP COOLING Switch Lights

21-27-17-01 OVRD Light

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

21-27-17 EQUIP COOLING Switch Lights

21-27-17-02 AUTO Light

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

21-29-04 Overhead Flight Crew/Attendant Rest Supply Shutoff Valves

TJR to TJW, TKK to TKR, TKU to TKZ

21-29-04-01 Overhead Flight Crew Rest (OFCR)

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

May be inoperative provided:

a. OFCR supply shutoff valve is deactivated closed.

b. OFCR is considered inoperative.

DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Deactivate the OFCR shutoff valve and deactivate the OFCR closed (AMM 21-00-00/901).

1. Open the P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.
2. Gain access to the OFCR shutoff valve (AMM 21-29-30/401).
3. Disconnect, cap and stow the shutoff valve electrical connector.
4. Manually position the shutoff valve closed.
5. Close the P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.

DELETION

21-29-04 Overhead Flight Crew/Attendant Rest Supply Shutoff Valves

TJR to TJW, TKK to TKR, TKU to TKZ

21-29-04-02 Overhead Flight Attendant Rest (OFAR)

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

May be inoperative provided:

a. OFAR supply shutoff valve is deactivated closed.

b. OFAR is considered inoperative.

DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Deactivate the OFAR shutoff valve and deactivate the OFAR closed (AMM 21-00-00/901).

1. Open the P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker.
2. Gain access to the OFAR shutoff valve (AMM 21-29-20/401).
3. Disconnect, cap and stow the shutoff valve electrical connector.
4. Manually position the shutoff valve closed.
5. Close the P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker.

DELETION

21-29-05 Overhead Flight Crew/Attendant Rest Exhaust Valves

TJR to TJW, TKK to TKR, TKU to TKZ

21-29-05-01 Overhead Flight Crew Rest (OFCR)

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

May be inoperative provided:

a. OFCR exhaust valve is deactivated closed.

b. OFCR is considered operative. DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Deactivate the OFCR exhaust valve and deactivate the OFCR closed (AMM 21-00-00/901).

1. Open the P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.
2. Gain access to the OFCR exhaust valve (AMM 21-29-31/401).
3. Disconnect, cap and stow the exhaust valve electrical connector.
4. Manually position the exhaust valve closed.
5. Close the P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.

DELETION

21-29-05 Overhead Flight Crew/Attendant Rest Exhaust Valves

TJR to TJW, TKK to TKR, TKU to TKZ

21-29-05-02 Overhead Flight Attendant Rest (OFAR)

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

May be inoperative provided:

a. OFAR exhaust valve is deactivated closed.

b. OFAR is considered inoperative. DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Deactivate the OFAR exhaust valve and deactivate the OFAR closed (AMM 21-00-00/901).

1. Open the P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker.

2. Gain access to the OFAR exhaust valve (AMM 21-29-21/401).
3. Disconnect, cap and stow the exhaust valve electrical connector.
4. Manually position the exhaust valve closed.
5. Close the P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker.

DELETION

TJR to TJW, TKK to TKR, TKU to TKZ

21-29-06 Overhead Flight Crew Rest Supply Shutoff Valves (Taxi, Takeoff & Landing Installation)

21-29-06A Both Inoperative

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

May be inoperative provided:

a. Both valves are deactivated closed.

b. Associated crew rest is considered inoperative.

DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Note: The Taxi, Takeoff & Landing (TT&L) configuration incorporates a Primary and a Secondary supply shutoff valve.

Deactivate both OFCR shutoff valves and OFCR closed (AMM 21-00-00/901).

1. Open P210 panel UPR FWD REST SOV/EXH VLV circuit breaker.
2. Open P210 panel UPR FWD REST SEC SOV circuit breaker.
3. Gain access to the OFCR shutoff valves.
4. Disconnect, cap and stow the shutoff valve electrical connectors.
5. Manually position the shutoff valves closed.
6. Close the associated circuit breakers.

DELETION

TJR to TJW, TKK to TKR, TKU to TKZ

21-29-06 Overhead Flight Crew Rest Supply Shutoff Valves (Taxi, Takeoff & Landing Installation)

21-29-06B One Inoperative

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

One may be inoperative provided:

a. Inoperative valve is deactivated closed.

b. Remaining supply shutoff valve operates normally.

c. Left air conditioning pack operates normally.

MAINTENANCE (M)

Note: For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

Deactivate the OFCR secondary shutoff valve closed (AMM 21-00-00/901).

1. For OFCR primary shutoff valve inoperative:
   A. Open P210 panel UPR FWD REST SOV/EXH VLV circuit breaker.
   B. Gain access to the primary shutoff valve.
   C. Disconnect, cap and stow the primary shutoff valve electrical connector.
   D. Manually position the primary shutoff valve closed.
   E. Close P210 panel UPR FWD REST SOV/EXH VLV circuit breaker.
2. For OFCR secondary shutoff valve inoperative:
   A. Open P210 panel UPR FWD REST SEC SOV circuit breaker.
   B. Gain access to the secondary shutoff valve.
   C. Disconnect, cap and stow the secondary shutoff valve electrical connector.
   D. Manually position the secondary shutoff valve closed.
   E. Close P210 panel UPR FWD REST SEC SOV circuit breaker.

OPERATIONS NOTE

1. With the primary shutoff valve disabled, the OFCR may become warm. To mitigate a warm OFCR, select a cooler flight deck area temperature. To mitigate the cooler flight deck temperature, the shoulder and foot heaters in the flight deck may be selected on.

TJR to TJW, TKK to TKR, TKU to TKZ

21-29-07 Overhead Flight Crew Rest (OFCR) Pressure Sensor (Taxi, Takeoff & Landing Installation)

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

21-31-01 Auto Cabin Pressure Controls (L and R)

21-31-01-01 Passenger With P/N 3676-GRS-014-00 or Later ASCPC Software Installed

21-31-01-01A Manual Control Operates on Both Outflow Valves

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

One may be inoperative provided:

a. Manual cabin pressure control is verified to operate normally on both outflow valves before each departure.

b. Left or right AFDC operates normally.

MAINTENANCE (M)

Verify manual cabin pressure control operates normally on both outflow valves (AMM 21-00-00/901).

1. Position Pressurization Panel (P5) OUTFLOW VALVE switches to MAN.

   Note: Outflow valve position indications on EICAS may blank when MAN is selected.

2. Hold each Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch CLOSE until the EICAS outflow valve position indicator is CL, or if EICAS indication is not available hold the switch CLOSE for 30 seconds.
3. Confirm the outflow valve doors are closed.
4. Hold each Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch OPEN until the EICAS outflow valve position indicator is OP, or if EICAS indication is not available hold the switch OPEN for 30 seconds.
5. Confirm the outflow valve doors are full open.
6. Position Pressurization Panel (P5) OUTFLOW VALVE switches to AUTO.

OPERATIONS NOTE

1. Leave OUTFLOW VALVE switches in AUTO unless required to accomplish a Non-Normal Checklist.

21-31-01 Auto Cabin Pressure Controls (L and R)

21-31-01-01 Passenger With P/N 3676-GRS-014-00 or Later ASCPC Software Installed

21-31-01-01B One Outflow Valve Deactivated/Manual Control Operates on Other Valve

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

One may be inoperative provided:

a. One outflow valve is deactivated 7% open.

b. Manual cabin pressure control is verified to operate normally on the remaining outflow valve.

c. Left or right AFDC operates normally.

d. One pack operates normally, and the other pack operates normally or in standby cooling mode.

e. Both CTCs operate normally.

f. Both engine bleed systems operate normally.

TJR to TJW, TKK to TKR, TKU to TKZ

g. (OFCR or OFAR installed)

1) For aft outflow valve deactivated 7% open, the OFCR or OFAR is considered inoperative.

DELETION

TJR to TJW, TKK to TKR, TKU to TKZ

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Use MEL Item 21-31-03-02 (M) procedure.

OPERATIONS (O)

1. Use MEL Item 21-31-03-02 (O) procedure.
2. Leave OUTFLOW VALVE switches in AUTO unless required to accomplish a Non-Normal Checklist.

21-31-01 Auto Cabin Pressure Controls (L and R)

21-31-01-03 All

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.

b. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

c. For extended overwater flight, manual cabin pressure control is verified to operate normally on both outflow valves.

d. (OFCR or OFAR installed) TJR to TJW, TKK to TKR, TKU to TKZ

1) The rest area(s) is considered inoperative.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast. DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04. TJR to TJW, TKK to TKR, TKU to TKZ

MAINTENANCE (M)

For extended overwater flight, verify manual cabin pressure control operates normally on both outflow valves (AMM 21-00-00/901).

1. Position Pressurization Panel (P5) OUTFLOW VALVE switches to MAN.

   Note: Outflow valve position indications on EICAS may blank when MAN is selected.

2. Hold each Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch CLOSE until the EICAS outflow valve position indicator is CL, or if EICAS indication is not available hold the switch CLOSE for 30 seconds.
3. Confirm the outflow valve doors are closed.
4. Hold each Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch OPEN until the EICAS outflow valve position indicator is OP, or if EICAS indication is not available hold the switch OPEN for 30 seconds.
5. Confirm the outflow valve doors are full open.
6. Leave Pressurization Panel (P5) OUTFLOW VALVE switches in MAN.

DELETION

OPERATIONS (O)

1. Cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.
2. Position both outflow valves full open.
   A. Position both OUTFLOW VALVE switches to MAN.

      Notes: 1. The CABIN ALTITUDE AUTO advisory message will be displayed.
      2. Outflow valve position indications on EICAS may blank when MAN is selected.

   B. Hold each OUTFLOW VALVE MANUAL switch OPEN for 30 seconds.
3. Maintain the outflow valves full open unless required to accomplish a Non-Normal Checklist.
4. For flight with passengers:
   A. Limit enroute altitude to 10,000 feet.
   B. To avoid passenger discomfort, limit climb (after takeoff obstacle clearance has been assured) and descent rates to 500 fpm.

DELETION

21-31-02 Manual Cabin Pressure Outflow Valve Controls (FWD and AFT)

21-31-02-01 Passenger

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

One may be inoperative provided:

a. Associated outflow valve is deactivated 7% open.

b. Manual cabin pressure control is verified to operate normally on the remaining outflow valve.

c. One pack operates normally, and the other pack operates normally or in standby cooling mode.

d. Both CTCs operate normally.

e. Both engine bleed systems operate normally.

f. (OFCR or OFAR installed)

TJR to TJW, TKK to TKR, TKU to TKZ

1) For aft outflow valve deactivated 7% open, the OFCR or OFAR is considered inoperative.

DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. A pack will operate in standby cooling mode with an inoperative ACM, or an inoperative ECV, or an inoperative Condenser Inlet Temperature Control System.

3. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL item 36-00-01 for a listing of those items.

Deactivate the associated valve 7% open and verify manual cabin pressure control operates normally on the remaining outflow valve using applicable MEL Item 21-31-03-01 or 21-31-03-02 (M) procedure (AMM 21-00-00/901).

OPERATIONS (O)

1. Use applicable MEL Item 21-31-03-01 (O) procedure.

21-31-02 Manual Cabin Pressure Outflow Valve Controls (FWD and AFT)

21-31-02-03 All

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.

b. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

c. Extended overwater flight is prohibited.

TJR to TJW, TKK to TKR, TKU to TKZ

d. (OFCR or OFAR installed)

1) The rest area(s) is considered inoperative. DELETION

TJR to TJW, TKK to TKR, TKU to TKZ

Note: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

3. The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Deactivate both outflow valves full open (AMM 21-31-00/201).

1. Determine position of outflow valves.
2. Open and collar the following circuit breakers:
   A. P210 panel R FWD OFL VLV circuit breaker.
   B. P310 panel L FWD OFL VLV circuit breaker.
   C. P210 panel R AFT OFL VLV circuit breaker.
   D. P310 panel L AFT OFL VLV circuit breaker.
3. For outflow valve(s) not in the full open position:
   A. Gain access to the associated outflow valve assembly.
   B. Remove the primary and secondary pushrods.
   C. Position the valve door(s) to the full open position.
   D. Install the hold-open rod, part number J21006.
4. Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch(es) to AUTO.

DELETION

OPERATIONS (O)

Note: The CABIN ALTITUDE AUTO caution message will be displayed.

1. The flight is conducted unpressurized.
2. Extended overwater flight is prohibited.
3. Cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.
4. For flight with passengers:
   A. Limit enroute altitude to 10,000 feet.
   B. To avoid passenger discomfort, limit climb (after takeoff obstacle clearance has been assured) and descent rates to 500 fpm.

DELETION

21-31-03 Outflow Valves (FWD and AFT)

21-31-03-02 Passenger

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

One may be inoperative provided:

a. Valve is deactivated 7% open.

b. Manual cabin pressure control is verified to operate normally on the remaining outflow valve.

c. Left or right auto cabin pressure control operates normally.

d. One pack operates normally, and the other pack operates normally or in standby cooling mode.

e. Both CTCs operate normally.

f. Both engine bleed systems operate normally.

TJR to TJW, TKK to TKR, TKU to TKZ

g. (OFCR or OFAR installed)

1) For the aft outflow valve deactivated 7% open, the OFCR or OFAR is considered inoperative.

DELETION

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. A pack will operate in standby cooling mode with an inoperative ACM, or an inoperative ECV, or an inoperative Condenser Inlet Temperature Control System

3. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Deactivate inoperative outflow valve 7% open and verify manual cabin pressure control operates normally on the remaining outflow valve (AMM 21-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Deactivate inoperative outflow valve 7% open.

Note: For ground operations with OAT at or above 24 degrees C and forward outflow valve deactivated 7% open, supply conditioned air to the airplane.

A. For manual control operative and valve position displayed on the Air Supply Maintenance page:
   1) Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch to MAN.
   2) Using the associated Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch, position the inoperative outflow valve to indicate 0.07 on the Air Supply Maintenance page.
   3) For the forward outflow valve inoperative:
      a. Open and collar the P210 panel R FWD OFL VLV circuit breaker.
      b. Open and collar the P310 panel L FWD OFL VLV circuit breaker.
   4) For the aft outflow valve inoperative:
      a. Open and collar the P210 panel R AFT OFL VLV circuit breaker.
      b. Open and collar the P310 panel L AFT OFL VLV circuit breaker.
   5) Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch to AUTO.
   6) Confirm the gap between the two outflow doors is 0.375 ± 0.031 inches.

B. For OFV (P/N 2214420-X) installed with manual control inoperative, or valve position on the Air Supply Maintenance page not available:
   1) For the forward outflow valve inoperative:
      a. Open and collar the P210 panel R FWD OFL VLV circuit breaker.
      b. Open and collar the P310 panel L FWD OFL VLV circuit breaker.
   2) For the aft outflow valve inoperative:
      a. Open and collar the P210 panel R AFT OFL VLV circuit breaker.
      b. Open and collar the P310 panel L AFT OFL VLV circuit breaker.
   3) Gain access to the associated outflow valve assembly.
   4) Disconnect the electrical connector from the back of the valve control unit.
   5) Remove one DC motor from the outflow valve assembly.
   6) Move the outflow valve doors until the gap between the two doors is 0.375 ± 0.031 inches.

7) Reinstall the DC motor.

8) Reconnect the electrical connector on the back of the valve control unit.

9) Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch to AUTO.

3. Verify manual cabin pressure control operates normally on the remaining outflow valve.

A. Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch to MAN.

Note: Outflow valve position indications on EICAS may be blank when MAN is selected.

B. Hold the associated Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch CLOSE until the EICAS outflow valve position indicator is CL, or if EICAS indication is not available hold the switch CLOSE for 30 seconds.

C. Confirm the associated outflow valve door is closed.

D. Hold the associated Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch OPEN until the EICAS outflow valve position indicator is OP, or if EICAS indication is not available hold the switch OPEN for 30 seconds.

E. Confirm the associated outflow valve door is full open.

F. Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch to AUTO.

TJR to TJW, TKK to TKR, TKU to TKZ

4. (OFCR or OFAR installed)

A. For aft outflow valve deactivated 7% open:

1) Deactivate the crew/attendant rest(s) closed.

a. Remove all baggage and personal items from the associated crew/attendant rest.

Note: Blankets, pillows and other items normally used in the crew rest may remain.

b. Close the associated crew/attendant rest entrance door.

OPERATIONS (O)

Notes: 1. Aft cabin temperature control may be degraded when dispatching with the aft outflow valve deactivated 7% open.

2. The associated OUTFLOW VALVE AFT or FWD advisory messages will be displayed.

3. The outflow valve position indication pointer will be missing for the deactivated outflow valve on the EICAS pressurization indications.

1. If the operative outflow valve fails during flight and cannot be controlled manually:
   A. It may be necessary to select packs OFF to depressurize the airplane for landing.
      1) During descent when below 15,000 ft. MSL:
         a. Select one pack OFF.
      2) During descent when below 10,000 ft. MSL:
         a. Select remaining pack OFF.
2. After main entry doors are closed at the departure gate:
   A. Select right pack OFF before reopening a door.
      1) After pushback from the gate:
         a. Select right pack AUTO.
3. Prior to gate arrival, if both packs are operating:
   A. Select right pack OFF.
   B. After main entry doors are open at the gate:
      1) Select packs as desired.
4. (OFCR or OFAR installed) TJR to TJW, TKK to TKR, TKU to TKZ
   A. For aft outflow valve deactivated:
      1) The crew/attendant rest(s) is not available for inflight use.
      2) Remove personal items and do not enter except for inspections by crewmembers.

21-31-03 Outflow Valves (FWD and AFT)

21-31-03-04 All

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.
b. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.
c. Extended overwater flight is prohibited.
d. (OFCR or OFAR installed) TJR to TJW, TKK to TKR, TKU to TKZ
   1) The rest area(s) is considered inoperative.

DELETION

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

TJR to TJW, TKK to TKR, TKU to TKZ

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Note: For both outflow valve status messages displayed due to faults in a single channel in both valves, it may be possible to achieve operation of one outflow valve on both channels by exchanging components. Consult airplane CMC data, and appropriate fault isolation manual (FIM) and AMM.

Deactivate both outflow valves full open (AMM 21-31-00/201).

1. Determine position of the outflow valves.
2. For the outflow valve(s) in the full open position:
   A. Open and collar the P210 panel R FWD OFL VLV circuit breaker.
   B. Open and collar the P310 panel L FWD OFL VLV circuit breaker.
   C. Open and collar the P210 panel R AFT OFL VLV circuit breaker.
   D. Open and collar the P310 panel L AFT OFL VLV circuit breaker.
   E. Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch(es) to AUTO.
3. For the outflow valve(s) not in the full open position and manual control is available:
   A. Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch(es) to MAN.
   B. Hold the associated Pressurization Panel (P5) OUTFLOW VALVE MANUAL switch(es) OPEN until the EICAS outflow valve position indicator is OP, or if EICAS indication is not available hold the switch OPEN for 30 seconds.
   C. For the EICAS outflow valve position indication(s) not available:
      1) Confirm the associated outflow door(s) is full open.
   D. Open and collar the P210 panel R FWD OFL VLV circuit breaker.
   E. Open and collar the P310 panel L FWD OFL VLV circuit breaker.
   F. Open and collar the P210 panel R AFT OFL VLV circuit breaker.
   G. Open and collar the P310 panel L AFT OFL VLV circuit breaker.
   H. Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch(es) to AUTO.

4. For the outflow valve(s) not in the full open position and manual control is not available:
   A. Open and collar the P210 panel R FWD OFL VLV circuit breaker.
   B. Open and collar the P310 panel L FWD OFL VLV circuit breaker.
   C. Open and collar the P210 panel R AFT OFL VLV circuit breaker.
   D. Open and collar the P310 panel L AFT OFL VLV circuit breaker.
   E. Gain access to the associated outflow valve assembly.
   F. Remove the primary and secondary pushrods.
   G. Position the valve door(s) in the full open position.
   H. Install the hold-open rod, part number J21006.
   I. Position the associated Pressurization Panel (P5) OUTFLOW VALVE switch(es) to AUTO.

DELETION

OPERATIONS (O)

Note: The CABIN ALTITUDE AUTO caution message will be displayed.

1. The flight is conducted unpressurized.
2. Extended overwater flight is prohibited.
3. Cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.
4. For flight with passengers:
   A. Limit enroute altitude to 10,000 feet.
   B. To avoid passenger discomfort, limit climb (after takeoff obstacle clearance has been assured) and descent rates to 500 fpm.

DELETION

21-31-03 Outflow Valves (FWD and AFT)

21-31-03-05 OUTFLOW VALVE Switch Lights

21-31-03-05-01 MAN Lights

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

21-31-03 Outflow Valves (FWD and AFT)

21-31-03-05 OUTFLOW VALVE Switch Lights

21-31-03-05-02 AUTO Lights

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

21-31-04 Remote Cabin Pressure Sensor

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

May be inoperative provided:

a. Both Auto Cabin Pressure Controls operate normally.

21-31-05 Cabin Rate Of Climb Indication

21-31-05A Both Auto Cabin Pressure Controls Operative

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

May be inoperative provided:

a. Both Auto Cabin Pressure Controls operate normally.

21-31-05 Cabin Rate Of Climb Indication

21-31-05B Unpressurized Flight

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.

b. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

c. For extended overwater flight, manual cabin pressure control is verified to operate normally on both outflow valves.

TJR to TJW, TKK to TKR, TKU to TKZ

d. (OFCR or OFAR installed)

1) The rest area(s) is considered inoperative.

DELETION

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

TJR to TJW, TKK to TKR, TKU to TKZ

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

1. Use MEL Item 21-31-01-04 (M) procedure.

OPERATIONS (O)

1. Use MEL Item 21-31-01-04 (O) procedure.

21-31-06 Cabin Differential Pressure Indication

21-31-06A Cabin Altitude Indication Operative

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

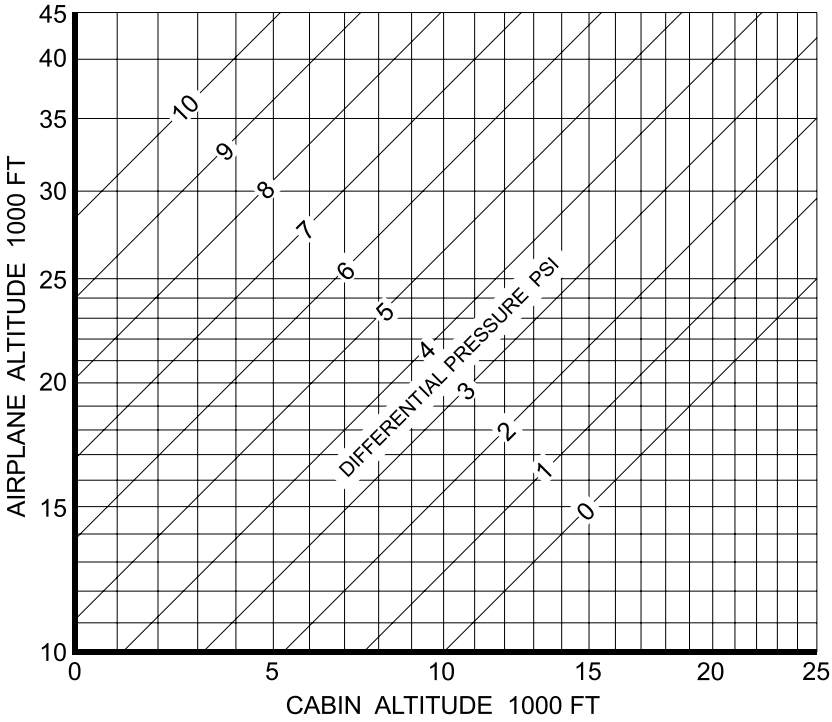
May be inoperative provided:

a. Cabin altitude indication operates normally.

b. A chart is provided to convert cabin altitude to cabin differential pressure.

OPERATIONS (O)

1. Cabin differential pressure may be derived from the following chart using indicated values of airplane altitude and cabin altitude.



21-31-06 Cabin Differential Pressure Indication

21-31-06B Unpressurized Flight

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.

b. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

c. For extended overwater flight, manual cabin pressure control is verified to operate normally on both outflow valves.

TJR to TJW, TKK to TKR, TKU to TKZ

d. (OFCR or OFAR installed)

1) The rest area(s) is considered inoperative.

DELETION

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

TJR to TJW, TKK to TKR, TKU to TKZ

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

1. Use MEL Item 21-31-01-03 (M) procedure.

OPERATIONS (O)

1. Use MEL Item 21-31-01-03 (O) procedure.

21-31-07 Cabin Altitude Indication

21-31-07A Cabin Differential Pressure Indication Operative

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

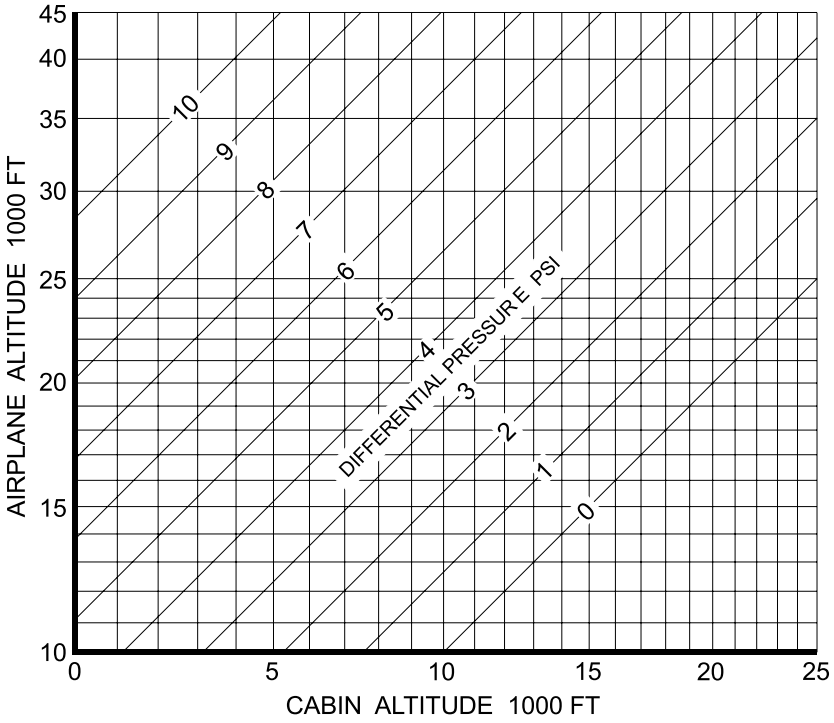
May be inoperative provided:

a. Cabin differential pressure indication operates normally.

b. A chart is provided to convert cabin differential pressure to cabin altitude.

OPERATIONS (O)

1. Cabin altitude may be derived from the following chart using indicated values of cabin differential pressure and airplane altitude.



21-31-07 Cabin Altitude Indication

21-31-07B Unpressurized Flight

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.

b. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

c. For extended overwater flight, manual cabin pressure control is verified to operate normally on both outflow valves.

TJR to TJW, TKK to TKR, TKU to TKZ

d. (OFCR or OFAR installed)

1) The rest area(s) is considered inoperative.

DELETION

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

TJR to TJW, TKK to TKR, TKU to TKZ

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

1. Use MEL Item 21-31-01-03 (M) procedure.

OPERATIONS (O)

1. Use MEL Item 21-31-01-03 (O) procedure.

21-31-08 Outflow Valve Position Indications

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

OPERATIONS NOTE

1. To manually position the outflow valve(s) full open or full closed, position the OUTFLOW VALVE Switch to MAN and press and hold the OUTFLOW VALVE MANUAL Switch OPEN or CLOSE for 30 seconds.

21-32-01 Positive Pressure Relief Valves

21-32-01A One Valve Inoperative

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

One may be inoperative deactivated closed.

MAINTENANCE (M)

Deactivate the associated positive pressure relief valve in the closed position (AMM 21-00-00/901).

1. Gain access to the valve by removing the applicable sidewall liner on the left side of the lower forward cargo compartment.
2. If flapper doors are open:
   A. From outside the airplane press the flapper doors closed.
3. Disconnect and cap the remote ambient sense hose and the primary metering section cap.
4. Disconnect and cap the integral ambient sense tube and the secondary metering section cap.
5. Re-install the sidewall liner.

21-32-01 Positive Pressure Relief Valves

21-32-01B Both Valves Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.
b. Extended overwater flight is prohibited.
c. Both outflow valves are deactivated open.
d. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

TJR to TJW, TKK to TKR, TKU to TKZ

e. (OFCR or OFAR installed)
   1) The crew/attendant rest area(s) is considered inoperative.

DELETION

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

Note: The airplane must also be dispatched using MEL Item 25-29-04.

TJR to TJW, TKK to TKR, TKU to TKZ

MAINTENANCE (M)

1. Use MEL item 21-31-03-04 (M) procedure.

OPERATIONS (O)

1. Use MEL item 21-31-03-04 (O) procedure.

21-32-02 Negative Pressure Relief Vents

Interval	Installed	Required	Procedure
C	4	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Flight is conducted unpressurized.

b. Extended overwater flight is prohibited.

c. Both outflow valves are deactivated open.

d. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

TJR to TJW, TKK to TKR, TKU to TKZ

e. (OFCR or OFAR installed)

1) The crew/attendant rest area(s) is deactivated closed.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

3. These provisions are not intended to prohibit crew/attendant rest inspections by crewmembers.

MAINTENANCE (M)

1. Use MEL item 21-31-03-04 (M) procedure.

OPERATIONS (O)

1. Use MEL item 21-31-03-04 (O) procedure.

21-41-04 Overhead Flight Crew/Attendant Rest Electric Heater Systems TJR to TJW, TKK to TKR, TKU to TKZ

21-41-04-01 Overhead Flight Crew Rest (OFCR) Heater Systems

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

May be inoperative provided:

a. Associated heater system is deactivated.

DELETION b. OFCR is considered inoperative.

Note: The airplane must also be dispatched using MEL Item 25-29-04. TJR to TJW, TKK to TKR, TKU to TKZ

MAINTENANCE (M)

Deactivate the associated OFCR electric heaters and deactivate the OFCR closed (AMM 21-00-00/901).

1. Open and collar P19 panel CB - HEATER 2 - OFCR BUNK 1 circuit breaker.
2. Open and collar P19 panel CB - HEATER 3 - OFCR BUNK 2 circuit breaker.
3. Open and collar P19 panel CB - HEATER 1 - OFCR COMM circuit breaker.
4. For second heater installed:
   A. Open and collar P19 panel CB - HEATER 2 COM - OFCR circuit breaker.

DELETION

21-41-04 Overhead Flight Crew/Attendant Rest Electric Heater Systems TJR to TJW, TKK to TKR, TKU to TKZ

21-41-04-01 Overhead Flight Crew Rest (OFCR) Heater Systems

21-41-04-01-01 Bunk Heater Systems

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

One may be inoperative provided:

a. Associated bunk heater system is deactivated.

b. One common area heater system operates normally.

MAINTENANCE (M)

Deactivate the inoperative OFCR bunk electric heater (AMM 21-00-00/901).

1. For the two bunk installation:
   A. For the bunk 1 electric heater:
      1) Open and collar P19 panel CB - HEATER 2 - OFCR BUNK 1 circuit breaker.
   B. For the bunk 2 electric heater:
      1) Open and collar P19 panel CB - HEATER 3 - OFCR BUNK 2 circuit breaker.

TJR to TJW, TKK to TKR, TKU to TKZ

21-41-04 Overhead Flight Crew/Attendant Rest Electric Heater Systems

21-41-04-01 Overhead Flight Crew Rest (OFCR) Heater Systems

21-41-04-01-02 Common Area Heater System(s)

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

May be inoperative provided:

a. Associated common area heater system(s) is deactivated.
b. Bunk heater system(s) operate normally.

MAINTENANCE (M)

Deactivate the OFCR common area heater (AMM 21-00-00/901).

1. Open and collar P19 panel CB - HEATER 1 - OFCR COMM circuit breaker.
2. For second heater installed:
   A. Open and collar P19 panel CB - HEATER 2 COM - OFCR circuit breaker.

21-41-04 **Overhead Flight Crew/Attendant Rest Electric Heater Systems** TJR to TJW, TKK to TKR, TKU to TKZ

21-41-04-02 **Overhead Flight Attendant Rest (OFAR) Heater Systems**

21-41-04-02A **One Inoperative**

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

One may be inoperative provided:

a. Associated heater system is deactivated.

MAINTENANCE (M)

Deactivate the inoperative OFAR heater (AMM 21-00-00/901).

1. For electric heater 1:
   A. Open and collar P20 panel CB - HEATER 1 - OFAR circuit breaker.
2. For electric heater 2:
   A. open and collar P20 panel CB - HEATER 2 - OFAR circuit breaker.

21-41-04 **Overhead Flight Crew/Attendant Rest Electric Heater Systems** TJR to TJW, TKK to TKR, TKU to TKZ

21-41-04-02 **Overhead Flight Attendant Rest (OFAR) Heater Systems**

21-41-04-02B **Both Inoperative**

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

May be inoperative provided:

a. Heating systems are deactivated.

DELETION b. OFAR is considered inoperative.

Note: The airplane must also be dispatched using MEL Item 25-29-04. TJR to TJW, TKK to TKR, TKU to TKZ

MAINTENANCE (M)

Deactivate the inoperative OFAR heaters (AMM 21-00-00/901).

1. Open and collar P20 panel CB - HEATER 1 - OFAR circuit breaker.

2. Open and collar P20 panel CB - HEATER 2 - OFAR circuit breaker.

DELETION

21-44-01 Aft Cargo Heat Valves

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

May be inoperative provided:

a. System is deactivated closed.

MAINTENANCE (M)

Deactivate the lower aft cargo heat system closed (AMM 21-00-00/901).

1. Position Maintenance Panel (P61) AFT CARGO TEMP selector OFF.
2. Open and collar the P110 panel AFT CGO HT TCV circuit breaker.
3. Open and collar the P110 panel AFT CGO HT SOV circuit breaker.
4. Gain access to the lower aft cargo heat valves (AMM 25-52-06/401).
5. Confirm the lower aft cargo compartment Temperature Control Valve (TCV) or the lower aft cargo compartment Shutoff Valve (SOV) remains in the closed position when the pneumatic duct is pressurized.
   A. Pressurize the airplane pneumatic system (AMM 36-00-00/201).
   B. Confirm at least one lower aft cargo heat valve remains closed when the APU duct is pressurized.
   C. Remove pressure from the pneumatic system.
6. If both valves remain open:
   A. One of the valves must be replaced (AMM 21-44-01/401).

      Notes: 1. If only one of the inoperative valves is replaced, do not accomplish the valve installation test required by the installation procedure.
      2. All four of the lower aft and bulk cargo TCVs and SOVs are interchangeable.
7. Re-install the sidewall liner.

OPERATIONS NOTE

1. Lower aft cargo compartment heat is not available. Temperature sensitive cargo should not be carried in the lower aft cargo compartment.
2. The following tables may be used for predicting lower aft cargo compartment temperature. Temperature variations may occur.

Airport OAT Degrees C	AFT Cargo Compartment Temperature Degrees C
−40	−3
16	24
39	46

Note: Ground operation - Steady state temperatures with air conditioning packs on.

TAT Degrees C	AFT Cargo Compartment Temperature Degrees C
−44	−2
−28	5
−3	17

Note: In-flight - Steady state temperatures after approximately 2.5 hours cruise at FL350.

21-44-02 Aft Cargo Compartment Temperature Sensor

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. System remains off.

OPERATIONS NOTE

1. Position Maintenance Panel (P61) AFT CARGO TEMP selector OFF.
2. Lower aft cargo compartment heat is not available. Temperature sensitive cargo should not be carried in the lower aft cargo compartment.
3. Use MEL item 21-44-01 (O) Note for predicting aft cargo compartment temperatures.
4. Lower aft cargo compartment temperature will not be available on the Air Synoptic.

21-44-03 Bulk Cargo Heat Valves

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

May be inoperative provided:

a. System is deactivated closed.

MAINTENANCE (M)

Deactivate the bulk cargo heat system closed (AMM 21-00-00/901).

1. Position Maintenance Panel (P61) BULK CARGO TEMP selector OFF.
2. Open and collar the P210 panel BULK CGO HT TCV circuit breaker.
3. Open and collar the P210 panel BULK CGO HT SOV circuit breaker.
4. Gain access to the aft cargo heat valves (AMM 25-52-06/401).
5. Confirm the aft cargo compartment Temperature Control Valve (TCV) or the aft cargo compartment Shutoff Valve (SOV) remains in the closed position when the pneumatic duct is pressurized.
   A. Pressurize the airplane pneumatic system (AMM 36-00-00/201).
   B. Confirm at least one bulk cargo heat valve remains closed when the APU duct is pressurized.
   C. Depressure the pneumatic system (AMM 36-00-00/201).
6. If both valves remain open:
   A. One of the valves must be replaced (AMM 21-44-01/401).

      Notes: 1. If only one of the inoperative valves is replaced, do not accomplish the valve installation test required by the installation procedure.

      2. All four of the aft and bulk cargo TCVs and SOVs are interchangeable.
7. Re-install the sidewall liner.

OPERATIONS NOTE

1. Bulk cargo compartment heat is not available. Temperature sensitive cargo should not be carried in the bulk cargo compartment.
2. The following tables may be used for predicting cargo compartment temperature. Temperature variations may occur.

Airport OAT Degrees C	Bulk Cargo Compartment Temperature Degrees C
−40	3
16	25
39	47

Note: Ground operation - Steady state temperatures with air conditioning packs on.

TAT Degrees C	Bulk Cargo Compartment Temperature Degrees C
−44	0
−28	7
−3	17

Note: In-flight - Steady state temperatures after approximately 2.5 hours cruise at FL350.

21-44-04 Bulk Cargo Compartment Temperature Sensor

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. System remains off.

OPERATIONS NOTE

1. Position Overhead Maintenance Panel (P61) BULK CARGO TEMP selector OFF.
2. Bulk cargo compartment heat is not available. Temperature sensitive cargo should not be carried in the bulk cargo compartment.
3. Use MEL Item 21-44-03 (O) Note for predicting bulk cargo compartment temperatures.
4. Bulk cargo compartment temperature will not be available on the Air Synoptic.

21-45-01 Flight Deck Foot Heaters

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

May be inoperative OFF.

MAINTENANCE (M)

Deactivate the inoperative foot heater (AMM 21-00-00/901).

1. Position the associated Sidewall Panel (P13-1/P14-1) foot heater selector OFF.
2. For a Captain's foot heater failed on:

   Note: Captain's shoulder heater will be deactivated. The airplane must also be dispatched using MEL item 21-45-02.

   A. Open and collar P110 panel CAPT FT & SHLDR HTR CTRL circuit breaker.

   B. Open and collar P110 panel CAPT FT & SHLDR HTR circuit breaker.
3. For a First Officer's foot heater failed on:

   Note: First Officer's shoulder heater will be deactivated. The airplane must also be dispatched using MEL item 21-45-02.

   A. Open and collar P210 panel F/O FT & SHLDR HTR CTRL circuit breaker.

   B. Open and collar P210 panel F/O FT & SHLDR HTR circuit breaker.

21-45-02 Flight Deck Shoulder Heaters

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

May be inoperative OFF.

MAINTENANCE (M)

Deactivate the inoperative shoulder heater (AMM 21-00-00/901).

1. Position the associated Sidewall Panel (P13-1/P14-1) shoulder heater control OFF.
2. For a Captain's shoulder heater failed on:

   Note: Captain's foot heater will be deactivated. The airplane must also be dispatched using MEL item 21-45-01.

   A. Open and collar P110 panel CAPT FT & SHLDR HTR CTRL circuit breaker.

   B. Open and collar P110 panel CAPT FT & SHLDR HTR circuit breaker.
3. For a First Officer's shoulder heater failed on:

   Note: First Officer's foot heater will be deactivated. The airplane must also be dispatched using MEL item 21-45-01.

   A. Open and collar P210 panel F/O FT & SHLDR HTR CTRL circuit breaker.

   B. Open and collar P210 panel F/O FT & SHLDR HTR circuit breaker.

21-51-01 Air Conditioning Packs

21-51-01-01 Without Single Pack/Bleed Enhancement

TJA,B,C,D

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

One may be inoperative provided:

a. Remaining pack operates normally.
b. Both engine bleed systems operate normally.
c. Both outflow valves operate normally.
d. Airplane remains at or below FL 350.
e. Flight remains within 60 minutes of landing at a suitable airport.
f. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, the following associated items must be operative (AMM 21-00-00/901):

MEL Item	Associated Status Message
21-51-01	PACK L or R
21-51-02	PACK FCV L or R
21-52-01	PACK ACM L or R
21-52-02	ECON COOL VALVE L or R
21-52-03	CMPRSR SENSOR L or R
21-52-04	PACK OUT TEMP SNSR L or R
21-52-05	RAM AIR INLET DOOR L or R
21-52-06	RAM AIR EXIT DOOR L or R
21-52-07	COND TEMP SENSOR L or R

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

1. For APU pneumatic duct pressure seal P/N 93C10353-9 or earlier installed:

A. Inspect the APU pneumatic duct pressure seal (boot) per 777-SL-36-005.

Note: Airplanes HS-TKC and on were delivered with improved seal P/N 93C10353-13 installed and do not require this inspection.

OPERATIONS (O)

Notes: 1. Aft and bulk cargo heating may be affected. Depending on cargo type and ambient conditions, compartment temperatures may be as cold as 13 degrees C with HIGH selected.

2. If the air cycle machine fails on the remaining pack, the pack will operate continuously in standby cooling mode, regardless of altitude or outside air temperature, to maintain cabin pressurization. A single pack in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

1. Position associated pack switch OFF.
2. Reduce performance limited weights by the appropriate adjustments.

   Notes: 1. The takeoff performance limited weight reductions may be avoided by performing a Packs Off Takeoff Supplementary Procedure.

Takeoff & Landing	Enroute Climb
2,903 kg	No penalty

   2. The enroute climb weight 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

3. Flight must remain within 60 minutes of landing at a suitable airport.
4. Flight must remain at or below FL 350.
5. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative pack OFF.

         Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.

      2) Position WING ANTI-ICE selector ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative pack ON.
6. For a FIRE CARGO AFT or FIRE CARGO FWD warning message:
   A. Accomplish the associated Non-Normal Checklist and the following:

1) If above FL 330:
   a. Descend to FL 330.
2) Position both ENGINE ANTI-ICE selectors ON at top-of-descent.

21-51-01 Air Conditioning Packs

21-51-01-03 With Single Pack/Bleed Enhancement

TJG,H, TJR to TJW, TKA to TKF

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

One may be inoperative provided:

a. Remaining pack operates normally.
b. Both engine bleed systems operate normally.
c. Both outflow valves operate normally.
d. Flight remains within 60 minutes of landing at a suitable airport.
e. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, the following associated items must be operative (AMM 21-00-00/901):

MEL Item	Associated Status Message
21-51-01	PACK L or R
21-51-02	PACK FCV L or R
21-52-01	PACK ACM L or R
21-52-02	ECON COOL VALVE L or R
21-52-03	CMPRSR SENSOR L or R
21-52-04	PACK OUT TEMP SNSR L or R
21-52-05	RAM AIR INLET DOOR L or R
21-52-06	RAM AIR EXIT DOOR L or R
21-52-07	COND TEMP SENSOR L or R

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

1. For APU pneumatic duct pressure seal P/N 93C10353-9 or earlier installed:

A. Inspect the APU pneumatic duct pressure seal (boot) per 777-SL-36-005.

Note: Airplanes HS-TKC and on were delivered with improved seal P/N 93C10353-13 installed and do not require this inspection.

OPERATIONS (O)

Notes: 1. Aft and bulk cargo heating may be affected. Depending on cargo type and ambient conditions, compartment temperatures may be as cold as 13 degrees C with HIGH selected.

2. If the air cycle machine fails on the remaining pack, the pack will operate continuously in standby cooling mode, regardless of altitude or outside air temperature, to maintain cabin pressurization. A single pack in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

TJR to TJW

3. (OFCR or OFAR installed)

For left pack inoperative or off, temperature control in the associated crew rest may be degraded.

1. Position associated pack switch OFF.
2. Reduce performance limited weights by the appropriate adjustments.

Notes: 1. The takeoff performance limited weight reductions may be avoided by performing a Packs Off Takeoff Supplementary Procedure.

-200
-200ER
-300

Takeoff & Landing	Enroute Climc
2,903 kg	No Penalty
3,720 kg	No Penalty
3,175 kg	No Penalty

2. The enroute climb weight 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

3. Flight must remain within 60 minutes of landing at a suitable airport.
4. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):

1) Position the ENG Bleed switch associated with the inoperative pack OFF.

Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.

2) Position WING ANTI-ICE selector ON, then OFF as required.

3) Prior to landing, position the ENG Bleed switch associated with the inoperative pack ON.

5. For a FIRE CARGO AFT or FIRE CARGO FWD warning message

A. Accomplish the associated Non-Normal Checklist and the following:

1) If above FL 330:

a. Descend to FL 330.

2) Position both ENGINE ANTI-ICE selectors ON at top-of-descent.

6. (OFAR installed) TJR to TJW

A. For smoke detected in OFAR:

1) Position AFT and BULK CARGO TEMP selectors OFF.

21-51-01 Air Conditioning Packs

21-51-01-04 -300ER -300ER

Interval	Installed	Required	Procedure
C	2	1	**(O) (P) (MV)**

One may be inoperative provided:

a. Remaining pack operates normally.

b. Both engine bleed systems operate normally.

c. Both outflow valves operate normally.

d. Flight remains within 60 minutes of landing at a suitable airport.

e. Appropriate performance adjustments are applied.

MAINTENANCE NOTE

1. For a pack to be operating normally, the following associated items must be operative:

MEL Item	Associated Status Message
21-51-01	PACK L or R
21-51-02	PACK FCV L or R
21-52-01	PACK ACM L or R

MEL Item	Associated Status Message
21-52-02	ECON COOL VALVE L or R
21-52-03	CMPRSR SENSOR L or R
21-52-04	PACK OUT TEMP SNSR L or R
21-52-05	RAM AIR INLET DOOR L or R
21-52-06	RAM AIR EXIT DOOR L or R
21-52-07	COND TEMP SENSOR L or R

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

OPERATIONS (O)

Notes: 1. Aft and bulk cargo heating may be affected. Depending on cargo type and ambient conditions, compartment temperatures may be as cold as 13 degrees C with HIGH selected.

2. If the air cycle machine fails on the remaining pack, the pack will operate continuously in standby cooling mode, regardless of altitude or outside air temperature, to maintain cabin pressurization. A single pack in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

3. For left pack inoperative or off, temperature control in the associated crew rest may be degraded.

4. If left pack is inoperative the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Position associated pack switch OFF.
2. Reduce performance limited weights by the appropriate adjustments.

   Note: The takeoff performance limited weight reductions may be avoided by performing a Packs Off Takeoff or for a right pack inoperative, performing an APU-to-Pack Takeoff Supplementary Procedure.

Takeoff & Landing	Enroute Climb
5,262 kg	No Penalty

3. Flight must remain within 60 minutes of landing at a suitable airport.
4. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):

1) Position the ENG Bleed switch associated with the inoperative pack OFF.

Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.

2) Position WING ANTI-ICE selector ON, then OFF as required.

3) Prior to landing, position the ENG Bleed switch associated with the inoperative pack ON.

5. For a FIRE CARGO AFT or FIRE CARGO FWD warning message
   A. Accomplish the associated Non-Normal Checklist and the following:
      1) If above FL 330, descend to FL 330.
      2) Position both ENGINE ANTI-ICE selectors ON at top-of-descent.
6. For smoke detected in OFAR:
   A. Position AFT and BULK CARGO TEMP selectors OFF.
   B. Position FWD CARGO A/C control OFF.

21-51-01 Air Conditioning Packs

21-51-01-06 DELETED (All)

Interval	Installed	Required	Procedure
	–	–	

DELETION

DELETION

21-51-01 Air Conditioning Packs

21-51-01-07 PACK Switch Lights

21-51-01-07-01 OFF Lights

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

21-51-01 Air Conditioning Packs

21-51-01-07 PACK Switch Lights

21-51-01-07-02 AUTO Lights

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

21-51-02 Pack Flow Control/Shutoff Valves (FCVs)

21-51-02-01 Upper FCVs

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

May be inoperative locked closed provided:

a. Associated lower FCV operates normally.

MAINTENANCE (M)

Lock the inoperative upper FCV closed (AMM 21-00-00/901).

1. Lock the inoperative upper FCV closed.
   A. Depressurize the pneumatic system (AMM 36-00-00/201).
   B. For left pack inoperative FCV:
      1) Open the P110 panel L CTC CHAN 1 (AC) circuit breaker.
      2) Open the P110 panel L CTC CHAN 1 (DC) circuit breaker.
      3) Open the P110 panel L CTC CHAN 2 (AC) circuit breaker.
      4) Open the P110 panel L CTC CHAN 2 (DC) circuit breaker.
      5) Open the P110 panel L ECV/FCV POS SNSR circuit breaker.
      6) Gain access to the FCV by opening ECS access door 195EL.
   C. For right pack inoperative FCV:
      1) Open the P210 panel R CTC CHAN 1 (AC) circuit breaker.
      2) Open the P210 panel R CTC CHAN 1 (DC) circuit breaker.
      3) Open the P210 panel R CTC CHAN 2 (AC) circuit breaker.
      4) Open the P210 panel R CTC CHAN 2 (DC) circuit breaker.
      5) Open the P210 panel R ECV/FCV POS SNSR circuit breaker.
      6) Gain access to the FCV by opening ECS access door 196ER.
   D. Lock the inoperative upper FCV closed.
      1) Remove the locking plug from the FCV actuator boss.
      2) Turn the manual wrench until the FCV lock indicates CL.
      3) Install the locking plug in the manual lock and tighten according to the instructions and caution statement noted in AMM 21-00-00-040-849.
   E. Close the ECS access door.
   F. Close the associated circuit breakers.

2. For airplanes without AIMS V14 or later installed, confirm the associated lower FCV operates normally.
   A. Pressurize the pneumatic system (AMM 36-00-00/201).
   B. Position Air Conditioning Panel (P5) associated PACK switch to AUTO.
   C. Confirm the associated PACK L or R advisory and status messages are not displayed.

      Note: If the PACK L or R advisory or status messages are displayed, the lower FCV was inoperative. Unlock the upper FCV and dispatch using MEL Item 21-51-02-02.

   D. Depressurize the pneumatic system (AMM 36-00-00/201).

OPERATIONS NOTE

TKK to TKR, TKU to TKZ

1. For APU-to-Pack takeoff function installed, if left upper FCV is inoperative the APU-to-Pack takeoff Supplementary Procedure is not allowed.
2. Associated pack will be off below 26,000 feet.

21-51-02 Pack Flow Control/Shutoff Valves (FCVs)

21-51-02-02 Lower FCVs

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

One may be inoperative locked closed provided:

a. Opposite pack operates normally.
b. Associated upper FCV operates normally.

Note: The airplane must also be dispatched using MEL Item 21-73-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL item 21-51-01 for a listing of those items.
2. For a lower FCV locked closed, the associated ozone converter is inoperative.
3. The lower FCV is interchangeable with the upper FCV.

Lock the inoperative lower FCV closed (AMM 21-00-00/901).

1. Lock the inoperative lower FCV closed.
   A. Depressurize the pneumatic system (AMM 36-00-00/201).
   B. For left pack inoperative FCV:

1) Open the P110 panel L CTC CHAN 1 (AC) circuit breaker.
2) Open the P110 panel L CTC CHAN 1 (DC) circuit breaker.
3) Open the P110 panel L CTC CHAN 2 (AC) circuit breaker.
4) Open the P110 panel L CTC CHAN 2 (DC) circuit breaker.
5) Open the P110 panel L ECV/FCV POS SNSR circuit breaker.
6) Gain access to the FCV by opening ECS access door 195EL.

C. For right pack inoperative FCV:
1) Open the P210 panel R CTC CHAN 1 (AC) circuit breaker.
2) Open the P210 panel R CTC CHAN 1 (DC) circuit breaker.
3) Open the P210 panel R CTC CHAN 2 (AC) circuit breaker.
4) Open the P210 panel R CTC CHAN 2 (DC) circuit breaker.
5) Open the P210 panel R ECV/FCV POS SNSR circuit breaker.
6) Gain access to the FCV by opening ECS access door 196ER.

D. Lock the inoperative lower FCV closed.
1) Remove the locking plug from the FCV actuator boss.
2) Turn the manual wrench until the FCV lock indicates CL.
3) Install the locking plug in the manual lock and tighten according to the instructions and caution statement noted in AMM 21-00-00-040-849.

E. Close the ECS access door.

F. Close the associated circuit breakers.

2. For airplanes without AIMS V14 or later installed, confirm the associated upper FCV operates normally.

A. Pressurize the pneumatic system (AMM 36-00-00/201).

B. Position Air Conditioning Panel (P5) associated PACK switch to AUTO.

C. Confirm the associated PACK L or R advisory and status messages are not displayed.

Note: If the PACK L or R advisory or status messages are displayed, the upper FCV was inoperative. Unlock the lower FCV and dispatch using MEL Item 21-51-02-01.

D. Depressurize the pneumatic system (AMM 36-00-00/201).

OPERATIONS NOTE

1. For APU-to-Pack takeoff function installed, if left lower FCV is inoperative the APU-to-Pack takeoff Supplementary Procedure is not allowed.

TKK to TKR, TKU to TKZ

21-51-03 Pack OFF Lights

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to item 21-51-01-07-01.

21-52-01 Air Cycle Machines (ACM)

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

One may be inoperative provided:

a. Associated second stage turbine bypass valve is locked open.
b. Ram air inlet and exit doors operate normally or are secured open.
c. Opposite pack operates normally.
d. Both engine bleed systems operate normally.
e. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated second stage turbine bypass valve open (AMM 21-00-00/901).

1. Depressurize the pneumatic system (AMM 36-00-00/201).
2. Gain access to the inoperative second stage turbine bypass valve, located inboard of the pack low limit valve, using the ECS access door 195EL or 196ER.
3. Disconnect, cap, and stow the electrical connector from the inoperative valve.
4. Turn the manual open/close knob until the valve position indicator shows the valve is open (O).
5. Close the ECS access door.

OPERATIONS (O)

Notes: 1. The pack with the inoperative ACM will remain OFF on the ground and at low altitudes with the PACK MODE advisory message displayed and PACK OFF light illuminated. The pack will operate in standby cooling mode when appropriate altitude and OAT conditions exist with the PACK OFF light extinguished.

2. If the opposite pack fails inflight, the pack operating in standby cooling mode will continue to operate regardless of altitude or OAT

to maintain cabin pressurization. A pack operating in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

TJR to TJW, TKK to TKR, TKU to TKZ

3. (OFCR or OFAR installed)

   For left pack operating in standby cooling mode, ventilation and temperature control in the associated crew rest may be degraded.

TKK to TKR, TKU to TKZ

4. (APU-to-Pack takeoff function installed)

   If left ACM is inoperative the APU-to-Pack takeoff Supplementary Procedure is not allowed.

1. Reduce performance limited weights by the appropriate adjustments:

   Note: The takeoff performance limited weight reduction may be avoided by performing a Packs Off Takeoff or for a right ACM inoperative, performing an APU-to-Pack Takeoff (if installed) Supplementary Procedure.

	Takeoff & Landing	Enroute Climb
-200	2,903 kg	No penalty
-200ER	3,720 kg	No penalty
-300	3,175 kg	No penalty
-300ER	5,262 kg	No penalty

2. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative ACM OFF.

         Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.

      2) Position WING ANTI-ICE selector ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative ACM OFF.

21-52-02 Economy Cooling Valves (ECV)

21-52-02A One Valve Inoperative

Interval	Installed	Required	Procedure
C	2	1	**(O) (P) (MV)**

One may be inoperative provided:

a. Opposite pack operates normally.

b. Both engine bleed systems operate normally.

c. Appropriate performance adjustments are applied.

MAINTENANCE NOTE

1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL item 21-51-01 for a listing of those items.
2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL item 36-00-01 for a listing of those items.

OPERATIONS (O)

Notes: 1. The pack with the inoperative ECV will remain OFF on the ground and at low altitudes with the PACK MODE advisory message displayed and PACK OFF light illuminated. The pack will operate in standby cooling mode when appropriate altitude and OAT conditions exist with the PACK OFF light extinguished.

2. If the opposite pack fails inflight, the pack operating in standby cooling mode will continue to operate, regardless of altitude or OAT, to maintain cabin pressurization. A pack in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

3. (OFCR or OFAR installed) TJR to TJW, TKK to TKR, TKU to TKZ

   For left pack operating in standby cooling mode, ventilation and temperature control in the associated crew rest may be degraded.

4. (APU-to-Pack takeoff function installed) TKK to TKR, TKU to TKZ

   If Left ECV is inoperative the APU-to-Pack takeoff Supplementary Procedure is not allowed.

1. Reduce performance limited weights by the appropriate adjustments:

   Note: The takeoff performance limited weight reductions may be avoided by performing a Packs Off Takeoff or for a right ECV inoperative,

performing an APU-to-Pack Takeoff (if installed) Supplementary Procedure.

Takeoff & Landing	Enroute Climb
-200 2,903 kg	No penalty
-200ER 3,720 kg	No penalty
-300 3,175 kg	No penalty
-300ER 5,262 kg	No penalty

2. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative ECV OFF.

         Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.

      2) Position WING ANTI-ICE selector ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative ECV ON.

21-52-02 Economy Cooling Valves (ECV)

21-52-02B One or Both Valves Inoperative Deactivated Closed

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

May be inoperative locked closed.

MAINTENANCE (M)

Lock the inoperative ECV closed (AMM 21-00-00/901).

1. Depressurize the pneumatic system (AMM 36-00-00/201).
2. Open P110 panel L ECV/FCV POS SNSR circuit breaker.
3. Open P210 panel R ECV/FCV POS SNSR circuit breaker.
4. Gain access to the inoperative ECV using ECS access door 195EL or 196ER.
5. Lock the ECV closed (AMM 21-00-00-040-851).
6. Close the ECS access door.

7. Close P110 panel L ECV/FCV POS SNSR circuit breaker.
8. Close P210 panel R ECV/FCV POS SNSR circuit breaker.

21-52-03 Compressor Discharge Temperature Sensors

Interval	Installed	Required	Procedure
C	6	2	**(M) (P)**

May be inoperative provided:

a. One sensor per pack is verified to operate normally.

MAINTENANCE (M)

Verify one sensor for each pack operates normally (AMM 21-00-00/901).

1. On the Air Conditioning Maintenance page, confirm a CPRSR OUT TEMP indication is displayed for both packs.

21-52-04 Pack Discharge Temperature Sensors

Interval	Installed	Required	Procedure
C	6	2	**(M) (P)**

May be inoperative provided:

a. One sensor per pack is verified to operate normally.

MAINTENANCE (M)

Verify one sensor for each pack operates normally (AMM 21-00-00/901).

1. On the Air Conditioning Maintenance page, confirm a CPRSR OUT TEMP indication is displayed for both packs.

21-52-05 Ram Air Inlet Door Systems

21-52-05A Pack(s) May Be Used

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

One may be inoperative provided:

a. Associated door is secured full open.

b. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Secure the inoperative ram air inlet door full open (AMM 21-00-00/901).

1. For left ram air inlet door inoperative:
   A. Open P110 panel L CTC CHAN 1 (AC) circuit breaker.
   B. Open P110 panel L CTC CHAN 1 (DC) circuit breaker.
   C. Open P110 panel L CTC CHAN 2 (AC) circuit breaker.
   D. Open P110 panel L CTC CHAN 2 (DC) circuit breaker.
   E. Open the ram air inlet actuator door 191LL.
2. For right ram air inlet door inoperative:
   A. Open P210 panel R CTC CHAN 1 (AC) circuit breaker.
   B. Open P210 panel R CTC CHAN 1 (DC) circuit breaker.
   C. Open P210 panel R CTC CHAN 2 (AC) circuit breaker.
   D. Open P210 panel R CTC CHAN 2 (DC) circuit breaker.
   E. Open the ram air inlet actuator door 192LR.
3. Disconnect, cap, and stow the electrical connector from the actuator.
4. Disconnect the actuator rod end from the bellcrank.
5. Loosen the screws on the fixed link, and rotate the fixed link 180 degrees.
6. Position the inlet door to the fully open position.
7. Connect the fixed link to the bellcrank.
8. Tighten the screws on the fixed link to 18–28 pound-inches.
9. Close the ram air inlet actuator access door.
10. Close the associated circuit breakers.

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments for each inoperative open door.

Takeoff & Landing	Enroute Climb	
181 kg	998 kg	-200
272 kg	998 kg	-200ER
181 kg	953 kg	-300
181 kg	1,043 kg	-300ER

Note: The enroute climb weight 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.7% for each inoperative door.

21-52-05 Ram Air Inlet Door Systems

21-52-05B Pack(s) Is Not Used

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

May be inoperative closed provided:

a. Associated pack is not used.

MAINTENANCE (M)

1. If required, install a ram air inlet door cover plate (AMM 21-00-00/901).

OPERATIONS NOTE

1. Position associated pack switch OFF.
2. For one pack off, use MEL Item 21-51-01 (O) procedure.
3. For both packs off, temperature control will be degraded. Use MEL Item 21-31-01-03 (O) procedure.

21-52-06 Ram Air Exhaust Door Systems

21-52-06-01 -200/-200ER/-300/-300ER

21-52-06-01A Pack(s) May Be Used

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

May be inoperative provided:

a. Associated door is secured full open.

MAINTENANCE (M)

Secure the inoperative ram air exhaust door full open (AMM 21-00-00/901).

1. For left ram air exhaust door inoperative:
   A. Open P110 panel L CTC CHAN 1 (AC) circuit breaker.
   B. Open P110 panel L CTC CHAN 1 (DC) circuit breaker.
   C. Open P110 panel L CTC CHAN 2 (AC) circuit breaker.
   D. Open P110 panel L CTC CHAN 2 (DC) circuit breaker.
   E. Open the ram air exhaust blowout door 195QL.
2. For right ram air exhaust door inoperative:
   A. Open P210 panel R CTC CHAN 1 (AC) circuit breaker.
   B. Open P210 panel R CTC CHAN 1 (DC) circuit breaker.
   C. Open P210 panel R CTC CHAN 2 (AC) circuit breaker.
   D. Open P210 panel R CTC CHAN 2 (DC) circuit breaker.
   E. Open the ram air exhaust blowout door 196QR.
3. Disconnect, cap, and stow the electrical connector from the actuator.
4. Disconnect the actuator rod end from the actuator arm assembly.
5. Loosen the screws on the fixed link, and rotate the fixed link 180 degrees.
6. Position the ram air exhaust door to the fully open position
7. Connect the fixed link to the actuator arm assembly.
8. Tighten the screws on the fixed link to 18-28 pound-inches.
9. Close the ram air exhaust blowout door.
10. Close the associated circuit breakers.

21-52-06 Ram Air Exhaust Door Systems

21-52-06-01 -200/-200ER/-300/-300ER

21-52-06-01B Pack(s) Is Not Used

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

May be inoperative provided:

a. Associated pack is not used.

OPERATIONS NOTE

1. Position associated pack switch OFF.
2. For one pack off, use MEL Item 21-51-01 (O) procedure.
3. For both packs off, temperature control will be degraded. Use MEL Item 21-31-01-03 (O) procedure.

21-52-07 Condenser Inlet Temperature Control Systems

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

One may be inoperative provided:

a. Associated condenser low limit valve is locked open.
b. Opposite pack operates normally.
c. Both engine bleed systems operate normally.
d. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL item 36-00-01 for a listing of those items.

Lock the associated condenser low limit valve open (AMM 21-00-00/901).

Note: Locking the low limit valve open may result in display of the associated ECON COOL VALVE L or R status message. No additional maintenance action is required for the ECON COOL VALVE L or R status message.

1. Depressurize the pneumatic system (AMM 36-00-00/201).
2. Gain access to the associated condenser low limit valve, located outboard of the pack second stage turbine bypass valve, using ECS access door 195EL or 196ER.
3. Disconnect, cap, and stow the electrical connectors from the condenser low limit valve.
4. Turn the manual open/close knob until the valve position indicator shows the valve is open (O).
5. Close the ECS access door.

OPERATIONS (O)

Notes: 1. The pack with the inoperative condenser inlet temperature control system will remain OFF on the ground and at low altitudes with the PACK MODE advisory message displayed and PACK OFF light illuminated. The pack will operate in standby cooling mode when appropriate altitude and OAT conditions exist with the PACK MODE advisory message and PACK OFF light extinguished.

2. If the opposite pack fails inflight, the pack operating in standby cooling mode will continue to operate regardless of altitude or OAT to maintain cabin pressurization. A pack operating in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.
3. For left pack operating in standby cooling mode, ventilation and temperature control in the associated crew rest may be degraded. TJR to TJW, TKK to TKR, TKU to TKZ
4. (APU-to-Pack takeoff function installed) TKK to TKR, TKU to TKZ

   If left condenser inlet temperature control is inoperative the APU-to-Pack takeoff Supplementary Procedure is not allowed.

1. Reduce performance limited weights by the appropriate adjustments:

   Note: The takeoff performance limited weight reductions may be avoided by performing a Packs Off Takeoff or for a right condenser inlet temperature control inoperative, performing an APU-to-Pack Takeoff (if installed) Supplementary Procedure.

Takeoff & Landing	Enroute Climb	
2,903 kg	No penalty	-200
3,720 kg	No penalty	-200ER
3,175 kg	No penalty	-300
5,262 kg	No penalty	-300ER

2. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative condenser inlet temperature control system OFF.

         Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.

      2) Position WING ANTI-ICE selector ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative condenser inlet temperature control system ON.

21-61-01 Cabin Temperature Controllers (CTC)

TJA,B,C,D

21-61-01-01 Without Single Pack/Bleed Enhancement

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

One may be inoperative provided:

a. Associated pack is not used.
b. Opposite pack operates normally.
c. Both engine bleed systems operate normally
d. Both outflow valves operate normally.
e. Airplane remains at or below FL 350.
f. Flight remains within 60 minutes of landing at a suitable airport.
g. Appropriate performance adjustments are applied.
h. For the right CTC inoperative:
    1) Electrical power on the right AC Transfer Bus is verified before each departure.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL item 36-00-01 for a listing of those items.

1. For right CTC inoperative:
    A. Before each departure, use the Electrical Maintenance page to verify the Right AC Transfer Bus is powered by confirming the R AC XFR bus status is ON (AMM 21-00-00/901).
2. For APU pneumatic duct pressure seal P/N 93C10353-9 or earlier installed:
    A. Inspect the APU pneumatic duct pressure seal (boot) per 777-SL-36-005.

        Note: Airplanes HS-TKC and on were delivered with improved seal P/N 93C10353-13 installed and do not require this inspection.

OPERATIONS (O)

1. Position associated pack switch OFF. Use MEL Item 21-51-01-01 (O) procedure.

21-61-01 Cabin Temperature Controllers (CTC)

21-61-01-03 With Single Pack/Bleed Enhancement

TJG,H, TJR to TJW, TKA to TKF

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

One may be inoperative provided:

a. Associated pack is not used.
b. Opposite pack operates normally.
c. Both engine bleed systems operate normally.
d. Both outflow valves operate normally.
e. Flight remains within 60 minutes of landing at a suitable airport.
f. Appropriate performance adjustments are applied.
g. For the right CTC inoperative, electrical power on the right AC Transfer Bus is verified before each departure.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

1. For right CTC inoperative:
   A. Before each departure, use the Electrical Maintenance page to verify the Right AC Transfer Bus is powered by confirming the R AC XFR bus status is ON (AMM 21-00-00/901).
2. For APU pneumatic duct pressure seal P/N 93C10353-9 or earlier installed:
   A. Inspect the APU pneumatic duct pressure seal (boot) per 777-SL-36-005.

      Note: Airplanes HS-TKC and on were delivered with improved seal P/N 93C10353-13 installed and do not require this inspection.

OPERATIONS (O)

1. Position associated pack switch OFF. Use MEL Item 21-51-01-03 (O) procedure.

21-61-01 Cabin Temperature Controllers (CTC)

-300ER **21-61-01-04 -300ER**

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

One may be inoperative provided:

a. Associated pack is not used.
b. Opposite pack operates normally.
c. Both engine bleed systems operate normally.
d. Both outflow valves operate normally.
e. Flight remains within 60 minutes of landing at a suitable airport.
f. Appropriate performance adjustments are applied.
g. For the right CTC inoperative, electrical power on the right AC Transfer Bus is verified before each departure.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

1. For right CTC inoperative:
   A. Before each departure, use the Electrical Maintenance page to verify the Right AC Transfer Bus is powered by confirming the R AC XFR bus status is ON (AMM 21-00-00/901).
   B. Position Air Conditioning Panel (P5) FWD CARGO A/C control OFF.

OPERATIONS (O)

1. Position associated pack switch OFF. Use MEL Item 21-51-01-04 (O) procedure.
2. The APU-to-Pack Takeoff Supplementary Procedure is not allowed.
3. For right CTC inoperative:
   A. Position FWD CARGO A/C control OFF.

      Note: Forward cargo air conditioning is not available. Temperature sensitive cargo should not be carried in the forward cargo compartment.

21-61-01 Cabin Temperature Controllers (CTC)

21-61-01-06 All

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Both packs are not used.

b. Flight is conducted unpressurized.

c. For extended overwater flight, manual control of both outflow valves is verified to operate normally.

d. All recirculation fans operate normally.

e. Both ECSMCs operate normally.

f. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

g. Electrical power on the right AC Transfer Bus is verified before each departure.

h. (OFCR or OFAR installed) TJR to TJW, TKK to TKR, TKU to TKZ

1) The rest area(s) is considered inoperative.

DELETION

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

Note: The airplane must also be dispatched using MEL Item 25-29-04. TJR to TJW, TKK to TKR, TKU to TKZ

MAINTENANCE (M)

1. Use MEL Item 21-31-01-03 (M) procedure.

OPERATIONS (O)

1. Position pack switches OFF. Use MEL Item 21-31-01-03 (O) procedure.

21-61-02 Flight Deck Zone Temperature Control System

21-61-02-01 Passenger

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

May be inoperative provided:

a. Left trim air switch remains off.

OPERATIONS NOTE

1. The L TRIM AIR switch must remain off.
   A. Flight deck temperatures may be colder than normal. To improve flight deck temperatures, position FLIGHT DECK TEMP Control to AUTO Warm.
   B. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

TKK to TKR, TKU to TKZ

2. For APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

21-61-02 Flight Deck Zone Temperature Control System

21-61-02-01 Passenger

21-61-02-01-01 AUTO Mode

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

May be inoperative provided:

a. MAN control mode is verified to operate normally.

MAINTENANCE (M)

Verify manual temperature control operates normally (AMM 21-00-00/901).

1. Position Air Conditioning Panel (P5) FLIGHT DECK TEMP control to the MAN C position.
2. On the ECS Maintenance page confirm F/D TRIM VLV indicates approximately 0.0 or on the Air Synoptic confirm the F/D TRIM indicator is full cold (C).

3. Position Air Conditioning Panel (P5) FLIGHT DECK TEMP control to the MAN W position.
4. On the ECS Maintenance page confirm F/D TRIM VLV indicates approximately 1.0 or on the Air Synoptic confirm the F/D TRIM indicator is full warm (W).
5. Position Air Conditioning Panel (P5) FLIGHT DECK TEMP control to the desired setting.

21-61-03 Cabin Zone Temperature Control System (Passenger)

21-61-03A Valve Deactivation Required

Interval	Installed	Required	Procedure
C	6	0	**(M) (P)**

May be inoperative provided:

a. Associated zone trim air modulating valve is deactivated closed.

MAINTENANCE (M)

Deactivate the associated cabin zone trim air modulating valve closed (AMM 21-00-00/901).

1. For cabin zones A, C or E:
   A. Deactivate the associated trim air modulating valve closed.
      1) Open P110 panel L CTC CHAN 1 (AC) circuit breaker.
      2) Open P110 panel L CTC CHAN 1 (DC) circuit breaker.
      3) Open P110 panel L CTC CHAN 2 (AC) circuit breaker.
      4) Open P110 panel L CTC CHAN 2 (DC) circuit breaker.
      5) Open the ECS access door 195EL.
      6) Disconnect, cap, and stow the electrical connector from the applicable zone trim air modulating valve.
      7) Turn the associated manual open/close knob until the valve position indicator is in the closed (CL) position.
      8) Close the ECS access door 195EL.
      9) Close P110 panel L CTC CHAN 1 (AC) circuit breaker.
      10) Close P110 panel L CTC CHAN 1 (DC) circuit breaker.
      11) Close P110 panel L CTC CHAN 2 (AC) circuit breaker.
      12) Close P110 panel L CTC CHAN 2 (DC) circuit breaker.
2. For cabin zones B, D or F:
   A. Deactivate the associated trim air modulating valve closed.
      1) Open P210 panel R CTC CHAN 1 (AC) circuit breaker.
      2) Open P210 panel R CTC CHAN 1 (DC) circuit breaker.
      3) Open P210 panel R CTC CHAN 2 (AC) circuit breaker.
      4) Open P210 panel R CTC CHAN 2 (DC) circuit breaker.
      5) Open the ECS access door 196ER.

6) Disconnect, cap, and stow the electrical connector from the applicable zone trim air modulating valve.
7) Turn the associated manual open/close knob until the valve position indicator is in the closed (CL) position.
8) Close the ECS access door 196ER.
9) Close P210 panel R CTC CHAN 1 (AC) circuit breaker.
10) Close P210 panel R CTC CHAN 1 (DC) circuit breaker.
11) Close P210 panel R CTC CHAN 2 (AC) circuit breaker.
12) Close P210 panel R CTC CHAN 2 (DC) circuit breaker.

OPERATIONS NOTE

1. Operational suggestions for operating with the zone F trim air valve locked closed:
   A. Turning right trim air off will force the packs to a back-up mode and should allow the Zone F to be maintained at more comfortable temperatures.
   B. Increasing the master cabin temperature from the flight deck or biasing up all of the individual zones from the Cabin Area Control Panel (CACP) should increase the pack outlet temperature if zone F is too cold.
2. Additional comments and suggestions:
   A. Operating the air conditioning system in a backup mode will result in degraded temperature control. Therefore, providing blankets for passengers is advisable.
   B. Turning off both re-circulation fans will not reduce total air flow because the pack flow will be increased to compensate. Also, the additional pack flow might exacerbate the already degraded temperature.

21-61-03 Cabin Zone Temperature Control System (Passenger)

21-61-03B Trim Air Switch(es) Remains Off

Interval	Installed	Required	Procedure
C	6	0	**(O) (P)**

May be inoperative with the associated zone trim air modulating valve in any position provided:

a. Associated trim air switch remains off.

OPERATIONS (O)

Position associated TRIM AIR switch OFF.

1. For left trim air switch off:
   A. Flight deck temperatures may be colder than normal or slow to respond to control position. To improve flight deck temperatures, position FLIGHT DECK TEMP Control to AUTO Warm.
2. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

21-61-04 Cabin Temperature Control (Passenger)

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

21-62-01 Trim Air Control Systems

21-62-01-01 Passenger

21-62-01-01A One Inoperative

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

One may be inoperative provided:

a. Associated trim air switch remains off.

OPERATIONS (O)

Position associated TRIM AIR switch OFF.

1. For left trim air switch off:
   A. Flight deck temperatures may be colder than normal, or slow to respond to control position. To improve flight deck temperatures, position FLIGHT DECK TEMP Control to AUTO Warm.
2. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

21-62-01 Trim Air Control Systems

21-62-01-01 Passenger

21-62-01-01B Both Inoperative

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

May be inoperative provided:

a. Both trim air switches remain off.

b. Both packs operate normally.

MAINTENANCE NOTE

1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL item 21-51-01 for a listing of those items.

OPERATIONS (O)

Position TRIM AIR switches OFF.

1. Flight deck temperatures may be colder than normal, or slow to respond to control position. To improve flight deck temperatures, position FLIGHT DECK TEMP Control to AUTO Warm.
2. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

21-62-02 Trim Air Pressure Regulating/Shutoff Valves (PRSOVs)

21-62-02-01 Passenger

21-62-02-01A One Inoperative

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

One may be inoperative provided:

a. Associated valve is locked closed.

MAINTENANCE (M)

Deactivate the inoperative trim air PRSOV closed (AMM 21-00-00/901).

1. Depressurize the pneumatic system (AMM 36-00-00/201).
2. For left trim air PRSOV:
   A. Open P110 panel L CTC CHAN 1 (AC) circuit breaker.
   B. Open P110 panel L CTC CHAN 1 (DC) circuit breaker.
   C. Open P110 panel L CTC CHAN 2 (AC) circuit breaker.
   D. Open P110 panel L CTC CHAN 2 (DC) circuit breaker.
   E. Gain access to the trim air PRSOV by opening ECS access door 195EL.
3. For right trim air PRSOV:
   A. Open P210 panel R CTC CHAN 1 (AC) circuit breaker.
   B. Open P210 panel R CTC CHAN 1 (DC) circuit breaker.
   C. Open P210 panel R CTC CHAN 2 (AC) circuit breaker.
   D. Open P210 panel R CTC CHAN 2 (DC) circuit breaker.
   E. Gain access to the trim air PRSOV by opening ECS access door 196ER.
4. Lock the inoperative trim air PRSOV closed.
   A. Remove the locking plug from the trim air PRSOV actuator boss.
   B. Turn the manual wrench until the manual lock indicator is in the closed (CL) position.
   C. Install the locking plug in the hole and tighten according to the instructions and caution statement noted in AMM 21-00-00-040-863.
5. Close the opened circuit breakers.

OPERATIONS (O)

Note: The AIR synoptic may not agree with the position of the inoperative Trim Air PRSOV.

Position associated TRIM AIR switch OFF.

1. For left trim air switch off:
   A. Flight deck temperatures may be colder than normal, or slow to respond to control position. To improve flight deck temperatures, position FLIGHT DECK TEMP Control to AUTO.
2. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

21-62-02 Trim Air Pressure Regulating/Shutoff Valves (PRSOVs)

21-62-02-01 Passenger

21-62-02-01B Both Inoperative

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

May be inoperative provided:

a. Both valves are locked closed.
b. Both packs operate normally.

MAINTENANCE (M)

Note: For a pack to be operating normally, certain items associated with that system must be operative. See MEL item 21-51-01 for a listing of those items.

Deactivate the trim air PRSOVs closed (AMM 21-00-00/901).

1. Depressurize the pneumatic system (AMM 36-00-00/201).
2. Open the circuit breakers to the inoperative trim air PRSOVs.
   A. Open P110 panel L CTC CHAN 1 (AC) circuit breaker.
   B. Open P110 panel L CTC CHAN 1 (DC) circuit breaker.
   C. Open P110 panel L CTC CHAN 2 (AC) circuit breaker.
   D. Open P110 panel L CTC CHAN 2 (DC) circuit breaker.
   E. Open P210 panel R CTC CHAN 1 (AC) circuit breaker.
   F. Open P210 panel R CTC CHAN 1 (DC) circuit breaker.
   G. Open P210 panel R CTC CHAN 2 (AC) circuit breaker.

H. Open P210 panel R CTC CHAN 2 (DC) circuit breaker.

3. Access the trim air PRSOVs.
4. Lock the trim air PRSOVs closed.
   A. Remove the locking plug from the trim air PRSOV actuator boss.
   B. Turn the manual wrench until the manual lock indicator is in the closed (CL) position.
   C. Install the locking plug in the hole and tighten according to the instructions and caution statement noted in AMM 21-00-00-040-863.
5. Close the associated circuit breakers.

OPERATIONS (O)

Note: The AIR synoptic may not agree with the position of the Trim Air PRSOVs.

Position the TRIM AIR switches OFF.

1. Flight deck temperatures may be colder than normal, or slow to respond to control position. To improve flight deck temperatures, position FLIGHT DECK TEMP Control to AUTO.
2. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

21-62-03 TRIM AIR Switch Lights

21-62-03-01 FAULT Lights

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

21-62-03 TRIM AIR Switch Lights

21-62-03-02 ON Lights

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

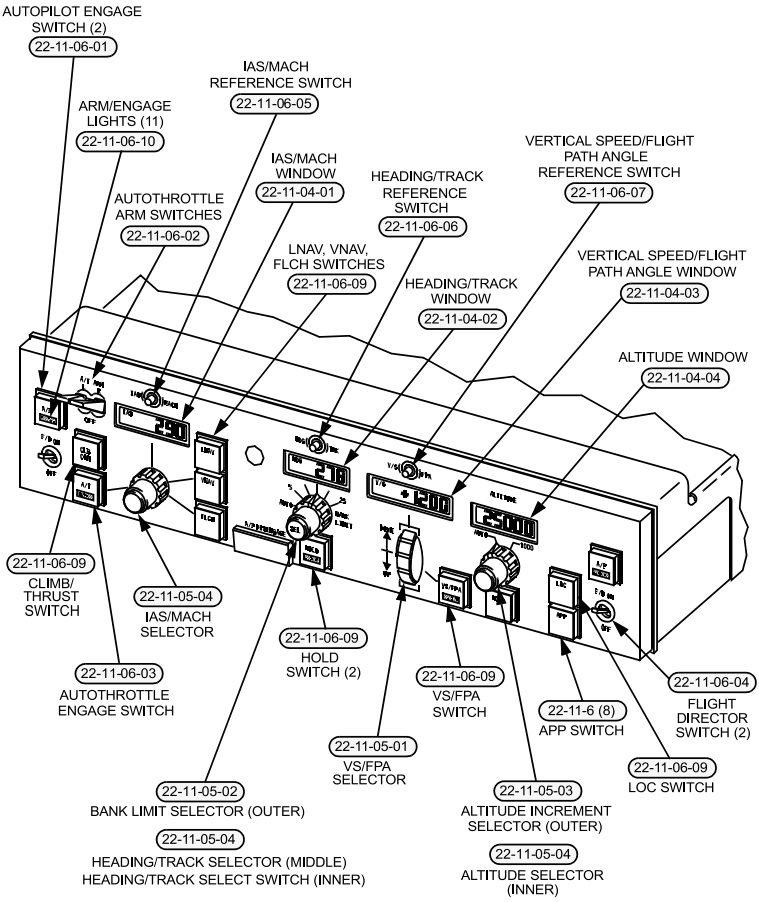
21-73-01 Ozone Converters

21-73-01-01 Passenger

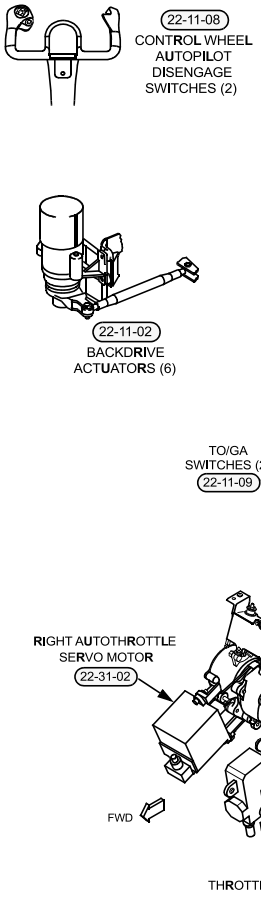
Interval	Installed	Required	Procedure
C	2	0	**(P)**

AUTOFLIGHT

General Locations



MODE CONTROL PANEL - CONTROLS AND DISPLAYS



AUTOTHROTTLE CONTROLS AND SWITCHES

22-11-01 Autopilot Flight Director Computers (AFDC)

22-11-01A One Inoperative

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

One may be inoperative provided:

a. Associated AFDC is deactivated.

b. Associated AFDC backdrive actuator is deactivated.

c. Approach minimums do not require use of the associated autopilot.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Note: The AFDCs are interchangeable. The failed AFDC may be moved to the center position to maintain left and right backdrive functions operational.

Deactivate the inoperative AFDC and associated backdrive actuator (AMM 22-00-00/901).

1. For the center AFDC inoperative:
   A. Open and collar the P11 panel AFDC C circuit breaker.
2. For the left AFDC inoperative:
   A. Open and collar the P11 panel AFDC L circuit breaker.
   B. Open and collar the P11 panel AFDC BACK DRIVE L circuit breaker.
3. For the right AFDC inoperative:
   A. Open and collar the P11 panel AFDC R circuit breaker.
   B. Open and collar the P11 panel AFDC BACK DRIVE R circuit breaker.

OPERATIONS (O)

1. Align the ADIRU (AMM TASK 34-21-00-820-801).
2. For the left or right AFDC inoperative:
   A. Confirm the autopilot system is operational by engaging and disengaging the autopilot on the ground with flaps UP before each departure.
3. The autoland system is not fail-operational and the NO LAND 3 advisory message will be displayed.

22-11-01 Autopilot Flight Director Computers (AFDC)

22-11-01B Two Inoperative

Interval	Installed	Required	Procedure
C	3	1	**(M) (O) (P) (MV)**

Center and one other AFDC may be inoperative provided:

a. Associated AFDC is deactivated.

b. For left or right AFDC inoperative, the associated AFDC backdrive actuator is deactivated.

c. Radio altimeter associated with the operative AFDC operates normally.

d. Both flap/slat control lanes operate normally.

e. All warning electronics system channels operate normally.

f. Approach minimums do not require use of the autopilots.

Note: Approaches are limited to CAT I.

MAINTENANCE (M)

Note: The AFDCs are interchangeable.

Deactivate the inoperative AFDCs and associated backdrive actuator (AMM 22-00-00/901).

1. Open and collar the P11 panel AFDC C circuit breaker.
2. For the left AFDC inoperative:
   A. Open and collar the P11 panel AFDC L circuit breaker.
   B. Open and collar the P11 panel AFDC BACK DRIVE L circuit breaker.
3. For the right AFDC inoperative:
   A. Open and collar the P11 panel AFDC R circuit breaker.
   B. Open and collar the P11 panel AFDC BACK DRIVE R circuit breaker.

OPERATIONS (O)

1. Align the ADIRU (AMM TASK 34-21-00-820-801).
2. Confirm the autopilot system is operational by engaging and disengaging the autopilot on the ground with flaps UP before each departure.
3. The autoland system is inoperative and the NO AUTOLAND advisory message will be displayed. Autopilot may be engaged, however only one flight director is available.

22-11-01 Autopilot Flight Director Computers (AFDC)

22-11-01C All Inoperative

Interval	Installed	Required	Procedure
B	3	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. All AFDCs are deactivated.
b. Both AFDC backdrive actuators are deactivated.
c. Approach minimums do not require use of the autopilots.
d. Number of flight segments and segment duration is acceptable to flight crew.
e. Enroute operations do not require use of the autopilots.
f. Flight is not dispatched for RVSM operations.

Note: Approaches are limited to CAT I.

MAINTENANCE (M)

Deactivate the inoperative AFDCs and associated backdrive actuators (AMM 22-00-00/901).

1. Open and collar the P11 panel AFDC C circuit breaker.
2. Open and collar the P11 panel AFDC L circuit breaker.
3. Open and collar the P11 panel AFDC BACK DRIVE L circuit breaker.
4. Open and collar the P11 panel AFDC R circuit breaker.
5. Open and collar the P11 panel AFDC BACK DRIVE R circuit breaker.
6. Simultaneously open and close the P11 panel MCP L and MCP R circuit breakers to set the MCP IAS-MACH, HDG-TRK and V/S-FPA windows to their default states (IAS, HDG and V/S).

OPERATIONS (O)

1. The autopilot will not engage, flight director is not available, and the autoland system is inoperative. No advisory messages will be displayed.
2. The selected speed and the speed bug will not be available on the PFD.
3. The autothrottle is available. However, the autothrottle engaged light will not illuminated when the autothrottle is engaged.

22-11-02 Autopilot Backdrive Actuator Systems

22-11-02A One Inoperative

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

One may be inoperative provided:

a. Associated AFDC backdrive actuator is deactivated.
b. Opposite AFDC operates normally.
c. Approach minimums do not require use of the associated autopilot.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Deactivate the associated AFDC backdrive actuator (AMM 22-00-00/901).

1. For the left backdrive actuator system inoperative:
   A. Open and collar P11 panel AFDC BACK DRIVE L circuit breaker.
2. For the right backdrive actuator system inoperative:
   A. Open and collar P11 panel AFDC BACK DRIVE R circuit breaker.

OPERATIONS (O)

1. Align the ADIRU (AMM TASK 34-21-00-820-801).
2. Confirm the autopilot system is operational by engaging and disengaging the autopilot on the ground with flaps UP before each departure.
3. Autoland system is not fail-operational and the NO LAND 3 advisory message will be displayed.

22-11-02 Autopilot Backdrive Actuator Systems

22-11-02B Both Inoperative

Interval	Installed	Required	Procedure
B	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Both AFDC backdrive actuators are deactivated.
b. Approach minimums do not require use of the autopilots.
c. Number of flight segments and segment duration is acceptable to flight crew.

d. Enroute operations do not require use of the autopilots.

e. Flight is not dispatched for RVSM operations.

Note: Approaches are limited to CAT I.

MAINTENANCE (M)

Deactivate the AFDC backdrive actuators (AMM 22-00-00/901).

1. Open and collar P11 panel AFDC BACK DRIVE L circuit breaker.
2. Open and collar P11 panel AFDC BACK DRIVE R circuit breaker.

OPERATIONS (O)

1. Autopilot cannot be engaged, but flight director is available.
2. Autoland system is inoperative and the NO AUTOLAND advisory message will be displayed.

22-11-03 Autopilot Mode Control Panel Lanes

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

MAINTENANCE NOTE

1. For AUTOTHROTTLE SERVO L or R status message and AUTOTHROTTLE L or R advisory message displayed:
   A. The airplane must also be dispatched using MEL Item 22-31-02.
2. For SEL SPD displayed on the associated PFD:
   A. The airplane must also be dispatched using MEL Item 22-11-05-04-01.
3. For Flight Director Bars not displayed on the associated PFD:
   A. The airplane must also be dispatched using MEL Item 22-11-10.

22-11-04 Mode Control Panel Windows

22-11-04-01 Airspeed (IAS-MACH)

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

May be inoperative provided:

a. Selected airspeed indications on both PFDs operate normally.

22-11-04 Mode Control Panel Windows

22-11-04-02 Heading (HDG-TRK)

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

May be inoperative provided:

a. Selected heading indications on both PFDs operate normally.

22-11-04 Mode Control Panel Windows

22-11-04-03 Vertical Speed (V/S-FPA)

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

May be inoperative provided:

a. Selected vertical speed indications on both PFDs operate normally.

22-11-04 Mode Control Panel Windows

22-11-04-04 Altitude (ALTITUDE)

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

May be inoperative provided:

a. Selected altitude indications on both PFDs operate normally.

22-11-04 Mode Control Panel Windows

22-11-04-05 Window Lighting

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

May be inoperative provided:

a. Selected airspeed indications on both PFDs operate normally.
b. Selected heading indications on both PFDs operate normally.
c. Selected vertical speed indications on both PFDs operate normally.
d. Selected altitude indications on both PFDs operate normally.

22-11-05 Mode Control Panel Selectors

22-11-05-01 V/S - FPA Selector (DOWN, UP)

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

22-11-05 Mode Control Panel Selectors

22-11-05-02 BANK LIMIT Selector (AUTO, 5, 10, 15, 20, 25)

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

22-11-05 Mode Control Panel Selectors

22-11-05-03 Altitude Increment Selector (AUTO, 1000)

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

May be inoperative provided:

a. Selector is verified to be in AUTO position.

OPERATIONS (O)

Verify the Altitude Increment selector operates in the AUTO position.

1. Turn the Altitude selector in either direction.
2. Observe the altitude displayed in the altitude window. If altitude changes in increments of 100 feet, the AUTO position is operating normally.

22-11-05 Mode Control Panel Selectors

22-11-05-04 Selector Push Functions

22-11-05-04-01 IAS - MACH

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

22-11-05 Mode Control Panel Selectors

22-11-05-04 Selector Push Functions

22-11-05-04-02 HDG - TRK SEL

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

22-11-05 Mode Control Panel Selectors

22-11-05-04 Selector Push Functions

22-11-05-04-03 ALTITUDE

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

22-11-06 Mode Control Panel Switches

22-11-06-01 A/P Engage Switches

22-11-06-01A One Inoperative

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

22-11-06 Mode Control Panel Switches

22-11-06-01 A/P Engage Switches

22-11-06-01B Both Inoperative

Interval	Installed	Required	Procedure
B	2	0	**(O) (P) (MV)**

May be inoperative provided:

a. Approach minimums do not require use of the autopilots.
b. Number of flight segments and segment duration is acceptable to flight crew.
c. Enroute operations do not require use of the autopilots.
d. Flight is not dispatched for RVSM operations.

Note: Approaches are limited to CAT I.

OPERATIONS (O)

1. Autopilot cannot be engaged, but flight director is available.

22-11-06 Mode Control Panel Switches

22-11-06-02 Autothrottle Arm Switches (A/T ARM L, R)

22-11-06-02-01 RR

22-11-06-02-01A One Inoperative

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

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

One may be inoperative provided:

a. Associated servo motor is deactivated.

b. Both thrust levers are manually set for takeoff and go-around thrust.
c. Flight remains within 180 minutes of landing at a suitable airport.

MAINTENANCE (M)

Deactivate the associated autothrottle servo motor (AMM 22-00-00/901).

1. For the left A/T ARM switch inoperative:
   A. Open and collar P11 panel A/T SERVO L circuit breaker.
2. For the right A/T ARM switch inoperative:
   A. Open and collar P11 panel A/T SERVO R circuit breaker.

OPERATIONS (O)

1. The AUTOTHROTTLE L or R advisory message will be displayed.
2. The autothrottle cannot be engaged on the ground.
3. Set both thrust levers manually for takeoff and go-around.
4. The flight must remain within 180 minutes of landing at a suitable airport.
5. For an inoperative switch failed to the armed state:
   A. The EPR trim function will operate normally provided the operative autothrottle arm switch is positioned to A/T ARM.

      Note: The autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.
6. For an inoperative switch failed to the off state:
   A. Autothrottle functionality is available in flight for the operative autothrottle.

22-11-06 Mode Control Panel Switches

22-11-06-02 Autothrottle Arm Switches (A/T ARM L, R)

22-11-06-02-01 RR

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

22-11-06-02-01B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require autothrottle use.
b. Flight remains within 180 minutes of landing at a suitable airport.

Note: Approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. Autothrottle is inoperative.
2. The flight must remain within 180 minutes of landing at a suitable airport.

22-11-06 Mode Control Panel Switches

22-11-06-02 Autothrottle Arm Switches (A/T ARM L, R)

22-11-06-02-02 GE

22-11-06-02-02A One Inoperative

TKK to TKR, TKU to TKZ

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

One may be inoperative provided:

a. Associated servo motor is deactivated.
b. EEC normal mode operates normally.
c. Both thrust levers are manually set for takeoff and go-around thrust.
d. Flight remains within 180 minutes of landing at a suitable airport.

MAINTENANCE (M)

Deactivate the associated autothrottle servo motor (AMM 22-00-00/901).

1. For the left A/T ARM switch inoperative:
   A. Open and collar P11 panel A/T SERVO L circuit breaker.
2. For the right A/T ARM switch inoperative:
   A. Open and collar P11 panel A/T SERVO R circuit breaker.

OPERATIONS (O)

1. The AUTOTHROTTLE L or R advisory message will be displayed.
2. The autothrottle cannot be engaged on the ground.
3. Set both thrust levers manually for takeoff and go-around.
4. The flight must remain within 180 minutes of landing at a suitable airport.
5. For an inoperative switch failed to the armed state:
   A. The N1 trim function will operate normally, provided the operative autothrottle arm switch is positioned to A/T ARM.

Note: The autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

6. For an inoperative switch failed to the off state:
   A. Autothrottle functionality is available in flight for the operative autothrottle.

22-11-06 Mode Control Panel Switches

22-11-06-02 Autothrottle Arm Switches (A/T ARM L, R)

22-11-06-02-02 GE

TKK to TKR, TKU to TKZ

22-11-06-02-02B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

May be inoperative provided:

a. EEC normal mode operates normally.
b. Approach minimums do not require autothrottle use.
c. Flight remains within 180 minutes of landing at a suitable airport.

Note: Approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. Autothrottle is inoperative.
2. The flight must remain within 180 minutes of landing at a suitable airport.

22-11-06 Mode Control Panel Switches

22-11-06-03 A/T Engage Switch

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

22-11-06-03-01 RR

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require autothrottle use.
b. Flight remains within 180 minutes of landing at a suitable airport.

Note: Approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. Any autothrottle mode which operates normally may be used.
2. The flight must remain within 180 minutes of landing at a suitable airport.

22-11-06 Mode Control Panel Switches

22-11-06-03 A/T Engage Switch

22-11-06-03-02 GE

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. EEC normal mode operates normally.
b. Approach minimums do not require autothrottle use.
c. Flight remains within 180 minutes of landing at a suitable airport.

Note: Approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. Any autothrottle mode which operates normally may be used.
2. The flight must remain within 180 minutes of landing at a suitable airport.

22-11-06 Mode Control Panel Switches

22-11-06-04 F/D Switches

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

May be inoperative provided:

a. Approach minimums do not require flight director use.

22-11-06 Mode Control Panel Switches

22-11-06-05 IAS - MACH Reference Switch

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

May be inoperative provided:

a. IAS is displayed in associated window.

MAINTENANCE NOTE

1. For MACH displayed in the associated MCP window:
   A. Simultaneously open and close P11 panel MCP L and MCP R circuit breakers to cause IAS to be displayed.

22-11-06 Mode Control Panel Switches

22-11-06-06 HDG - TRK Reference Switch

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

May be inoperative provided:

a. HDG is displayed in associated window.

MAINTENANCE NOTE

1. For TRK displayed in the associated MCP window:
   A. Simultaneously open and close P11 panel MCP L and MCP R circuit breakers to cause HDG to be displayed.

22-11-06 Mode Control Panel Switches

22-11-06-07 V/S - FPA Reference Switch

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

MAINTENANCE NOTE

1. For FPA displayed in the associated MCP window:

A. Simultaneously open and close P11 panel MCP L and MCP R circuit breakers to cause V/S to be displayed.

22-11-06 Mode Control Panel Switches

22-11-06-08 APP Switch

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

May be inoperative provided:

a. Approach minimums do not require use of the autopilot flight director system approach mode.

22-11-06 Mode Control Panel Switches

22-11-06-09 CLB CON, LNAV, VNAV, FLCH, VS/FPA, Heading/ Track HOLD, Altitude HOLD, and LOC Switches

Interval	Installed	Required	Procedure
C	8	0	**(P)**

May be inoperative provided:

a. Enroute operations do not require their use.

OPERATIONS NOTE

1. For enroute operations such as RVSM, any one of the following autopilot pitch modes will provide acceptable altitude hold capability: Altitude Hold (ALT), Vertical Speed (V/S) or Flight Path Angle (FPA) with 000 selected, Vertical Navigation (VNAV) with FMC flight plan, or VNAV with FMC flight plan combined with altitude intervention.

22-11-06 Mode Control Panel Switches

22-11-06-10 Arm/Engage Lights

Interval	Installed	Required	Procedure
C	11	0	**(P)**

May be inoperative provided:

a. The associated mode indications on both PFDs operate normally.

22-11-07 Automatic Landing System (Autoland)

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require its use.

Note: Approaches are limited to CAT I.

22-11-07 Automatic Landing System (Autoland)

22-11-07-01 Triple Channel Autoland (LAND 3)

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

22-11-08 Control Wheel Autopilot Disconnect Switches

22-11-08A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Autopilot is not used below 1,500 feet AGL.

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

Note: Approaches are limited to CAT I.

22-11-08 Control Wheel Autopilot Disconnect Switches

22-11-08B Both Inoperative

Interval	Installed	Required	Procedure
B	2	0	**(P) (MV)**

May be inoperative provided:

a. Autopilot is not used.

b. Approach minimums do not require use of the autopilot.

c. Number of flight segments and segment duration is acceptable to flight crew.

d. Enroute operations do not require use of the autopilot.

e. Flight is not dispatched for RVSM operations.

Note: Approaches are limited to CAT I.

22-11-09 Takeoff/Go-Around (TO/GA) Switches

22-11-09A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Approach minimums do not require its use.

Note: If the NO LAND 3 advisory message is displayed, approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. The autoland system is not fail-operational. The NO LAND 3 advisory message may be displayed.

22-11-09 Takeoff/Go-Around (TO/GA) Switches

22-11-09B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

May be inoperative provided:

a. Both thrust levers are operated manually for takeoff and go-around.

b. Autopilot and flight director are not used on approach 500 feet AGL or MDA, whichever is higher.

Notes: 1. Flight director go-around and windshear guidance are not available with both TO/GA switches inoperative.

2. Approaches are limited to CAT I.

OPERATIONS NOTE

1. The autoland system is not fail-operational. The NO LAND 3 or NO AUTOLAND advisory message may be displayed.
2. Flight director go-around and windshear guidance are not available with both TO/GA switches inoperative.

22-11-10 Flight Director Systems

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

May be inoperative provided:

a. Approach minimums do not require their use.

22-31-01 Autothrottle System

22-31-01-01 RR

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require its use.

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

Notes: 1. Any autothrottle mode which operates normally may be used.

2. Approaches are limited to CAT IIIA with decision height.

OPERATIONS (O)

1. Some failure modes of the autothrottle system may cause the EPR reference/target indications to be inoperative.

22-31-01 Autothrottle System

22-31-01-02 GE

TKK to TKR,
TKU to TKZ

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. EEC normal mode operates normally.

b. Approach minimums do not require its use.

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

Notes: 1. Any autothrottle mode which operates normally may be used.

2. Approaches are limited to CAT IIIA with decision height.

OPERATIONS (O)

1. Some failure modes of the autothrottle system may cause the N1 reference/target indications to be inoperative.

22-31-02 Autothrottle Servo Motors

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF

22-31-02-01 RR

22-31-02-01A One Inoperative

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

One may be inoperative provided:

a. Associated servo motor is deactivated.

b. Both thrust levers are manually set for takeoff and go-around thrust.

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

MAINTENANCE (M)

Deactivate the inoperative autothrottle servo motor (AMM 22-00-00/901).

1. For the left servo motor inoperative:
   A. Open and collar the P11 panel A/T SERVO L circuit breaker.
2. For the right servo motor inoperative:
   A. Open and collar the P11 panel A/T SERVO R circuit breaker.

OPERATIONS (O)

Notes: 1. The AUTOTHROTTLE L or R advisory message will be displayed.
2. The autothrottle cannot be engaged on the ground.
3. The EPR trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.
4. For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff:
   A. Set both autothrottle switches to A/T ARM.
   B. Set both thrust levers manually.
3. After takeoff:
   A. If desired, set the deactivated autothrottle servo motor A/T ARM switch OFF to restore functionality of the operative autothrottle servo motor.
4. For go-around:

A. Set both thrust levers manually.

22-31-02 Autothrottle Servo Motors

22-31-02-01 RR

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

22-31-02-01B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Both servo motors are deactivated.

b. Approach minimums do not require use of the autothrottles.

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

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Deactivate the inoperative autothrottle servo motors (AMM 22-00-00/901).

1. Open and collar the P11 panel A/T SERVO L circuit breaker.
2. Open and collar the P11 panel A/T SERVO R circuit breaker.

OPERATIONS (O)

Notes: 1. The AUTOTHROTTLE L and R advisory messages will be displayed.

2. The EPR trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.

3. For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff:
   A. Set both autothrottle switches to A/T ARM.

22-31-02 Autothrottle Servo Motors

TKK to TKR, TKU to TKZ

22-31-02-02 GE

22-31-02-02A One Inoperative

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

May be inoperative provided:

a. EEC normal mode operates normally.
b. Associated servo motor is deactivated.
c. Both thrust levers are manually set for takeoff and go-around thrust.
d. Flight remains within 180 minutes of landing at a suitable airport.

MAINTENANCE (M)

Deactivate the inoperative autothrottle servo motors (AMM 22-00-00/901).

1. For the left servo motor inoperative:
   A. Open and collar the P11 panel A/T SERVO L circuit breaker.
2. For the right servo motor inoperative:
   A. Open and collar the P11 panel A/T SERVO R circuit breaker.

OPERATIONS (O)

Notes: 1. The AUTOTHROTTLE L or R advisory message will be displayed.
2. The autothrottle cannot be engaged on the ground.
3. The N1 trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.
4. For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff:
   A. Set both autothrottle switches to A/T ARM.
   B. Set both thrust levers manually.
3. After takeoff:
   A. If desired, set the deactivated autothrottle servo motor A/T ARM switch OFF to restore functionality of the operative autothrottle servo motor.
4. For go-around:

A. Set both thrust levers manually.

22-31-02 Autothrottle Servo Motors

22-31-02-02 GE

TKK to TKR, TKU to TKZ

22-31-02-02B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. EEC normal mode operates normally.
b. Both servo motors are deactivated.
c. Approach minimums do not require use of the autothrottles.
d. Flight remains within 180 minutes of landing at a suitable airport.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Deactivate the inoperative autothrottle servo motors (AMM 22-00-00/901)

1. Open and collar the P11 panel A/T SERVO L circuit breaker.
2. Open and collar the P11 panel A/T SERVO R circuit breaker.

OPERATIONS (O)

Notes: 1. The AUTOTHROTTLE L and R advisory messages will be displayed.
2. The N1 trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.
3. For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff:
   A. Set both autothrottle switches to A/T ARM.

22-31-03 Autothrottle Disconnect Switches

TJA,B,C,D,G,H,

22-31-03-01 RR

TJR to TJW, TKA to TKF

22-31-03-01A One Inoperative

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

One may be inoperative provided:

a. Both A/T ARM switches operate normally.

22-31-03 Autothrottle Disconnect Switches

TJA,B,C,D,G,H,

22-31-03-01 RR

TJR to TJW, TKA to TKF

22-31-03-01B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

May be inoperative provided:

a. Autothrottles are not armed.

b. Approach minimums do not require use of autothrottles.

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

Note: Approaches are limited to CAT IIIA with decision height.

22-31-03 Autothrottle Disconnect Switches

TKK to TKR, TKU to TKZ

22-31-03-02 GE

22-31-03-02A One Inoperative

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

One may be inoperative provided:

a. Both A/T ARM switches operate normally.

22-31-03 Autothrottle Disconnect Switches

22-31-03-02 GE

TKK to TKR, TKU to TKZ

22-31-03-02B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

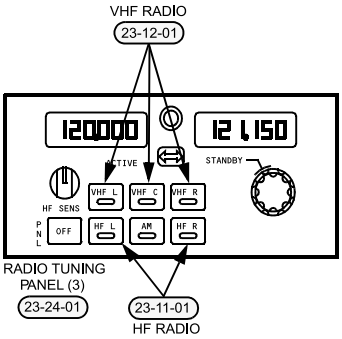
May be inoperative provided:

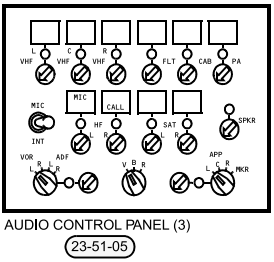
a. EEC normal mode operates normally.
b. Autothrottles are not armed.
c. Approach minimums do not require use of autothrottles.
d. Flight remains within 180 minutes of landing at a suitable airport.

Note: Approaches are limited to CAT IIIA with decision height.

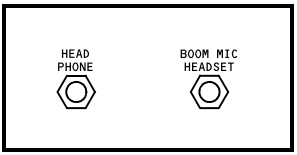
COMMUNICATIONS

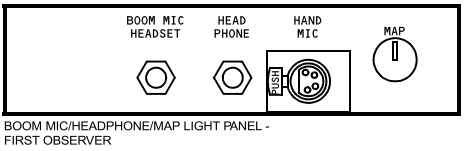
General Locations

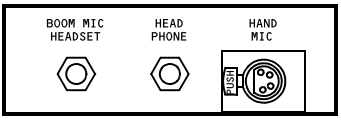


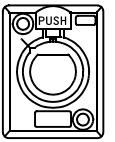


COMMUNICATION SYSTEM CONTROLS

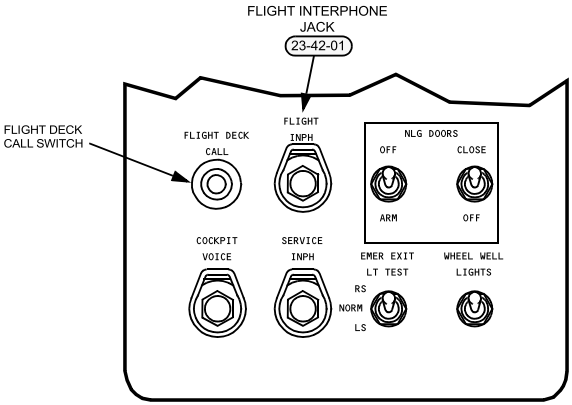




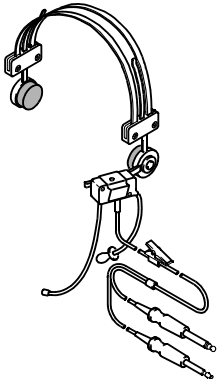




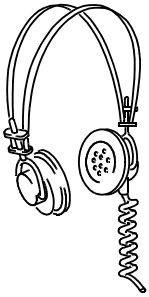
CREWMEMBER INTERPHONE SYSTEMS
23-42-01



P40 SERVICE AND APU SHUTDOWN PANEL

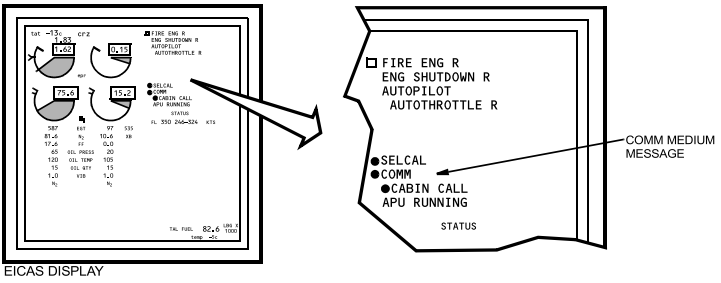


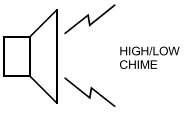
HEADSET/
BOOM MICROPHONE
23-51-04

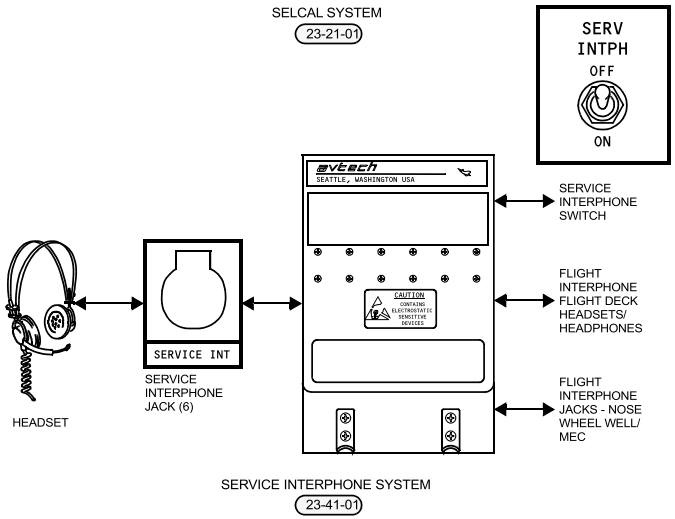


HEADPHONE
23-51-04

HAND MICROPHONE
23-51-03


FIRE ENG R
ENG SHUTDOWN R
AUTOPILOT
AUTOTHROTTLE R
COMM MEDIUM MESSAGE
SELCAL
COMM
CABIN CALL
APU RUNNING
STATUS
EICAS DISPLAY


HIGH/LOW CHIME
AURAL WARNING SPEAKERS


SELCAL SYSTEM
23-21-01
SERV
INTPH
OFF
ON
SEATTLE, WASHINGTON USA
SERVICE INTERPHONE SWITCH
CAUTION
FLIGHT INTERPHONE FLIGHT DECK HEADSETS/ HEADPHONES
FLIGHT INTERPHONE JACKS - NOSE WHEEL WELL/ MEC
SERVICE INT
SERVICE INTERPHONE JACK (6)
HEADSET
SERVICE INTERPHONE SYSTEM
23-41-01

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

23-11-01A Procedures Do Not Require Use

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

Both may be inoperative provided:

a. Flight is not dispatched for operations that require two LRCS.

b. HF voice communication is not required for the intended route.

MAINTENANCE NOTE

1. If desired, the inoperative HF radio can be deactivated by opening and collaring the associated P11 panel L HF COMM or R HF COMM circuit breaker.

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

23-11-01B Procedures Require Use, Two LRCS Required

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

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.

DELETION

MAINTENANCE NOTE

1. If desired, the inoperative HF radio can be deactivated by opening and collaring the associated P11 panel L HF COMM or R HF COMM circuit breaker.

OPERATIONS (O)

1. Ensure SATVOICE services are available as a LRCS over the intended route of flight.
2. Confirm with BKKOP and/or refer to relevant Aeronautical Information Publication (AIP) for ATC SATVOICE calling codes.

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

23-11-01C Procedures Require Use, Two LRCS Not Required

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Flight is not dispatched for operations that require two LRCS.

MAINTENANCE NOTE

1. If desired, the inoperative HF radio can be deactivated by opening and collaring the associated P11 panel L HF COMM or R HF COMM circuit breaker

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

TJR to TJW, TKK to TKR

23-11-01-01 HF Data Link

23-11-01-01A Procedures Require Use

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

May be inoperative provided:

a. SATCOM datalink operates normally.

b. SATCOM coverage is available over the intended route of flight.

OPERATIONS (O)

1. Ensure SATCOM datalink is available over the intended route of flight.
2. Use SATCOM for datalink communication.

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

23-11-01-01 HF Data Link

TJR to TJW,
TKK to TKR

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

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-12-01 VHF Communications Systems

Interval	Installed	Required	Procedure
C	3	2	**(P)**

One may be inoperative provided:

a. Left VHF radio operates normally.

23-12-01 VHF Communications Systems

23-12-01-01 VHF Data Link

23-12-01-01A Procedures Require Use

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

May be inoperative provided:

a. VHF voice, SATCOM or HF data link operate normally.

OPERATIONS (O)

1. Use VHF voice, SATCOM or HF for communication.

23-12-01 VHF Communications Systems

23-12-01-01 VHF Data Link

23-12-01-01B Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P) (MV)**

May be inoperative provided:

a. Procedures do not require its use.

23-15-01 Satellite Communication (SATCOM) Systems

23-15-01B Procedures Require Use

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

May be inoperative provided:

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

b. For operations requiring two LRCS, two HF systems operate normally.

DELETION

Note: The airplane does not meet the RCP 240 and RSP 180 specifications. Operations in certain oceanic/remote areas implementing RCP 240 and RSP 180 will not receive reduced horizontal aircraft separations.

OPERATIONS (O)

Note: The SATCOM advisory message will be displayed when the status message SATCOM SYSTEM is displayed.

1. The flight must remain within 180 minutes of landing at a suitable airport.

23-15-01 Satellite Communication (SATCOM) Systems

23-15-01C Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P) (MV)**

May be inoperative provided:

a. Procedures do not require its use.

Note: The airplane does not meet the RCP 240 and RSP 180 specifications. Operations in certain oceanic/remote areas implementing RCP 240 and RSP 180 will not receive reduced horizontal aircraft separations.

23-15-01 Satellite Communication (SATCOM) Systems

23-15-01-01 SATCOM Voice Systems

23-15-01-01A Procedures Require Use

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

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

a. Two HF systems, or one HF system and SATCOM datalink operate normally.

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

OPERATIONS (O)

Note: The SATCOM VOICE advisory message will be displayed when the status message SATCOM HI GAIN is displayed.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. Use HF system or SATCOM datalink for communication.

23-15-01 Satellite Communication (SATCOM) Systems

23-15-01-01 SATCOM Voice Systems

23-15-01-01B Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P) (MV)**

May be inoperative provided:

a. Procedures do not require its use.

23-15-01 Satellite Communication (SATCOM) Systems

23-15-01-02 SATCOM Data Link

23-15-01-02A Procedures Require Use

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

May be inoperative provided:

a. For operations requiring two LRCS, two HF systems, or one HF system and SATCOM voice operate normally.

DELETION

Note: The airplane does not meet the RCP 240 and RSP 180 specifications. Operations in certain oceanic/remote areas implementing RCP 240 and RSP 180 will not receive reduced horizontal aircraft separations.

OPERATIONS (O)

1. Use HF or SATCOM voice for communication.

23-15-01 Satellite Communication (SATCOM) Systems

23-15-01-02 SATCOM Data Link

23-15-01-02B Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P) (MV)**

May be inoperative provided:

a. Procedures do not require its use.

Note: The airplane does not meet the RCP 240 and RSP 180 specifications. Operations in certain oceanic/remote areas implementing RCP 240 and RSP 180 will not receive reduced horizontal aircraft separations.

23-21-01 Selective Call System (SELCAL)

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

OPERATIONS (O)

1. Either LP or RP must use Radio Listening Watch procedure.

23-24-01 Radio Tuning Panels

Interval	Installed	Required	Procedure
C	3	2	**(P)**

One may be inoperative provided:

a. Left radio tuning panel operates normally.

Note: Any function that operates normally may be used.

MAINTENANCE NOTE

The Radio Tuning Panels are interchangeable.

DELETION

23-24-02 Emergency Locator Transmitter (ELT) (Fixed)

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. Repair or replacement is made within six flights or 25 flight hours, whichever occurs first.

23-27-01 Data Communication Management System

23-27-01A SATCOM Voice Inoperative

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

May be inoperative provided:

a. Procedures do not require its use.

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

Note: The airplane does not meet the RCP 240 and RSP 180 specifications. Operations in certain oceanic/remote areas implementing RCP 240 and RSP 180 will not receive reduced horizontal aircraft separations.

MAINTENANCE NOTE

1. For DCMS inoperative, the Flight Deck Printer, Maintenance Access Terminal (MAT), Portable Maintenance Access Terminal, the Side Display access to the Central Maintenance Computer and ACARS may be inoperative.

OPERATIONS (O)

Notes: 1. For all AIMS-1, and AIMS-2 prior to BP V14, the 8.33 kHz VHF radio tuning is not available. TKA to TKF

2. The DATALINK SYS advisory message will be displayed.

1. The flight must remain within 180 minutes of landing at a suitable airport.

23-27-01 Data Communication Management System

23-27-01B SATCOM Voice Operative

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

May be inoperative provided:

a. Procedures do not require its use.

b. SATCOM voice operates normally.

Note: The airplane does not meet the RCP 240 and RSP 180 specifications. Operations in certain oceanic/remote areas implementing RCP 240 and RSP 180 will not receive reduced horizontal aircraft separations.

MAINTENANCE NOTE

1. For DCMS inoperative, the Flight Deck Printer, Maintenance Access Terminal (MAT), Portable Maintenance Access Terminal, the Side Display access to the Central Maintenance Computer and ACARS may be inoperative.

OPERATIONS (O)

TKA to TKF **Notes:** 1. For all AIMS-1, and AIMS-2 prior to BP V14, the 8.33 kHz VHF radio tuning is not available.

2. The DATALINK SYS advisory message will be displayed.

1. Use SATCOM voice for communication when required.

23-27-01 Data Communication Management System

23-27-01-01 Automatic Dependent Surveillance - Contract (ADS - C) Function

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. Procedures do not require its use.

Note: The airplane does not meet the RCP 180 specification. Operations in certain oceanic/remote areas implementing RCP 240 and RCP 180 will not receive reduced horizontal aircraft separations.

MAINTENANCE NOTE

1. The Automatic Dependent Surveillance - Contract (ADS-C) Function is hosted in the FMCF with its flight deck interface provided by the DCMS.

23-27-01 Data Communication Management System

23-27-01-02 ACPT/CANC/RJCT Switch Lights

Interval	Installed	Required	Procedure
C	6	0	**(P)**

23-27-02 Flight Deck Communications System (ACARS Data Link)

23-27-02A SATCOM Voice Inoperative

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

May be inoperative provided:

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

OPERATIONS (O)

TJR to TJW, TKK to TKR, TKU to TKZ

Notes: 1. For AIMS-2 with BP V14 and on, the 8.33 kHz VHF radio tuning is not available.

2. Interface to ACARS Communications Manager on MFD will be inoperative.

1. Use VHF or HF voice for communication.
2. The flight must remain within 180 minutes of landing at a suitable airport.

23-27-02 Flight Deck Communications System (ACARS Data Link)

23-27-02B SATCOM Voice Operative

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

May be inoperative provided:

a. SATCOM voice operates normally.

OPERATIONS (O)

TJR to TJW, TKK to TKR, TKU to TKZ

Notes: 1. For AIMS-2 with BP V14 and on, the 8.33 kHz VHF radio tuning is not available.

2. Interface to ACARS Communications Manager on MFD will be inoperative.

1. Use SATCOM, VHF or HF voice for communication.

23-27-02 Flight Deck Communications System (ACARS Data Link)

23-27-02C Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P) (MV)**

May be inoperative provided:

a. Procedures do not require its use.

23-27-02 Flight Deck Communications System (ACARS Data Link)

23-27-02-01 ATC Databases

23-27-02-01A Procedures Require Use TKU to TKZ

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

OPERATIONS (O)

Note: Aeronautical Telecommunication Network (ATN) addresses are not available for Controller/Pilot Data Link Communications (CPDLC) function.

1. Use voice communication procedures.

23-27-02 Flight Deck Communications System (ACARS Data Link)

23-27-02-01 ATC Databases

23-27-02-01B Procedures Do Not Require Use TKU to TKZ

Interval	Installed	Required	Procedure
D	2	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-31-01 Passenger Address System (Passenger)

Interval	Installed	Required	Procedure
B	1	0	**(O) (P)**

May be inoperative provided:

a. Both megaphones are operative.

b. Flight attendant chime and call lights operate normally.

Note: Any passenger address function that operates normally may be used.

OPERATIONS (O)

1. P-i-C shall establish an appropriate alternative communication based on the use of the cabin/service interphone system for normal and all remaining available communication system for emergency procedures in order to be able to comply with the required normal and emergency operations.
2. Prior to flight, the P-i-C must brief cabin crew members use the cabin/service Interphone system instead of the PA system.

23-31-01 Passenger Address System (Passenger)

23-31-01-01 Passenger Address Controller Modes

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

One may be inoperative provided:

a. Operating controller mode is selected.

MAINTENANCE (M)

1. Position the PA NORM/ALT switch on the Attendant Switch Panel (ASP) to ALT.
2. Confirm the PASSENGER ADDRESS status message is not displayed.

23-31-01 Passenger Address System (Passenger)

23-31-01-02 Lavatory Speakers

23-31-01-02A Cabin Version 7724 TJA,B,C,D,G,H

Interval	Installed	Required	Procedure
C	9	0	**(O) (P)**

Maybe inoperative.

OPERATIONS (O)

1. Prior to flight, the P-i-C must brief cabin crew members in order to be able to communicate/order passenger in lavatory and remind restriction of using lavatory.
2. Prior to use of those lavatories, cabin crewmembers should brief the lavatory occupant(s)/passengers to leave the lavatory when someone knocking at the door for three times and twice.

23-31-01 Passenger Address System (Passenger)

23-31-01-02 Lavatory Speakers

23-31-01-02B Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
C	10	0	**(O) (P)**

Maybe inoperative.

OPERATIONS (O)

1. Prior to flight, the P-i-C must brief cabin crew members in order to be able to communicate/order passenger in lavatory and remind restriction of using lavatory.
2. Prior to use of those lavatories, cabin crewmembers should brief the lavatory occupant(s)/passengers to leave the lavatory when someone knocking at the door for three times and twice.

23-31-01 Passenger Address System (Passenger)

23-31-01-02 Lavatory Speakers

TKA to TKF **23-31-01-02C Cabin Version 7732**

Interval	Installed	Required	Procedure
C	13	0	**(O) (P)**

Maybe inoperative.

OPERATIONS (O)

1. Prior to flight, the P-i-C must brief cabin crew members in order to be able to communicate/order passenger in lavatory and remind restriction of using lavatory.
2. Prior to use of those lavatories, cabin crewmembers should brief the lavatory occupant(s)/passengers to leave the lavatory when someone knocking at the door for three times and twice.

23-31-01 Passenger Address System (Passenger)

23-31-01-02 Lavatory Speakers

TKK to TKR, TKU to TKZ **23-31-01-02D Cabin Version 77B1**

Interval	Installed	Required	Procedure
C	11	0	**(O) (P)**

Maybe inoperative.

OPERATIONS (O)

1. Prior to flight, the P-i-C must brief cabin crew members in order to be able to communicate/order passenger in lavatory and remind restriction of using lavatory.
2. Prior to use of those lavatories, cabin crewmembers should brief the lavatory occupant(s)/passengers to leave the lavatory when someone knocking at the door for three times and twice.

23-31-01 Passenger Address System (Passenger)

23-31-01-03 Cabin Speakers

23-31-01-03A Inoperative Speakers Not Adjacent

Interval	Installed	Required	Procedure
C	–	–	**(M) (P)**

May be inoperative provided:

a. Inoperative speakers are not adjacent to each other.

MAINTENANCE (M)

Note: Certain cabin speaker drive module faults may result in PASSENGER ADDRESS status message being displayed when the associated speakers operate normally.

1. Confirm inoperative cabin speakers are not adjacent (forward to aft).

23-31-01 Passenger Address System (Passenger)

23-31-01-03 Cabin Speakers

23-31-01-03B Inoperative Speakers Adjacent

Interval	Installed	Required	Procedure
C	–	–	**(M) (P)**

No passenger seat, cabin attendant seat or crew rest area bunk may be occupied from which passenger address system is not audible and intelligible; seat must be blocked and placarded INOPERATIVE PLEASE DO NOT USE.

MAINTENANCE (M)

Note: Certain cabin speaker drive module faults may result in PASSENGER ADDRESS status message being displayed when the associated speakers operate normally.

1. Affected seats must be blocked and placarded INOPERATIVE PLEASE DO NOT USE.

23-31-01 Passenger Address System (Passenger)

23-31-01-04 Ambient Noise Sensor (ANS) System

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

May be inoperative selected off.

OPERATIONS (O)

1. Select the ANS off using the CACP or CSCP.

23-31-01 Passenger Address System (Passenger)

23-31-01-05 Prerecorded Passenger Announcement System

23-31-01-05B Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-31-02 Prerecorded Passenger Announcement System

23-31-02B Procedures Do not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-39-01 Cabin Area Control Panels (CACP)/Cabin System Control Panels (CSCP) (Passenger)

Interval	Installed	Required	Procedure
C	3	1	**(P)**

Note: Any CACP/CSCP function that operates normally may be used.

23-41-01 Service Interphone System

23-41-01-01 Nose Gear Jack

23-41-01-01A Flight Interphone Jack Operative

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

Service interphone flight deck to ground/ground to flight deck function may be inoperative provided:

a. Nose gear flight interphone jack operates normally.

OPERATIONS (O)

1. Use flight interphone for communication with ground crew.

23-41-01 Service Interphone System

23-41-01-01 Nose Gear Jack

23-41-01-01B Flight Interphone Jack Inoperative

Interval	Installed	Required	Procedure
B	1	0	**(O) (P)**

OPERATIONS (O)

1. Use hand signals for communication with ground crew. These procedures may include any kind of 2-way handheld radio communication i.e. Walkie Talkie, mobile phone.

23-41-01 Service Interphone System

23-41-01-02 Other Than Nose Gear Jacks

Interval	Installed	Required	Procedure
D	13	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-42-01 Cabin Interphone Systems (Passenger)

23-42-01-01 Flight Deck to Cabin, Cabin to Flight Deck, Functions

Interval	Installed	Required	Procedure
B	–	–	**(O) (P)**

May be inoperative provided:

a. Flight deck to cabin and cabin to flight deck interphone functions operate normally on at least fifty percent of the cabin handsets.

b. Flight deck to cabin and cabin to flight deck interphone functions operate normally on at least one handset per exit door pair.

Note: Any cabin interphone function that operates normally may be used

MAINTENANCE NOTE

1. Dispatch relief for cabin interphone equipment associated with the observer seats is in MEL Item 25-11-02.

OPERATIONS (O)

1. Prior to flight, the P-i-C must brief cabin crewmembers on the alternate emergency procedures that will be used.
2. Use PA to establish communications with cabin crewmembers

23-42-01 Cabin Interphone Systems (Passenger)

23-42-01-02 Cabin to Cabin Functions

Interval	Installed	Required	Procedure
B	–	–	**(O) (P)**

May be inoperative provided:

a. Cabin to cabin interphone functions operate normally on at least fifty percent of the cabin handsets.

b. Cabin to cabin interphone functions operate normally on at least one handset per exit door pair.

Note: Any cabin interphone function that operates normally may be used.

OPERATIONS (O)

1. Prior to flight, the P-i-C must brief cabin crew members on the alternate emergency procedures that will be used.
2. Use PA to establish communications with cabin crew members

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23-42-01 Cabin Interphone Systems (Passenger)

23-42-01-03 Flight Deck/Cabin to Crew Rest, Crew Rest to Flight Deck/Cabin, Functions

TJR to TJW, TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
B	–	0	**(O) (P)**

Note: Any cabin interphone function that operates normally may be used.

OPERATIONS (O)

1. Use Passenger Address or other available means for communications.

23-42-01 Cabin Interphone Systems (Passenger)

23-42-01-04 Cabin Interphone Controller Modes

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

One may be inoperative provided:

a. Operating controller mode is selected.

MAINTENANCE (M)

Select operating controller (AMM 23-00-00/901)

1. Position the Attendant Switch Panel (ASP) CI NORM/ALT switch to ALT.
2. Confirm the CABIN INTERPHONE status message is not displayed.

DELETION

23-42-02 Cabin Interphone Alerting Systems (Passenger)

23-42-02-01 Flight Deck Call System

23-42-02-01-01 Flight Deck Call Lights and EICAS Messages

Interval	Installed	Required	Procedure
B	4	0	**(O) (P)**

May be inoperative provided:

a. Flight deck chime operates normally.

b. Cabin crew are briefed before flight of an alternate procedure to differentiate between normal and emergency calls.

OPERATIONS (O)

1. Inform cabin crew of the following procedure:
   A. For normal calls, dial 31 once.
   B. For emergency calls, dial ** three times in a row. High-low chime will sound in the flight deck three times.
2. Whenever there are high-low chimes three or more times in a row, consider it as an emergency call from cabin crew.

23-42-02 Cabin Interphone Alerting Systems (Passenger)

23-42-02-01 Flight Deck Call System

23-42-02-01-02 Flight Deck Call Chime

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

May be inoperative provided:

a. Flight deck call lights and EICAS messages operate normally.

DELETION

23-42-02 Cabin Interphone Alerting Systems (Passenger)

23-42-02-02 Flight Attendant Call Lights

23-42-02-02A Passenger Address (PA) System Operative

Interval	Installed	Required	Procedure
B	–	0	**(O) (P)**

May be inoperative provided:

a. PA system operates normally.

Notes: 1. Passenger to attendant call system is considered a Non-Essential Equipment and Furnishings (NEF) item.

2. Any visual alerting system function that operates normally may be used.

OPERATIONS (O)

1. Use PA to establish communications with cabin crew.

23-42-02 Cabin Interphone Alerting Systems (Passenger)

23-42-02-02 Flight Attendant Call Lights

23-42-02-02B Flight Attendant Chime Operative

Interval	Installed	Required	Procedure
B	–	0	**(O) (P)**

May be inoperative provided:

a. Flight attendant chime operates normally.

b. Cabin crew are briefed before flight of an alternate procedure.

Notes: 1. Passenger to attendant call system is considered a Non-Essential Equipment and Furnishings (NEF) item.

2. Any visual alerting system function that operates normally may be used.

OPERATIONS (O)

1. Before flight, brief all crew that calls among stations and calls from flight deck to affected station(s) should be made by dialling twice to differentiate calls from other cabin indications.

DELETION

23-42-02 Cabin Interphone Alerting Systems (Passenger)

23-42-02-03 Flight Attendant Chime

23-42-02-03A Passenger Address (PA) System Operative

Interval	Installed	Required	Procedure
B	1	0	**(O) (P)**

May be inoperative provided:

a. PA system operates normally.

Notes: 1. Passenger to attendant call system is considered a Non-Essential Equipment and Furnishings (NEF) item.

2. Any visual alerting system function that operates normally may be used.

OPERATIONS (O)

1. Use PA to establish communications with cabin crewmembers.

23-42-02 Cabin Interphone Alerting Systems (Passenger)

23-42-02-03 Flight Attendant Chime

23-42-02-03B Flight Attendant Call Lights Operative

Interval	Installed	Required	Procedure
B	1	0	**(O) (P)**

May be inoperative provided:

a. Flight attendant chime operates normally.

b. Cabin crew are briefed before flight of an alternate procedure.

Notes: 1. Passenger to attendant call system is considered a Non-Essential Equipment and Furnishings (NEF) item.

2. Any audio alerting system function that operates normally may be used.

OPERATIONS (O)

1. Advise cabin crew to notice call lights during flight.

23-42-02 Cabin Interphone Alerting Systems (Passenger)

23-42-02-04 Crew Rest Call Lights/Chimes Systems

TJR to TJW, TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
B	–	0	**(O) (P)**

May be inoperative provided:

a. Associated crew rest cabin interphone handset system operates normally.

Note: Any alerting system function that operates normally may be used.

OPERATIONS (O)

1. Use PA to establish communication with crew rest occupants.

23-42-03 Cabin Interphone Handset Systems (Passenger)

23-42-03-01 Flight Deck

23-42-03-01A Require by Procedures

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

May be inoperative provided:

a. Flight deck to cabin communication operates normally.

OPERATIONS (O)

1. Use headset boom microphone/hand microphone and center DU for communication with cabin crew.

23-42-03 Cabin Interphone Handset Systems (Passenger)

23-42-03-01 Flight Deck

23-42-03-01B Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-42-03 Cabin Interphone Handset Systems (Passenger)

23-42-03-02 Cabin

TJA,B,C,D,G,H,TJR to TJW

23-42-03-02A Cabin Version 7724 & 77E1

Interval	Installed	Required	Procedure
B	8	4	**(O) (P)**

May be inoperative provided:

a. Fifty percent of cabin handsets operate normally.

b. One handset must operate normally at each pair of exit doors.

Notes: 1. An operative handset at an inoperative flight attendant seat shall not be counted to satisfy the fifty percent requirement.

2. Any handset function that operates normally may be used.

OPERATIONS (O)

1. Before flight, cabin crew should be informed about the status of the inoperative handsets.
2. Use the operative handset at each pair of exit doors for communications with cabin crewmembers.

23-42-03 Cabin Interphone Handset Systems (Passenger)

23-42-03-02 Cabin

23-42-03-02B Cabin Version 7732 & 77B1

TKA to TKF, TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
B	10	5	**(O) (P)**

May be inoperative provided:

a. Fifty percent of cabin handsets operate normally.
b. One handset must operate normally at each pair of exit doors.

Notes: 1. An operative handset at an inoperative flight attendant seat shall not be counted to satisfy the fifty percent requirement.

2. Any handset function that operates normally may be used.

OPERATIONS (O)

1. Before flight, cabin crew should be informed about the status of the inoperative handsets.
2. Use the operative handset at each pair of exit doors for communications with cabin crewmembers.

23-42-03 Cabin Interphone Handset Systems (Passenger)

TJR to TJW, TKK to TKR, TKU to TKZ

23-42-03-03 Crew Rests

Interval	Installed	Required	Procedure
C	3	0	**(O) (P)**

OPERATIONS (O)

1. Before flight, cabin crew should be informed.
2. Use PA to establish communications with cabin crew.

23-43-01 Ground Crew Call System

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

OPERATIONS (O)

Note: An inoperative ground crew call horn will not annunciate loss of equipment cooling or when the inertial reference system is operating on battery power.

An inoperative ground crew call horn will not annunciate loss of EE-Cooling or Inertial Reference Unit operating on DC power.

1. Monitor the operation of EE Cooling System in the flight deck and make sure the EICAS message EQUIPMENT COOLING does not appear.
2. Establish communication with ground crew during ground operations to ensure corrective actions can be made in case of EE cooling system failure.

23-51-01 Flight Interphone System

23-51-01-01 Nose Gear Jack

23-51-01-01A Service Interphone Jack Operative

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

Flight interphone flight deck to ground/ground to flight deck function may be provided:

a. Nose gear service interphone jack operates normally.

OPERATIONS (O)

1. Use service interphone for communication with ground crew during ground handling operations.

23-51-01 Flight Interphone System

23-51-01-01 Nose Gear Jack

23-51-01-01B Service Interphone Jack Inoperative

Interval	Installed	Required	Procedure
B	1	0	**(O) (P)**

OPERATIONS (O)

1. Use hand signals for communication with ground crew. These procedures may include any kind of 2-way handheld radio communication i.e. Walkie Talkie, mobile phone.

23-51-01 Flight Interphone System

23-51-01-02 Main Equipment Center (MEC) Jacks

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-51-02 Flight Deck Speakers

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

May be inoperative provided:

a. Procedures do not require their use.

b. Associated headset earphones or headphones are installed and operate normally.

23-51-03 Flight Deck Hand Microphones

23-51-03A Boom Microphone Operative

Interval	Installed	Required	Procedure
C	3	0	**(P)**

May be inoperative or missing provided:

a. Associated boom microphone operates normally.

23-51-03 Flight Deck Hand Microphones

23-51-03B Procedures Do Not Rquire Use

Interval	Installed	Required	Procedure
D	3	0	**(P)**

May be inoperative or missing provided:

a. Procedures do not require their use.

23-51-04 Flight Deck Headsets/Headphones

Interval	Installed	Required	Procedure
D	3	–	**(P)**

Any in excess of those required for flight crew members (including official observer in forward observer seat) may be inoperative.

23-51-04 Flight Deck Headsets/Headphones

23-51-04-01 Headset Boom Microphones

Interval	Installed	Required	Procedure
A	3	0	**(P)**

May be inoperative provided:

a. Associated hand microphone is installed and operates normally.

b. Repairs are made within three flight days.

23-51-04 Flight Deck Headsets/Headphones

23-51-04-02 Headset Earphones/Headphones

Interval	Installed	Required	Procedure
C	3	1	**(P)**

Either Captain's or First Officer's earphone/headphones may be inoperative provided:

a. Associated flight deck speaker operates normally.

23-51-04 Flight Deck Headsets/Headphones

23-51-04-02 Headset Earphones/Headphones

23-51-04-02-01 Active Noise Canceling/Reduction Function

Interval	Installed	Required	Procedure
D	–	0	**(P)**

May be inoperative provided:

a. Normal audio function operates normally.

23-51-05 Audio Control Panels

23-51-05-01 Captain's Audio Control Panel

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

May be inoperative provided:

a. First observer's audio control panel operates normally.

Note: Any function that operates normally may be used.

MAINTENANCE NOTE

1. The Audio Control Panels (ACP) are interchangeable.

OPERATIONS (O)

1. The captain must use the first observer ACP. Position aft aisle stand Observer Audio (OBS AUDIO) selector CAPT.

23-51-05 Audio Control Panels

23-51-05-02 First Observer's Audio Control Panel

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. Captain's audio control panel operates normally.

b. Repairs are made within two flight days.

Note: Any function that operates normally may be used.

MAINTENANCE NOTE

1. The Audio Control Panels (ACP) are interchangeable.

23-51-06 Microphone (MIC)/Interphone Switches

23-51-06-01 Control Wheel MIC/Interphone Switches

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

One may be inoperative provided:

a. Associated audio control panel MIC/interphone switch operates normally.

b. Affected switch is deactivated open.

MAINTENANCE (M)

Deactivate the inoperative Control Wheel MIC/interphone switch, confirm it is deactivated open and verify the associated pilot's Audio Control Panel (ACP) MIC/interphone switch operates normally (AMM 23-00-00/901).

1. Deactivate the inoperative control wheel MIC/interphone switch (AMM 23-51-06/401).
   A. For Captain’s switch inoperative:
      1) Open P11 panel INTERPHONE-CAPTAIN circuit breaker.
   B. For First Officer’s switch inoperative
      1) Open P11 panel INTERPHONE-F/O circuit breaker.
   C. Remove the two screws which mount the inoperative MIC/interphone switch to the control wheel.
   D. Pull the inoperative MIC/interphone switch out of the control wheel.
   E. Disconnect, cap and stow the wires from the inoperative MIC/ interphone switch.
   F. Install the associated MIC/interphone switch in the control wheel and secure with the two screws.
   G. For Captain’s switch inoperative:
      1) Close P11 panel INTERPHONE-CAPTAIN circuit breaker.
   H. For First Officer’s switch inoperative:
      1) Close P11 panel INTERPHONE-F/O circuit breaker.
2. Confirm the inoperative Control Wheel MIC/interphone switch is deactivated open and verify the associated pilot's ACP MIC/interphone switch operates normally.
   A. Provide electrical power on the airplane (AMM 24-22-00/201).
   B. Push the FLT Transmitter Select Switch on the Captain's and F/O's ACPs and ensure the FLT MIC light is illuminated on both panels.

C. Ensure the FLT Receiver Light is illuminated and Receiver Volume Control is properly adjusted on both ACPs.

D. Speak into the associated pilot's microphone while simultaneously pushing the deactivated Control Wheel MIC/interphone switch. No transmission should be heard on the other pilot's headset.

E. Speak into the associated pilot's microphone while simultaneously pushing the associated pilot's ACP MIC switch. The transmission should be clearly heard on the other pilot's headset.

23-51-06 Microphone (MIC)/Interphone Switches

23-51-06-02 Flight Crew Audio Control Panel MIC/Interphone Switches

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

One may be inoperative provided:

a. Associated control wheel MIC/interphone switch operates normally.

b. Affected switch is verified inoperative open.

MAINTENANCE (M)

Confirm the inoperative Audio Control Panel (ACP) MIC/interphone switch is inoperative open and verify the associated pilot's Control Wheel MIC/interphone switch operates normally (AMM 23-00-00/901).

1. Provide electrical power on the airplane (AMM 24-22-00/201).
2. Push the PA Transmitter Select Switch on the associated ACP and ensure the PA MIC light is illuminated.
3. Without pressing MIC on the Control Wheel, ACP or Glareshield, speak into the associated microphone and determine if voice transmission can be heard over the passenger/personnel address (PA) system. If no voice transmission is heard, the ACP MIC/interphone switch is in the open position.
4. Speak into the associated pilot's microphone while simultaneously pushing the inoperative ACP MIC/interphone switch. No transmission should be heard on the other pilot's headset.
5. Speak into the associated pilot's microphone while simultaneously pushing the associated pilot's Control Wheel MIC/interphone switch. The transmission should be clearly heard on the other pilot's headset.

23-51-06 Microphone (MIC)/Interphone Switches

23-51-06-03 Glareshield MIC/Interphone Switches

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

May be inoperative provided:

a. The affected switch is deactivated open.

MAINTENANCE (M)

Deactivate the inoperative Glareshield MIC/interphone switch and confirm it is deactivated open (AMM 23-00-00/901).

1. Deactivate the inoperative Glareshield MIC/interphone switch.
   A. Open P11 panel INTERPHONE-CAPTAIN circuit breaker.
   B. Open P11 panel INTERPHONE-F/O circuit breaker.
   C. Remove the two screws which mount the switch panel (CLOCK/MAP/MIC) in the glareshield panel.
   D. Pull the switch panel out of the glareshield panel.
   E. Disconnect, cap and stow the wires from the MIC/interphone switch.
   F. Install the switch panel in the glareshield panel and secure with the two screws.
   G. Close P11 panel INTERPHONE-CAPTAIN circuit breaker.
   H. Close P11 panel INTERPHONE-F/O circuit breaker.
2. Confirm the inoperative Glareshield MIC/interphone switch is deactivated open.
   A. Provide electrical power on the airplane (AMM 24-22-00/201).
   B. Push the FLT Transmitter Select Switch on the Captain's and F/O's ACPs and ensure the FLT MIC light is illuminated on both panels.
   C. Ensure the FLT Receiver Light is illuminated and Receiver Volume Control is properly adjusted on both ACPs.
   D. Speak into the associated pilot's microphone while simultaneously pushing the deactivated Glareshield MIC/interphone switch. No transmission should be heard on the other pilot's headset.

23-70-01 Flight Deck Door Visual Surveillance Systems (Passenger)

23-70-01A Viewing Port Not Used

Interval	Installed	Required	Procedure
A	1	0	**(O) (P)**

May be inoperative provided:

a. Repairs are made within three flight days.

OPERATIONS (O)

1. Use interphone for flight deck entry permission and flight deck exit.

23-70-01 Flight Deck Door Visual Surveillance Systems (Passenger)

23-70-01B Viewing Port Used

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

May be inoperative provided:

a. A flight deck door viewing port is installed and operates normally.

Note: Any visual surveillance system function that operates normally may be used.

OPERATIONS (O)

1. Use flight deck door viewing port for flight deck entry permission and flight deck exit.

23-70-01 Flight Deck Door Visual Surveillance Systems (Passenger)

23-70-01C Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

23-71-01 Cockpit Voice Recorder (CVR) System

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. Flight Data Recorder (FDR) operates normally.

b. Repairs are made within three flight days.

23-93-01 Overhead Panel Bus Controllers (OPBC)

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

One OPBC may be inoperative provided:

a. The opposite Overhead Panel ARINC 629 System (OPAS) is verified to operate normally before each departure.

b. One air conditioning pack operates normally.

c. Both auto cabin pressure controls operate normally.

d. One center system hydraulic demand pump is selected ON for takeoff and landing.

e. For the left OPBC inoperative:

1) The left and right pitot and static air data modules operate normally.

2) The passenger information Signs are consider inoperative.

Note: For the left OPBC inoperative,the airplane must also be dispatched using MEL Item 33-24-01.

MAINTENANCE (M)

Notes: 1. The Generator Drive lights will be inoperative.

2. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

Verify the opposite Overhead Panel ARINC 629 System (OPAS) operates normally (AMM 23-00-00/901).

Note: The left and right OPBCs are interchangeable (AMM 23-93-01/401), the left and right PDCUs are interchangeable (AMM 23-93-03/401), and the OPICs are interchangeable (AMM 23-93-02/201).

1. For the right OPBC inoperative:

A. Verify the left system OPAS operates normally.

1) Confirm the OPBC L, PDCU L, OPIC LA1 and OPIC RA1 status messages are not displayed.

2) Open the P11 panel OPAS 1 circuit breaker and wait at least 5 seconds.

3) Close the P11 panel OPAS 1 circuit breaker and wait at least 10 seconds.

4) Confirm the OPBC L, PDCU L, OPIC LA1 and OPIC RA1 status messages are not displayed.

2. For the left OPBC inoperative:
   A. Verify the right system OPAS operates normally.
      1) Confirm the OPBC R, PDCU R, OPIC RA2 and OPIC LA2 status messages are not displayed.
      2) Open the P11 panel OPAS 2 circuit breaker and wait at least 5 seconds.
      3) Close the P11 panel OPAS 2 circuit breaker and wait at least 10 seconds.
      4) Confirm the OPBC R, PDCU R, OPIC RA2 and OPIC LA2 status messages are not displayed.

OPERATIONS (O)

DELETION

Note: The Generator Drive lights will be inoperative.

1. Routes requiring a true course reference, or flight near the North or South Poles or in latitudes greater than 82 degrees N and S (polar keyholes) should be avoided.
2. Position one center hydraulic system Demand pump ON for takeoff and landing.

   Note: Do not position center system Demand pump selector to ON before engine start.

3. For loss of the remaining OPBC, the following effects should be expected.

   Note: Most of the flight deck switch positions will not be available to the using systems and most of the annunciator lights will be inoperative.

   A. The left and right hydraulic system Demand pumps and the center hydraulic Primary pumps default to off. The center hydraulic system Demand in AUTO will default to off.
   B. HYD PRESS SYS C, HYD PRESS DEM L, HYD PRESS DEM R, SPOILERS and NO AUTOLAND alerting messages will be displayed.
   C. Position one center hydraulic system Demand pump ON.
   D. HYD PRESS DEM L, HYD PRESS DEM R, HYD PRESS PRI C1, HYD PRESS PRI C2 and HYD PRESS DEM C2 (if C1 selected ON) alerting messages will be displayed.
   E. The Display Select Panel will be inoperative. Use the CDU to select displays as required.
   F. True heading/track cannot be flown outside of the polar keyholes. Autopilot roll modes other than LNAV cannot be flown in the polar keyholes.

G. The Cursor Control Device (CCD) Cursor Location lights will be inoperative.

H. Electronic Checklist closed loop items with input from OPAS will require override.

I. Master Brightness (MASTER BRIGHT) is not available for the primary displays and CDUs.

J. The air conditioning system target temperature will default to 23 degrees C and all four Recirculation Fans will be off.

K. All synoptic displays may have missing or incomplete information.

L. The fuel jettison system is inoperative.

M. Predictive windshear system warning and caution alerts will be inoperative.

N. The Landing Altitude (LDG ALT) selector will be inoperative.

O. The Landing Light switches will be inoperative.

23-93-02 Overhead Panel Interface Cards (OPIC)

23-93-02A ADPs Operative

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

One may be inoperative provided:

a. One air conditioning pack operates normally.

b. Both center system hydraulic demand pumps operate normally.

MAINTENANCE NOTE

For a pack to be operating normally, certain items associated with that system must be operative. See MEL item 21-51-01 for a listing of those items.

1. For OPIC LA1 status message displayed, the left hydraulic system Primary pump FAULT light, the center hydraulic system Primary C1 pump FAULT light and the passenger oxygen ON light will be inoperative.
2. For OPIC LA2 status message displayed, the center hydraulic system Demand C1 pump FAULT light and the right hydraulic system Demand pump FAULT light will be inoperative.
3. For OPIC RA1 status message displayed, the left hydraulic system Demand pump FAULT light, the center hydraulic system Primary C2 pump FAULT light and ram air turbine UNLKD light will be inoperative.
4. For OPIC RA2 status message displayed, the right hydraulic system Primary pump FAULT light and center hydraulic system Demand C2 FAULT light will be inoperative.

23-93-02 Overhead Panel Interface Cards (OPIC)

23-93-02B ADP Inoperative

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

One may be inoperative provided:

a. One air conditioning pack operates normally.

b. One center system hydraulic demand pump is selected ON for takeoff and landing.

MAINTENANCE NOTE

For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

1. For OPIC LA1 status message displayed, the left hydraulic system Primary pump FAULT light, the center hydraulic system Primary C1 pump FAULT light and the passenger oxygen ON light will be inoperative.
2. For OPIC LA2 status message displayed, the center hydraulic system Demand C1 pump FAULT light and the right hydraulic system Demand pump FAULT light will be inoperative.
3. For OPIC RA1 status message displayed, the left hydraulic system Demand pump FAULT light, the center hydraulic system Primary C2 pump FAULT light and ram air turbine UNLKD light will be inoperative.
4. For OPIC RA2 status message displayed, the right hydraulic system Primary pump FAULT light and center hydraulic system Demand C2 FAULT light will be inoperative.

OPERATIONS NOTE

1. Position one center hydraulic system Demand pump selector ON for takeoff and landing.

   Notes: 1. Do not position center system Demand pump selector ON before engine start.

   2. To reduce noise, center system Demand pump may be positioned OFF for the other phases of flight.

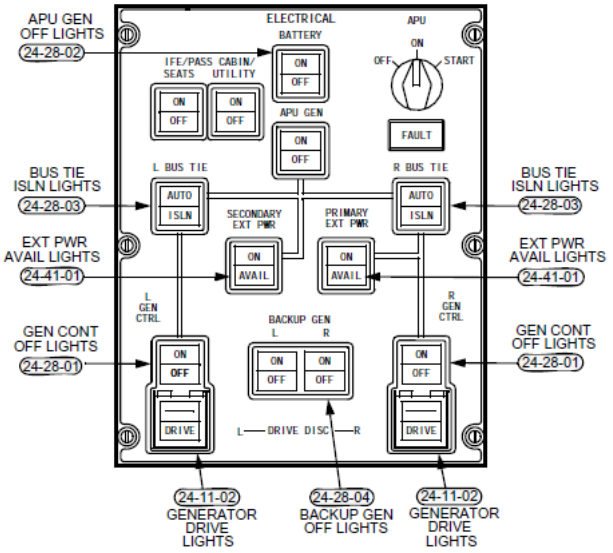
23-93-03 Panel Data Concentrator Units (PDCU)

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

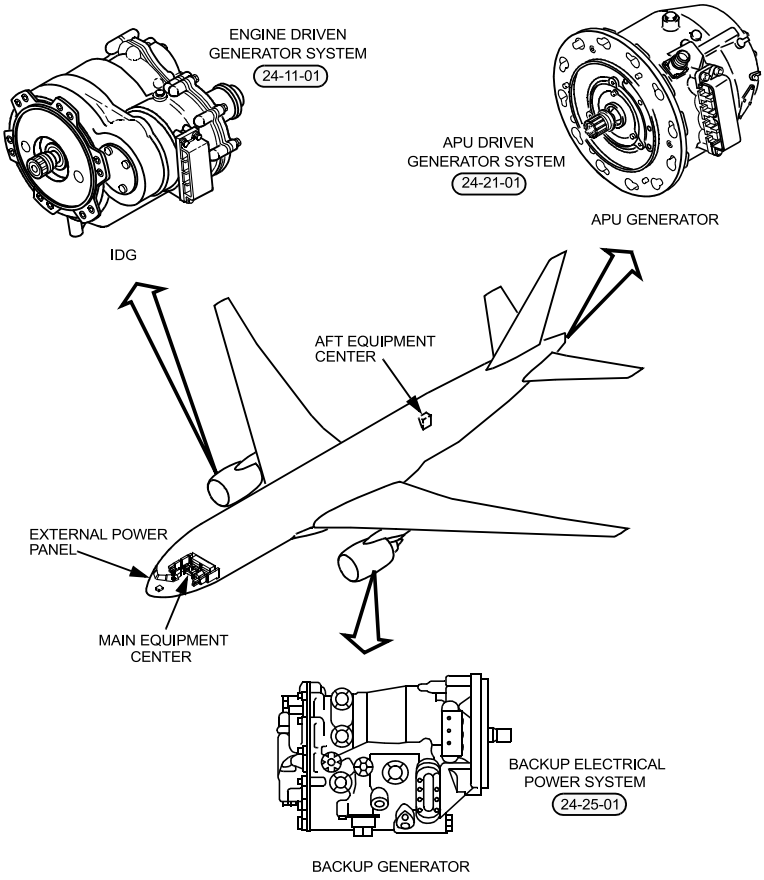
ELECTRICAL POWER

General Locations

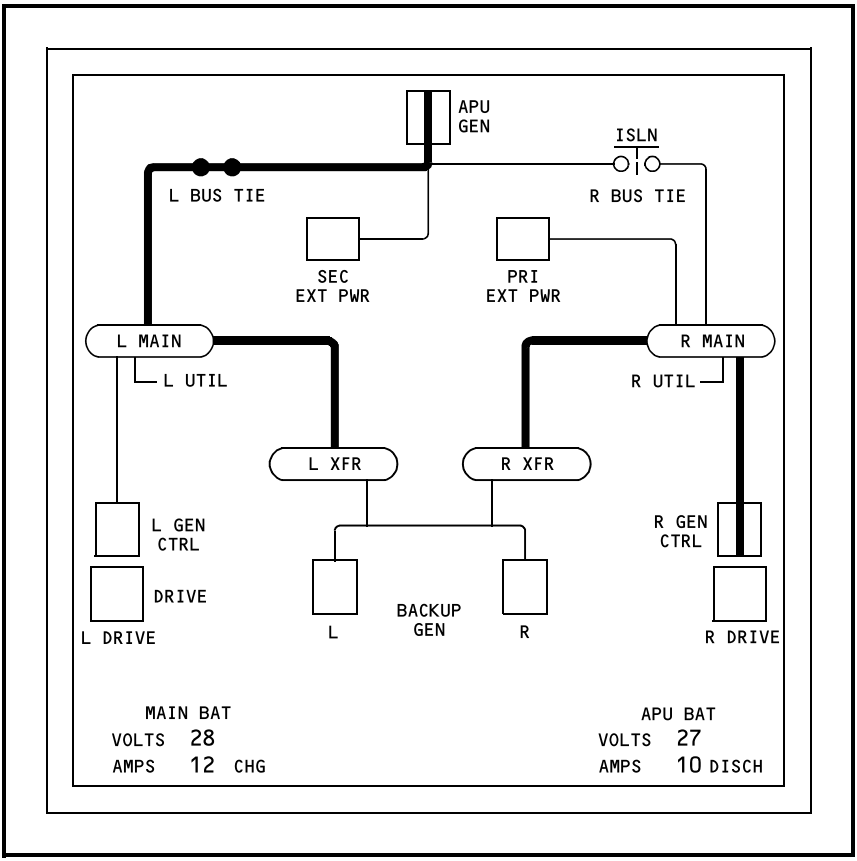
For CABIN/UTILITY Switch installed:



ELECTRICAL CONTROL PANEL (P5)



ELECTRICAL POWER SYSTEM COMPONENTS



ELECTRICAL SYNOPTIC DISPLAY

24-00-01

24-00-01 Electrical Synoptic Display

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

OPERATIONS NOTE

1. For missing data on the Synoptic Display, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) 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.

24-00-02 IFE/PASS SEATS Power Switch Lights (Passenger)

24-00-02-01 OFF Light

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

24-00-02 IFE/PASS SEATS Power Switch Lights (Passenger)

24-00-02-02 ON Light

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

24-09-01 Electrical Load Management System (ELMS) Power Management Channels

Interval	Installed	Required	Procedure
C	6	3	**(M) (P)**

One channel in each ELMS power management panel may be inoperative provided:

a. The remaining channel in the associated panel is verified to operate normally before the first flight of each day.

MAINTENANCE (M)

Note: For P310 panel single channel operation, one half of the refueling valves may be inoperative and the time to refuel may be increased.

Verify the remaining channel in the associated panel is operating normally before the first flight of each day (AMM 24-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Manually initiate self-test to verify associated ELMS panel operates normally (AMM 24-09-00/501).
3. Verify the ELMS P110 PANEL, ELMS P210 PANEL and ELMS P310 PANEL status messages are not displayed.

OPERATIONS NOTE

1. For some ELMS P310 faults which result in the ELMS P310 CHANNEL status message, cabin lighting may remain in the last selected setting. For these faults, changing the cabin lighting intensity at the Cabin System Control Panel or at a Cabin Area Control Panel is not possible. The regular and supplemental night lights are automatically selected on for these faults.

24-11-01 Engine Driven Generator Systems (IDG, GCB)

Interval	Installed	Required	Procedure
B	2	1	**(M) (O) (P) (MV)**

One may be inoperative provided:

a. Associated IDG is disconnected.

b. APU driven generator operates normally and is used to supply buses of the inoperative channel throughout the flight.

c. All generator control units, including the APU, are verified to operate normally.

d. Backup AC power system is verified to operate normally before each departure.

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

MAINTENANCE (M)

1. Verify left, right and APU Generator Control Units (GCU) operate normally and disconnect the inoperative IDG (AMM 24-00-00/901).
   A. Start APU (AMM 49-11-00/201). Wait 60 seconds.
   B. Position Electrical panel (P5) APU GEN switch to ON and confirm OFF light extinguishes.
   C. Position Electrical panel (P5) L and R BUS TIE switches to AUTO and confirm both amber ISLN lights extinguish.
   D. Position Electrical panel (P5) L and R GEN CTRL switches to OFF and confirm both amber OFF lights illuminate.
   E. Select Electrical panel (P5) PRI EXT PWR off and confirm ON light extinguishes.
   F. Confirm the APU generator is providing power to the left and right main AC busses.
      1) On Electrical Maintenance page 1/2, confirm the only AC electrical source with a Load readout greater than 0.0 is the APU generator.
      2) On Electrical Maintenance page 2/2, confirm the AC power for both L and R Main Busses is ON.
      3) Confirm the ELEC AC BUS L and ELEC AC BUS R caution messages are not displayed.
   G. Position Electrical Panel (P5) L BUS TIE switch to ISLN and confirm amber ISLN light illuminates and ELEC AC BUS L caution message is displayed.

H. Position Electrical Panel (P5) L BUS TIE switch to AUTO and confirm amber ISLN light extinguishes and ELEC AC BUS L caution message is not displayed.

I. Position Electrical Panel (P5) R BUS TIE switch to ISLN and confirm amber ISLN light illuminates and ELEC AC BUS R caution message is displayed.

J. Position Electrical Panel (P5) R BUS TIE switch to AUTO and confirm amber ISLN light extinguishes and ELEC AC BUS R caution message is not displayed.

K. Position operative Electrical Panel (P5) GEN CTRL switch to ON.

2. Disconnect the inoperative IDG.

Notes: 1. During the authorized repair interval, if the associated engine is operated for more than 50 hours with the IDG disconnected, then the IDG should be removed for shop inspection prior to returning the airplane to service.

2. To prevent oil loss, cap the IDG/AGB seal pad drain if oil leakage beyond AMM allowable limits is observed from the engine drain mast, IDG/AGB drain port (AMM 71-71-00/601) TKK to TKR, TKU to TKZ

A. On Electrical Maintenance page 1/2, confirm the Oil Level for the associated IDG is NORMAL.

Note: The oil level can also be checked by viewing the IDG oil level sightglass.

B. On Electrical Maintenance page 1/2, confirm the oil filter status for the backup generators is NORMAL.

C. Start associated engine (AMM .71-00-00/210).

D. When engine is at idle or higher, push and release Electrical Panel (P5) associated generator DRIVE DISC switch and confirm Electrical Panel (P5) associated generator DRIVE light is illuminated.

E. Shut down associated engine (AMM 71-00-00/201).

OPERATIONS (O)

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. Adjust flight planning fuel as follows:
   A. Increase flight planning fuel by 2.5% to account for the open APU air inlet door.
   B. Increase flight planning fuel by 90 kg per hour of APU usage inflight and 240 kg per hour of APU usage on the ground.
3. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

4. Start the APU before departure and operate the APU continuously supplying the main AC bus associated with the inoperative IDG for the entire flight.

24-11-01 Engine Driven Generator Systems (IDG, GCB)

24-11-01-01 GEN CTRL Switch Lights

24-11-01-01-01 OFF Lights

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

24-11-01 Engine Driven Generator Systems (IDG, GCB)

24-11-01-01 GEN CTRL Switch Lights

24-11-01-01-02 ON Lights

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

24-11-01 Engine Driven Generator Systems (IDG, GCB)

24-11-01-02 DRIVE DISC Switch DRIVE Lights

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

24-11-02 Integrated Drive Generator (IDG) Oil Pressure Indication Systems

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

MAINTENANCE NOTE

1. To determine if the associated ELEC GEN DRIVE L or R advisory message is available, review the Electrical Synoptic page. For amber DRIVE indication displayed, the associated ELEC GEN DRIVE L or R advisory message will be operative. For amber DRIVE indication not displayed, the associated ELEC GEN DRIVE L or R advisory message will be inoperative.

24-21-01 APU Driven Generator System (Generator, AGCU, APB)

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Procedures do not require use of the APU for electrical power.
b. Auxiliary Power Breaker (APB) remains open.
c. Both engine driven generator systems operate normally.
d. Backup AC power system is verified to operate normally before each departure.
e. Flight remains within 180 minutes of landing at a suitable airport.

Note: APU may be used as a pneumatic source.

MAINTENANCE (M)

1. Position Electrical Panel (P5) APU GEN switch OFF (AMM 24-00-00/901).

OPERATIONS (O)

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU electrical availability.

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS

2. Set APU GEN switch OFF.
3. The flight must remain within 180 minutes of landing at a suitable airport.
4. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

24-21-01 **APU Driven Generator System (Generator, AGCU, APB)**

24-21-01-01 **APU GEN Switch Lights**

24-21-01-01-01 **OFF Light**

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

24-21-01 **APU Driven Generator System (Generator, AGCU, APB)**

24-21-01-01 **APU GEN Switch Lights**

24-21-01-01-02 **ON Light**

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

24-22-01 Relays - AC

24-22-01-01 Ground Handling

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

May be inoperative provided:

a. The equipment on the Ground Handling Bus is deactivated before each departure.

MAINTENANCE (M)

Deactivate the equipment on the Ground Handling Bus before each departure (AMM 24-00-00/901).

Note: Any ground handling bus function that operates normally may be used on the ground. If the ground handling bus can be powered by a power source, it is acceptable to close the circuit breakers on the ground.

1. Open and collar the P300 panel CARGO HDLG AFT COMPT L circuit breaker.
2. Open and collar the P300 panel CARGO HDLG AFT COMPT R circuit breaker.
3. Open and collar the P300 panel CARGO HDLG FWD COMPT L circuit breaker.
4. Open and collar the P300 panel CARGO HDLG FWD COMPT R circuit breaker.
5. Open and collar the P300 panel GND HDLG AC BUS DISTR P320 circuit breaker.

24-22-01 Relays - AC

24-22-01-02 Ground Service Select

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

Control of the relay may be inoperative provided:

a. The relay remains in the engine running position.

MAINTENANCE (M)

Verify the Ground Service Select Relay is in the engine running position (AMM 24-00-00/901).

1. Position the Attendant Switch Panel (ASP) GROUND SERVICE switch to off.
2. Verify the inoperative relay is in the engine running position using secondary external power, or by operating an engine.
   A. For using secondary external power:
      1) Supply secondary external electrical power (AMM 24-22-00/201).
         a. Position Electrical Panel (P5) BATTERY switch ON.
         b. Apply secondary external power.
      2) For APU running:
         a. Position the Electrical Panel (P5) APU GEN Control switch OFF.
      3) Disconnect primary external power.

         Note: The primary external power cord must be removed from the receptacle. Selecting the Electrical Panel (P5) PRIMARY EXT PWR switch off is not sufficient.
      4) Confirm ELEC AC BUS R caution message is not displayed.
      5) On Electrical Maintenance page 2/2, confirm all GND SVC are ON.
   B. For using an engine:
      1) Start an engine (AMM 71-00-00/201).
      2) Position associated Electrical Panel (P5) GEN CTRL switch ON.
      3) For left engine started:
         a. Position Electrical Panel (P5) L and R BUS TIE switches AUTO.
      4) For APU running:
         a. Position Electrical Panel (P5) APU GEN Control switch OFF.
      5) Disconnect primary external power.

         Note: The primary external power cord must be removed from the receptacle. Selecting the Electrical panel (P5) PRIMARY EXT PWR switch off is not sufficient.
      6) Confirm ELEC AC BUS R caution message is not displayed.
      7) On Electrical Maintenance page 2/2, confirm all GND SVC are ON.
      8) Shut down the engine (AMM 71-00-00/201).

24-22-01 Relays - AC

24-22-01-03 Ground Service Transfer

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

Control of the relay may be inoperative provided:

a. The relay remains in the engine running position.

MAINTENANCE (M)

Verify the Ground Service Transfer Relay is in the engine running position (AMM 24-00-00/901).

1. Position the Attendant Switch Panel (ASP) GROUND SERVICE switch to off.
2. Verify the inoperative relay is in the engine running position using secondary external power, or by operating an engine.
   A. For using secondary external power:
      1) Supply secondary external electrical power (AMM 24-22-00/201).
         a. Position Electrical Panel (P5) BATTERY switch ON.
         b. Apply secondary external power.
      2) For APU running:
         a. Position the Electrical Panel (P5) APU GEN Control switch OFF.
      3) Disconnect primary external power.

         Note: The primary external power cord must be removed from the receptacle. Selecting the Electrical Panel (P5) PRIMARY EXT PWR switch off is not sufficient.
      4) Confirm ELEC AC BUS R caution message is not displayed.
      5) On Electrical Maintenance page 2/2, confirm all GND SVC are ON.
   B. For using an engine:
      1) Start an engine (AMM 71-00-00/201).
      2) Position associated Electrical Panel (P5) GEN CTRL switch ON.
      3) For left engine started:
         a. Position Electrical Panel (P5) L and R BUS TIE switches AUTO.
      4) For APU running:

a. Position Electrical Panel (P5) APU GEN Control switch OFF.

5) Disconnect primary external power.

Note: The primary external power cord must be removed from the receptacle. Selecting the Electrical panel (P5) PRIMARY EXT PWR switch off is not sufficient.

6) Confirm ELEC AC BUS R caution message is not displayed.

7) On Electrical Maintenance page 2/2, confirm all GND SVC are ON.

8) Shut down the engine (AMM 71-00-00/201).

24-25-01 Backup Electrical Power System (Backup Generators, Converter and CCBs)

24-25-01A Generator Installed

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

May be inoperative provided:

a. Both engine driven generators operate normally.

b. APU generator operates normally.

MAINTENANCE NOTE

1. A sheared generator shaft is indicated by associated maintenance message 24-46000 or 24-46010, and the PFCS INTERFACE status message.
2. For the PFCS INTERFACE status message displayed, the airplane must also be dispatched using MEL Item 27-02-04.
3. To prevent damage to the inoperative backup generator, confirm the generator's oil system status is normal when its associated shaft is not sheared.

   A. Confirm oil level status and oil filter status indicate NORMAL using Electrical Maintenance page 1/2.

   B. Confirm associated 24-46080 or 24-46090 maintenance message for low oil pressure is not displayed.

DELETION

Note: Backup generator P/N 757066G (S281W401-12) and P/N 762620D (S281W401-15) and earlier require compliance with Airworthiness Directive (AD) 2000-13-04. Information for various backup generator configurations, service bulletins, PRRs and AD compliance is contained in Boeing Service Letter 777-SL-24-030-A.

OPERATIONS NOTE

1. The Electrical Synoptic Display may have incomplete or missing information.
2. For ELEC BACKUP SYS advisory message displayed after engine start, confirm FLIGHT CONTROL SYS status message is not displayed.

24-25-01 Backup Electrical Power System (Backup Generators, Converter and CCBs)

24-25-01B Generator Removed

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

May be inoperative provided:

a. One backup generator is removed and an appropriate dispatch kit is installed.

b. Both engine driven generators operate normally.

c. APU generator operates normally.

Note: The airplane must also be dispatched using MEL Item 27-02-04.

MAINTENANCE (M)

Remove inoperative backup generator and install associated dispatch kit (AMM 24-00-00/901).

1. Remove the backup generator (AMM 24-25-01/401).

   Note: The PFCS INTERFACE status message will be displayed.

2. Remove the union (if installed) and check valve from the oil-in port on the removed backup generator.

3. Install dispatch kit J24011 (AMM 24-25-16/401).

   A. For GE: TKK to TKR, TKU to TKZ

      – Kit J24013.

   B. For RR: TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

      – Kit J24011.

OPERATIONS NOTE

1. The following weight and balance information is provided:

   A. Backup generator:

      1) Weight: 19.8 kg

      2) Balance Arm: 979.8 in.

   B. Dispatch kit:

      1) For GE: TKK to TKR, TKU to TKZ

         a. Weight: 6.3 kg

         b. Balance Arm: 983.6 in.

      2) For RR: TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

a. Weight: 4.2 kg
b. Balance Arm: 983.6 in.

2. The Electrical Synoptic Display may have incomplete or missing information.
3. For ELEC BACKUP SYS advisory message displayed after engine start, confirm FLIGHT CONTROL SYS status message is not displayed.

24-25-01 Backup Electrical Power System (Backup Generators, Converter and CCBs)

24-25-01-01 BACKUP GEN Switch Lights

24-25-01-01-01 OFF Lights

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

24-25-01 Backup Electrical Power System (Backup Generators, Converter and CCBs)

24-25-01-01 BACKUP GEN Switch Lights

24-25-01-01-02 ON Lights

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

24-28-01 GEN CONT OFF Lights

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to item 24-11-01-01.

24-28-02 APU GEN OFF Light

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to item 24-21-01-01-01.

24-28-03 BUS TIE Switch Lights

24-28-03-01 ISLN Lights

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

24-28-03 BUS TIE Switch Lights

24-28-03-02 AUTO Lights

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

24-28-04 BACKUP GEN OFF Lights

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to item 24-25-01-01-01.

24-31-01 APU Battery

24-31-01A APU Required

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

May be inoperative provided:

a. APU is started before departure and is operated for the entire flight.

OPERATIONS (O)

1. Increase flight planning fuel by 2.5% to account for the open APU air inlet door.
2. Increase flight planning fuel by 90 kg per hour of APU usage in flight and 240 kg per hour of APU usage on the ground.
3. Start the APU before departure and operate the APU continuously throughout the flight.

24-31-01 APU Battery

24-31-01B APU Not Required

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

May be inoperative provided:

a. Other procedures do not require use of the APU.

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

OPERATIONS (O)

1. Dispatch is not allowed if APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R

MEL Item	Associated Status Message
	ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.
3. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

24-31-01 APU Battery

24-31-01C APU Not Required, Battery Removed

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. APU battery charger is deactivated.
b. Other procedures do not require use of the APU.
c. Flight remains within 180 minutes of landing at a suitable airport.

MAINTENANCE (M)

Deactivate APU Battery Charger (AMM 24-00-00/901).

1. Open and collar P320 panel APU BATTERY CHARGER POWER circuit breaker.

OPERATIONS (O)

1. Dispatch is not allowed if APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.
3. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.
4. For -200/-200ER: -200,-200ER
   A. Weight: 46.5 kg.
   B. Balance Arm: 1950 in.
5. For -300/-300ER -300,-300ER
   A. Weight: 46.5 kg.
   B. Balance Arm: 2139 in.

24-31-02 APU Battery Charger

24-31-02A APU Required

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. APU battery charger is deactivated.

b. APU is started before departure and is operated for the entire flight.

MAINTENANCE (M)

Deactivate APU Battery Charger (AMM 24-00-00/901).

1. Open and collar P320 panel APU BATTERY CHARGER POWER circuit breaker.

OPERATIONS (O)

1. Increase flight planning fuel by 2.5% to account for the open APU air inlet door.
2. Increase flight planning fuel by 90 kg per hour of APU usage in flight and 240 kg per hour of APU usage on the ground.
3. Start the APU before departure and operate the APU continuously for the entire flight.

24-31-02 APU Battery Charger

24-31-02B APU Not Required

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative deactivated provided:

a. Procedures do not require use of the APU.

b. APU battery charger is deactivated.

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

MAINTENANCE (M)

Deactivate APU Battery Charger (AMM 24-00-00/901).

1. Open and collar P320 panel APU BATTERY CHARGER POWER circuit breaker.

OPERATIONS (O)

1. Dispatch is not allowed if APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.
3. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

24-31-03 BATTERY Switch Lights

24-31-03-01 OFF Light

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

24-31-03 BATTERY Switch Lights

24-31-03-02 ON Light

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

24-41-01 External Power Systems

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

MAINTENANCE NOTE

1. Electrical power may not be available for any of the galley complexes (AMM Sections 24-09-00 and 24-20-00).

24-41-01 External Power Systems

24-41-01-01 AVAIL Lights (Flight Deck)

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

OPERATIONS (O)

1. Use communication between ground and flight deck to verify the status of the power system connection.

24-41-01 External Power Systems

24-41-01-02 ON Lights (Flight Deck)

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

OPERATIONS (O)

1. Use communication between ground and flight deck to verify the status of the power system connection.

24-41-01 External Power Systems

24-41-01-03 External Power Connected Lights (External Power Panel)

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

OPERATIONS (O)

1. Use communication between ground and flight deck to verify the status of the power system connection.

24-41-01 External Power Systems

24-41-01-04 External Power Not In Use Lights (External Power Panel)

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

OPERATIONS (O)

1. Use communication between ground and flight deck to verify the status of the power system connection.

24-41-02 Bus Power Control Unit

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

MAINTENANCE NOTE

1. Electrical power for the Ground Handling and Ground Service Busses will not be available.

24-61-01 Ground Handling Transformer Rectifier Unit

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

EQUIPMENT/FURNISHINGS

25-11-01 Flight Crew Seats

25-11-01-01 Power Adjustment Systems

Interval	Installed	Required	Procedure
D	2	0	**(M) (P)**

May be inoperative deactivated.

MAINTENANCE (M)

Deactivate the inoperative flight crew seat power adjustment function (AMM 25-00-00/901).

1. For Captain's seat:
   A. Open and collar P110 panel CAPT SEAT circuit breaker.
2. For First Officer's seat:
   A. Open and collar P210 panel F/O SEAT circuit breaker.

25-11-01 Flight Crew Seats

25-11-01-02 Manual Adjustment Systems

25-11-01-02-01 Recline Systems

Interval	Installed	Required	Procedure
A	2	0	**(M) (P)**

May be inoperative provided:

a. Seat is secured in an upright position acceptable to the affected crewmember.
b. Repairs are made within two flight days.

MAINTENANCE (M)

1. Secure the associated seat backrest in an upright position that is acceptable to the affected flight crew member (AMM 25-00-00/901).

25-11-01 Flight Crew Seats

25-11-01-02 Manual Adjustment Systems

25-11-01-02-02 Vertical Adjustments

Interval	Installed	Required	Procedure
A	2	0	**(P)**

May be inoperative provided:

a. Seat is acceptable to affected crewmember.
b. Repairs are made within two flight days.

25-11-01 Flight Crew Seats

25-11-01-02 Manual Adjustment Systems

25-11-01-02-03 Armrests

Interval	Installed	Required	Procedure
B	4	0	**(M) (P)**

May be inoperative provided:

a. Affected armrest is stowed in the retracted position or removed.
b. Seat is acceptable to affected crewmember.

MAINTENANCE (M)

1. Remove or stow the armrest in the retracted position (AMM 21-00-00/901).

25-11-01 Flight Crew Seats

25-11-01-02 Manual Adjustment Systems

25-11-01-02-04 Lumbar/Thigh Supports

Interval	Installed	Required	Procedure
C	4	0	**(P)**

May be inoperative provided:

a. Seat is acceptable to the affected crewmember.

25-11-01 Flight Crew Seats

25-11-01-02 Manual Adjustment Systems

25-11-01-02-05 Headrests

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

May be inoperative provided:

a. Seat is acceptable to the affected crewmember.

25-11-02 Observer Seat(s)

25-11-02-01 First Observer Seat (Including Associated Equipment)

25-11-02-01A Passenger Seat Available

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. A passenger seat in the passenger cabin is made available to a CAAT inspector for the performance of official duties.

b. Repairs are made within two flight days.

25-11-02 Observer Seat(s)

25-11-02-01 First Observer Seat (Including Associated Equipment)

25-11-02-01B Second Observer Seat Available

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. Second observer seat is available, and acceptable to a CAAT inspector for the performance of official duties.

b. Repairs are made within two flight days.

25-11-02 Observer Seat(s)

25-11-02-01 First Observer Seat (Including Associated Equipment)

25-11-02-01C Associated Safety Equipment Acceptable

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. First observer seat is acceptable to the CAAT inspector for the performance of official duties.

b. Required minimum safety equipment (safety belt and oxygen) is available.

c. Repairs are made within two flight days.

Notes: 1. These provisos are intended to provide for occupancy of the above seats by a CAAT inspector when the minimum safety equipment (safety belt and oxygen) is functional and the inspector determines the conditions to be acceptable.

2. The Pilot-in-Command will determine if the minimum safety equipment is functional for the other persons authorized to occupy an observer seat(s).

25-11-02 Observer Seat(s)

25-11-02-02 Second Observer Seat(s) (Including Associated Equipment)

Interval	Installed	Required	Procedure
D	1	0	**(P)**

Note: The Pilot-in-Command will determine if the minimum safety equipment is functional for the other persons authorized to occupy an observer seat(s).

25-20-01 Non-Essential Equipment & Furnishings (NEF)

Interval	Installed	Required	Procedure
	–	0	

May be inoperative damaged, or missing provided:

a. The item(s) is deferred in accordance with the NEF program. Refer to NEF Program for NEF list and associated procedurres.

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

25-25-01 Flight Attendant Seat Assembly (Single or Dual Position)

25-25-01-01 Required Flight Attendant Seats (Passenger)

25-25-01-01A Passengers Carried

Interval	Installed	Required	Procedure
B	–	–	**(M) (O) (P)**

One seat position or assembly (dual position) may be inoperative provided.

a. Affected seat position or seat assembly is not occupied.

b. Flight attendant(s) displaced by inoperative seat(s) occupies either an adjacent flight attendant seat or the passenger seat which is most accessible to the inoperative seat(s), so as to most effectively perform assigned duties.

c. Folding type seat stows automatically or is secured in the retracted position.

d. Passenger seat assigned to flight attendant is placarded RESERVED.

Notes: 1. An automatic folding seat that will not stow automatically is considered inoperative.

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

3. If one side of a dual seat assembly is inoperative and a flight attendant is displaced to the adjacent seat, the adjacent seat must operate normally.

4. The number of required flight attendant seats are:
   - 777-200/-200ER: 8 seats -200,-200ER
   - 777-300/-300ER: 10 seats -300,-300ER

MAINTENANCE (M)

1. For automatic stowing inoperative:
   A. Secure seat in stowed position (AMM 25-00-00/901).

OPERATIONS (O)

1. 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 second time difference is considered "essentially the same time".

25-25-01 Flight Attendant Seat Assembly (Single or Dual Position)

25-25-01-01 Required Flight Attendant Seats (Passenger)

25-25-01-01B No Passengers Carried

Interval	Installed	Required	Procedure
C	–	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. No passengers are carried.

b. A maximum of 19 persons for non-passenger carrying operations are carried.

c. Folding type seat stows automatically or is secured in the retracted position.

d. Affected seat position or seat assembly is not occupied.

Notes: 1. An automatic folding seat that will not stow automatically is considered inoperative.

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

3. The number of required flight attendant seats are:

-200,-200ER
- 777-200/-200ER: 8 seats

-300,-300ER
- 777-300/-300ER: 10 seats

MAINTENANCE (M)

For automatic stowing inoperative

1. Secure seat in stowed position (AMM 25-00-00/901).

OPERATIONS (O)

1. No passengers may be carried.
2. A maximum of 19 persons (crewmember, company employee, or inspector performing official duties) may be carried.
3. Affected flight attendant(s) must be seated on the passenger seat(s) closest to the assigned exit(s).
4. Prior to flight, the Pilot-in-Command must ensurre all occupants are briefed en the emergency procedures that will be used.

25-25-01 Flight Attendant Seat Assembly (Single or Dual Position)

25-25-01-02 Excess Flight Attendant Seats

25-25-01-02A Cabin Version 7724 & 7732 TJA,B,C,D,G,H,TKA to TKF

Interval	Installed	Required	Procedure
C	8	–	**(M) (P)**

May be inoperative provided:

a. Affected seat position or seat assembly is not occupied.

b. Folding type seat stows automatically or is secured in the retracted position.

Notes: 1. An automatic folding seat that will not stow automatically is considered inoperative.

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

MAINTENANCE (M)

1. For automatic stowing inoperative:

A. Secure seat in stowed position (AMM 25-00-00/901).

25-25-01 Flight Attendant Seat Assembly (Single or Dual Position)

25-25-01-02 Excess Flight Attendant Seats

25-25-01-02B Cabin Version 77E1 & 77B1 TJR to TJW,TKK to TKR,TKU to TKZ

Interval	Installed	Required	Procedure
C	6	–	**(M) (P)**

May be inoperative provided:

a. Affected seat position or seat assembly is not occupied.

b. Folding type seat stows automatically or is secured in the retracted position.

Notes: 1. An automatic folding seat that will not stow automatically is considered inoperative.

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

MAINTENANCE (M)

1. For automatic stowing inoperative:
   A. Secure seat in stowed position (AMM 25-00-00/901).

25-25-02 Passenger Seats (Passenger)

Interval	Installed	Required	Procedure
D	–	–	**(M) (P) (MV)**

May be inoperative provided:

a. Seat does not block an emergency exit.

b. Seat does not restrict any passenger from access to the main airplane aisle.

c. Affected seat(s) is blocked and placarded INOPERATIVE PLEASE DO NOT USE.

Notes: 1. A seat with an inoperative or missing seat belt is considered inoperative.

2. Inoperative seats do not affect the required number of flight attendants.

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

4. Number of passenger seats are as follows:

TJA,B,C,D,G,H
- Cabin versions 7724 - 309 seats

TJR to TJW
- Cabin versions 77E1 - 292 seats

TKA to TKF
- Cabin versions 7732 - 364 seats

TKK to TKR, TKU to TKZ
- Cabin versions 77B1 - 348 seats

MAINTENANCE (M)

1. Block the affected seat (AMM 25-00-00/901).

25-25-02 Passenger Seats (Passenger)

25-25-02-01 Recline Mechanism

25-25-02-01A Seat Secured Up-Right

Interval	Installed	Required	Procedure
C	–	–	**(M) (P) (MV)**

May be inoperative and seat occupied provided:

a. Seat is secured in the up-right position.

Note: Refer to MEL Item 25-25-02 for number of equipment installed.

MAINTENANCE (M)

1. Secure the associated seat in the upright position (AMM 25-00-00/901).

25-25-02 Passenger Seats (Passenger)

25-25-02-01 Recline Mechanism

25-25-02-01B Immovable Seat Back

Interval	Installed	Required	Procedure
D	–	–	**(P)**

May be inoperative and seat occupied provided:

a. Seat back is immovable in the full up-right position.

Note: Refer to MEL Item 25-25-02 for number of equipment installed.

25-25-02 Passenger Seats (Passenger)

25-25-02-02 Underseat Baggage Restraining Bars

TJA,B,C,D,G,H **25-25-02-02A Cabin Version 7724**

Interval	Installed	Required	Procedure
C	279	–	**(O) (P)**

May be inoperative provided:

a. Baggage is not stowed under seat with inoperative restraining bar.

b. Cabin crew must be informed of inoperative restraining bar.

OPERATIONS (O)

1. Cabin crew must ensure baggage is not stowed under seat with inoperative restraining bar.

25-25-02 Passenger Seats (Passenger)

25-25-02-02 Underseat Baggage Restraining Bars

25-25-02-02B Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
C	262	–	**(O) (P)**

May be inoperative provided:

a. Baggage is not stowed under seat with inoperative restraining bar.
b. Cabin crew must be informed of inoperative restraining bar.

OPERATIONS (O)

1. Cabin crew must ensure baggage is not stowed under seat with inoperative restraining bar.

25-25-02 Passenger Seats (Passenger)

25-25-02-02 Underseat Baggage Restraining Bars

25-25-02-02C Cabin Version 7732 TKA to TKF

Interval	Installed	Required	Procedure
C	330	–	**(O) (P)**

May be inoperative provided:

a. Baggage is not stowed under seat with inoperative restraining bar.
b. Cabin crew must be informed of inoperative restraining bar.

OPERATIONS (O)

1. Cabin crew must ensure baggage is not stowed under seat with inoperative restraining bar.

25-25-02 Passenger Seats (Passenger)

25-25-02-02 Underseat Baggage Restraining Bars

TKK to TKR, TKU to TKZ **25-25-02-02D Cabin Version 77B1**

Interval	Installed	Required	Procedure
C	306	–	**(O) (P)**

May be inoperative provided:

a. Baggage is not stowed under seat with inoperative restraining bar.

b. Cabin crew must be informed of inoperative restraining bar.

OPERATIONS (O)

1. Cabin crew must ensure baggage is not stowed under seat with inoperative restraining bar.

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-01 Armrest With Recline Mechanism

TJA,B,C,D,G, H **25-25-02-03-01A Cabin Version 7724**

Interval	Installed	Required	Procedure
C	235	–	**(M) (P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

c. If armrest is missing, seat is secured in the upright position.

MAINTENANCE (M)

1. If required, secure the associated seat in the upright position (AMM 25-00-00/901).

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-01 Armrest With Recline Mechanism

25-25-02-03-01B Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
C	272	–	**(M) (P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

c. If armrest is missing, seat is secured in the upright position.

MAINTENANCE (M)

1. If required, secure the associated seat in the upright position (AMM 25-00-00/901).

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-01 Armrest With Recline Mechanism

25-25-02-03-01C Cabin Version 7732 TKA to TKF

Interval	Installed	Required	Procedure
C	330	–	**(M) (P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

c. If armrest is missing, seat is secured in the upright position.

MAINTENANCE (M)

1. If required, secure the associated seat in the upright position (AMM 25-00-00/901).

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-01 Armrest With Recline Mechanism

TKK to TKR, TKU to TKZ

25-25-02-03-01D Cabin Version 77B1

Interval	Installed	Required	Procedure
C	308	–	**(M) (P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

c. If armrest is missing, seat is secured in the upright position.

MAINTENANCE (M)

1. If required, secure the associated seat in the upright position (AMM 25-00-00/901).

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-02 Armrest Without Recline Mechanism

TJA,B,C,D,G, H

25-25-02-03-02A Cabin Version 7724

Interval	Installed	Required	Procedure
D	170	–	**(P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-02 Armrest Without Recline Mechanism

25-25-02-03-02B Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
D	108	–	**(P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-02 Armrest Without Recline Mechanism

25-25-02-03-02C Cabin Version 7732 TKA to TKF

Interval	Installed	Required	Procedure
D	149	–	**(P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

25-25-02 Passenger Seats (Passenger)

25-25-02-03 Arm Rests

25-25-02-03-02 Armrest Without Recline Mechanism

TKK to TKR, TKU to TKZ

25-25-02-03-02D Cabin Version 77B1

Interval	Installed	Required	Procedure
D	144	–	**(P)**

May be inoperative or missing and seat occupied provided:

a. Armrest does not block an Emergency Exit.

b. Armrest does not restrict any passenger from access to the main airplane aisle.

25-25-02 Passenger Seats (Passenger)

25-25-02-04 Taxi/Takeoff/Landing (TTL) Lights on C Class Seat

TJA,B,C,D,G, H

25-25-02-04A Cabin Version 7724

Interval	Installed	Required	Procedure
C	30	–	**(O) (P)**

May be inoperative provided:

a. Associated seat recline mechanism is verified to operate normally and seat back can be moved to and remain in the upright position.

b. Affected seat is placarded in a manner that is clearly visible to cabin crew.

c. Affected seat back is in the upright position for taxi, takeoff and landing.

OPERATIONS (O)

1. Coordinate with cabin crew to ensure that the seat back is in the upright position for taxi, takeoff and landing.

25-25-02 Passenger Seats (Passenger)

25-25-02-04 Taxi/Takeoff/Landing (TTL) Lights on C Class Seat

25-25-02-04B Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
C	30	–	**(O) (P)**

May be inoperative provided:

a. Associated seat recline mechanism is verified to operate normally and seat back can be moved to and remain in the upright position.

b. Affected seat is placarded in a manner that is clearly visible to cabin crew.

c. Affected seat back is in the upright position for taxi, takeoff and landing.

OPERATIONS (O)

1. Coordinate with cabin crew to ensure that the seat back is in the upright position for taxi, takeoff and landing.

25-25-02 Passenger Seats (Passenger)

25-25-02-04 Taxi/Takeoff/Landing (TTL) Lights on C Class Seat

25-25-02-04C Cabin Version 7732 TKA to TKF

Interval	Installed	Required	Procedure
C	34	–	**(O) (P)**

May be inoperative provided:

a. Associated seat recline mechanism is verified to operate normally and seat back can be moved to and remain in the upright position.

b. Affected seat is placarded in a manner that is clearly visible to cabin crew.

c. Affected seat back is in the upright position for taxi, takeoff and landing.

OPERATIONS (O)

1. Coordinate with cabin crew to ensure that the seat back is in the upright position for taxi, takeoff and landing.

25-25-02 Passenger Seats (Passenger)

25-25-02-04 Taxi/Takeoff/Landing (TTL) Lights on C Class Seat

TKK to TKR, TKU to TKZ

25-25-02-04D Cabin Version 77B1

Interval	Installed	Required	Procedure
C	42	–	**(O) (P)**

May be inoperative provided:

a. Associated seat recline mechanism is verified to operate normally and seat back can be moved to and remain in the upright position.

b. Affected seat is placarded in a manner that is clearly visible to cabin crew.

c. Affected seat back is in the upright position for taxi, takeoff and landing.

OPERATIONS (O)

1. Coordinate with cabin crew to ensure that the seat back is in the upright position for taxi, takeoff and landing.

25-25-04 Crew/Attendant Rest Seats

TJR to TJW, TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
D	2	0	**(M) (P) (MV)**

May be inoperative provided:

a. Seat is not occupied.

b. Affected seat(s) is blocked and placarded INOPERATIVE PLEASE DO NOT USE.

Note: A seat with an inoperative seat belt is considered inoperative.

MAINTENANCE (M)

1. Block the affected seat (AMM 25-00-00-040-810).

25-25-04 Crew/Attendant Rest Seats

TJR to TJW, TKK to TKR, TKU to TKZ

25-25-04-01 Recline Mechanism

25-25-04-01A Seat Secured Up-Right

Interval	Installed	Required	Procedure
D	2	0	**(M) (P)**

May be inoperative and seat occupied provided:

a. Seat is secured in the up-right position.

MAINTENANCE (M)

1. Secure the associated seat in the upright position (AMM 25-00-00-040-810).

TJR to TJW, TKK to TKR, TKU to TKZ

25-25-04 Crew/Attendant Rest Seats

25-25-04-01 Recline Mechanism

25-25-04-01B Immovable Seat Back

Interval	Installed	Required	Procedure
D	2	0	**(P)**

May be inoperative and seat occupied provided:

a. Seat back is immovable in the full up-right position.

TJR to TJW, TKK to TKR, TKU to TKZ

25-25-04 Crew/Attendant Rest Seats

25-25-04-02 Armrests

Interval	Installed	Required	Procedure
D	4	0	**(M) (P)**

May be inoperative provided:

a. Armrest is stowed in retracted position or removed.

MAINTENANCE (M)

1. Stow an inoperative armrest in the retracted position or remove the armrest (AMM 25-00-00-040-810).

TJR to TJW, TKK to TKR, TKU to TKZ

25-25-04 Crew/Attendant Rest Seats

25-25-04-03 Leg Rests

Interval	Installed	Required	Procedure
D	–	0	**(M) (P)**

May be inoperative and seat occupied provided:

a. Leg rest is stowed in the retracted position.

b. Seat is acceptable to the affected crewmember.

MAINTENANCE (M)

1. Stow an inoperative leg rest in the retracted position.

25-28-01 Storage Bin(s)/Cabin, Galley and Lavatory Storage Compartments/Closets

25-28-01A Secured Closed

Interval	Installed	Required	Procedure
C	–	–	**(M) (P)**

May be inoperative provided:

a. Procedures are established to secure the affected bin, compartment or closet in the closed position.

b. Associated bin, compartment or closet is prominently placarded INOPERATIVE PLEASE 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 items except for those permanently affixed.

Note: For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative.

MAINTENANCE (M)

1. Secure and placard inoperative bins, compartments or closets closed (AMM 25-00-00-040-811).

OPERATIONS NOTE

1. For emergency equipment located in affected compartment, the airplane must also be dispatched using the applicable emergency equipment MEL item.

25-28-01 Storage Bin(s)/Cabin, Galley and Lavatory Storage Compartments/Closets

25-28-01B Door Removed or Retractable Door Secured Open

Interval	Installed	Required	Procedure
C	–	–	**(M) (O) (P)**

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 INOPERATIVE PLEASE 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 to be used.

Notes: 1. For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative.

2. Any emergency equipment located in the affected bin, compartment or closet (permanently affixed) is available for use.

MAINTENANCE (M)

1. Remove affected door and placard associated bin, compartment or closet (AMM 25-00-00-040-811).

OPERATIONS (O)

1. Brief crew members and passengers that associated bin, compartment or closet is not used.

25-28-01 Storage Bin(s)/Cabin, Galley and Lavatory Storage Compartments/Closets

25-28-01-01 Multi Latch/Quarter Turn Lug Installations

Interval	Installed	Required	Procedure
C	–	–	**(P)**

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, the cart remains empty.

25-28-01 Storage Bin(s)/Cabin, Galley and Lavatory Storage Compartments/Closets

25-28-01-02 Storage Compartment Key Locks

Interval	Installed	Required	Procedure
D	–	0	**(M) (P)**

May be inoperative in the unlocked position provided:

a. Doors can be secured by other means.

MAINTENANCE (M)

1. Secure inoperative doors (AMM 25-00-00-040-811).

TJR to TJW, TKK to TKR, TKU to TKZ

25-29-03 Overhead Flight Crew/Attendant Rest Door

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

May be inoperative provided:

a. Associated crew/attendant rest is considered inoperative.

DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

DELETION

TJR to TJW, TKK to TKR, TKU to TKZ

25-29-03 Overhead Flight Crew/Attendant Rest Door

25-29-03-01 Door Lock

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

May be inoperative provided:

a. Associated OFCR/OFAR door lock is deactivated in the unlocked position.

b. Associated OFCR/OFAR door opens and closes normally.

MAINTENANCE (M)

Deactivate the OFCR/OFAR door lock in the unlocked position (AMM 25-00-00/901).

1. For keyed lock installed, the lock assembly override may be used.
2. For keyless lock installed, the lock assembly override may be used, or the lock assembly may be removed.

25-29-04 Crew/Attendant Rests (OFCR, OFAR, FCR)

TJR to TJW, TKK to TKR, TKU to TKZ

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

May be inoperative provided:

a. Associated crew/attendant rest is deactivated closed.

b. For OCFR inoperative, appropriate adjustments to flightcrew FDP times are applied.

Note: This provision is not intended to prohibit crew/attendant rest inspections by crewmembers.

MAINTENANCE (M)

Deactivate the associated crew/attendant rest closed (AMM 25-00-00/901).

1. Remove all baggage and personal items from the associated crew/attendant rest.

   Note: Blankets, pillows and other items normally used in the crew rest may remain.

2. Close the associated crew/attendant rest entrance door.

DELETION

OPERATIONS NOTE

1. The crew/attendant rest is not available for inflight use. Remove personal items and do not enter except for inspections by crewmembers.

25-29-04 Crew/Attendant Rests (OFCR, OFAR, FCR)

TJR to TJW, TKK to TKR, TKU to TKZ

25-29-04-01 Bunk

Interval	Installed	Required	Procedure
C	–	0	**(P) (MV)**

May be inoperative provided:

a. Associated bunk is not occupied.

Notes: 1. A bunk with an inoperative or missing restraint system is considered inoperative.

2. Number of bunks installed are:

   - OFCR: 2

- OFAR for each cabin version:

TJR to TJW

  - 77E1: 7

TKK to TKR, TKU to TKZ

  - 77B1: 8

25-30-01 Galley/Cabin Waste Container Access Door/Covers

TJA,B,C,D,G,H

Interval	Installed	Required	Procedure
C	3	–	**(M) (O) (P)**

May be inoperative provided:

a. Associated waste container is empty and access is secured to prevent waste introduction into the waste container.

b. Procedures are established to ensure that sufficient galley/cabin waste containers are available to accommodate all waste that may be generated on a flight.

Note: Waste carts are not included in this MEL item.

MAINTENANCE (M)

1. Empty the receptacle and secure the access door/cover in a manner that will prevent waste from being deposited in the waste compartment/receptacle (AMM 25-00-00/901).

OPERATIONS (O)

1. Fight crew should coordinate with IM/AP to ensure sufficient galley waste containers are available to accommodate all the waste that may be generated on a flight.

25-41-01 Exterior Lavatory Door Ashtrays

25-41-01-01 Passenger

TJA,B,C,D,G,H **25-41-01-01A Cabin Version 7724**

Interval	Installed	Required	Procedure
A	9	5	**(P)**

Fifty percent may be inoperative or missing provided:

a. Repair is made within 10 calendar days.

25-41-01 Exterior Lavatory Door Ashtrays

25-41-01-01 Passenger

TJR to TJW **25-41-01-01B Cabin Version 77E1**

Interval	Installed	Required	Procedure
A	10	5	**(P)**

Fifty percent may be inoperative or missing provided:

a. Repair is made within 10 calendar days.

25-41-01 Exterior Lavatory Door Ashtrays

25-41-01-01 Passenger

TKA to TKF **25-41-01-01C Cabin Version 7732**

Interval	Installed	Required	Procedure
A	13	7	**(P)**

Fifty percent may be inoperative or missing provided:

a. Repair is made within 10 calendar days.

25-41-01 Exterior Lavatory Door Ashtrays

25-41-01-01 Passenger

25-41-01-01D Cabin Version 77B1

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
A	11	6	**(P)**

Fifty percent may be inoperative or missing provided:

a. Repair is made within 10 calendar days.

25-41-02 Lavatory Waste Container Flapper/Access Doors

TJA,B,C,D,G,H **25-41-02A Cabin Version 7724**

Interval	Installed	Required	Procedure
C	9	–	**(M) (P)**

May be inoperative provided:

a. Associated waste container is empty and access is secured to prevent waste introduction into the waste container.

b. Lavatory is used only by crewmembers.

c. Associated lavatory entrance door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Empty waste container, secure container access and close and lock lavatory door (AMM 25-00-00/901).

1. Empty the associated lavatory waste receptacle.
2. Secure the flapper/access door in a manner that will prevent waste from being deposited into the receptacle.
3. Close and lock the associated lavatory door.

OPERATIONS NOTE

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

25-41-02 Lavatory Waste Container Flapper/Access Doors

TJR to TJW **25-41-02B Cabin Version 77E1**

Interval	Installed	Required	Procedure
C	10	–	**(M) (P)**

May be inoperative provided:

a. Associated waste container is empty and access is secured to prevent waste introduction into the waste container.

b. Lavatory is used only by crewmembers.

c. Associated lavatory entrance door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Empty waste container, secure container access and close and lock lavatory door (AMM 25-00-00/901).

1. Empty the associated lavatory waste receptacle.
2. Secure the flapper/access door in a manner that will prevent waste from being deposited into the receptacle.
3. Close and lock the associated lavatory door.

OPERATIONS NOTE

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

25-41-02 Lavatory Waste Container Flapper/Access Doors

25-41-02C Cabin Version 7732 TKA to TKF

Interval	Installed	Required	Procedure
C	13	–	**(M) (P)**

May be inoperative provided:

a. Associated waste container is empty and access is secured to prevent waste introduction into the waste container.

b. Lavatory is used only by crewmembers.

c. Associated lavatory entrance door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Empty waste container, secure container access and close and lock lavatory door (AMM 25-00-00/901).

1. Empty the associated lavatory waste receptacle.
2. Secure the flapper/access door in a manner that will prevent waste from being deposited into the receptacle.

3. Close and lock the associated lavatory door.

OPERATIONS NOTE

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

25-41-02 Lavatory Waste Container Flapper/Access Doors

TKK to TKR, TKU to TKZ

25-41-02D Cabin Version 77B1

Interval	Installed	Required	Procedure
C	11	–	**(M) (P)**

May be inoperative provided:

a. Associated waste container is empty and access is secured to prevent waste introduction into the waste container.

b. Lavatory is used only by crewmembers.

c. Associated lavatory entrance door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Empty waste container, secure container access and close and lock lavatory door (AMM 25-00-00/901).

1. Empty the associated lavatory waste receptacle.
2. Secure the flapper/access door in a manner that will prevent waste from being deposited into the receptacle.
3. Close and lock the associated lavatory door.

OPERATIONS NOTE

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

25-52-01 Lower Cargo Compartment Lining (Forward and Aft)

Interval	Installed	Required	Procedure
C	–	–	**(O) (P)**

May be damaged or missing provided:

a. Procedures are established and used to verify the associated cargo compartment remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

OPERATIONS (O)

1. The associated cargo compartment must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

Note: Both the aft and bulk cargo compartments must remain empty when there are damaged or missing linings in either the aft or the bulk cargo compartment.

25-53-01 Lower Cargo Handling Systems

Interval	Installed	Required	Procedure
D	2	0	**(P)**

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

25-53-02 Lower Cargo Restraint Systems

25-53-02A Cargo Compartment Used

Interval	Installed	Required	Procedure
A	–	–	**(M) (P)**

May be inoperative or missing provided:

a. Acceptable cargo loading limits from an approved source, i.e., an approved Cargo Loading Manual or Weight and Balance Manual, are observed.

b. Repairs are made prior to the completion of the next heavy maintenance visit.

MAINTENANCE (M)

1. Refer to the Weight and Balance Manual for cargo loading limits (AMM 25-00-00/901).

25-53-02 Lower Cargo Restraint Systems

25-53-02B Cargo Compartment (s) Remains Empty

Interval	Installed	Required	Procedure
C	–	–	**(P)**

May be inoperative or missing provided:

a. Associated cargo compartment remains empty.

25-63-01 Emergency Evacuation Signal System

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

OPERATIONS (O)

1. Prior to flight, the pilot in command should brief cabin crew members to use PA to initiate an emergency evacuation.

25-63-02 FASTEN SEAT BELT WHILE SEATED Placards

Interval	Installed	Required	Procedure
C	–	–	**(P)**

One or more signs or placards may be illegible or missing provided:

a. A legible sign or placard is readable from each occupied passenger seat.

25-63-03 Portable Emergency Locator Transmitter (ELT)

Interval	Installed	Required	Procedure
D	1	0	**(P) (MV)**

May be inoperative or removed provided:

DELETION

a. Operations are not conducted on extended overwater or over uninhabited terrain areas.

DELETION

Note: Dispatch relief for the Fixed type ELT's is in MEL Item 23-24-02.

25-64-01 Megaphone

25-64-01B No Passengers Carried

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

May be inoperative or missing provided:

a. No passengers are carried.

b. A maximum of 19 persons for non-passenger carrying operations are carried.

OPERATIONS (O)

1. No passengers may be carried.
2. A maximum of 19 persons (crew member, company employee, or inspector performing official duties) may be carried.
3. Prior to flight, the P-i-C must ensure all occupants are briefed on the emergency procedures that will be used.

25-64-02 Flashlight Holder Assemblies (Including Flashlight)

25-64-02A Passengers Carried

Interval	Installed	Required	Procedure
C	–	–	**(P)**

May be inoperative or missing provided:

a. Crewmember has a flashlight of equivalent characteristics readily available.

Note: The number of flashlight holder assemblies installed are:

TJA,B,C,D,G,H
- Cabin version 7724: 18

TJR to TJW
- Cabin version 77E1: 17

TKA to TKF
- Cabin version 7732: 20

TKK to TKR, TKU to TKZ
- Cabin version 77B1: 19

25-64-02 Flashlight Holder Assemblies (Including Flashlight)

25-64-02B No Passengers Carried

Interval	Installed	Required	Procedure
C	–	0	**(O) (P)**

May be inoperative or missing provided:

a. No passengers are carried.

b. A maximum of 19 persons for non-passenger carrying operations are carried.

Note: The number of flashlight holder assemblies installed are:

TJA,B,C,D,G,H
- Cabin version 7724: 18

TJR to TJW
- Cabin version 77E1: 17

TKA to TKF
- Cabin version 7732: 20

TKK to TKR, TKU to TKZ
- Cabin version 77B1: 19

OPERATIONS (O)

1. No passengers may be carried.
2. A maximum of 19 persons (crewmember, company employee, or inspector performing official duties) may be carried.
3. Prior to flight, the P-i-C must ensure all occupants are briefed on the emergency procedures that will be used.

25-64-03 Emergency Medical Equipment

25-64-03-01 First Aid Kit and Associated Equipment

Interval	Installed	Required	Procedure
A	5	4	**(O) (P)**

One may be incomplete, missing or inoperative provided:

a. The FAK is resealed in a manner that cannot be mistaken for a fully serviceable unit.

b. Replacements are made within one flight.

OPERATIONS (O)

1. Ensure that the FAK is resealed in a manner that cannot be mistaken for a fully serviceable unit.

25-64-03 Emergency Medical Equipment

25-64-03-02 Emergency Medical Kit (EMK) and/or Associated Equipment

25-64-03-02A One Missing, Incomplete or Inoperative

Interval	Installed	Required	Procedure
D	2	1	**(O) (P)**

One may be incomplete, missing or inoperative provided:

a. The EMK is resealed in a manner that cannot be mistaken for a fully serviceable unit.

OPERATIONS (O)

1. Ensure that the EMK is resealed in a manner that cannot be mistaken for a fully serviceable unit.

25-64-03 Emergency Medical Equipment

25-64-03-02 Emergency Medical Kit (EMK) and/or Associated Equipment

25-64-03-02B Both Missing, Incomplete or Inoperative

Interval	Installed	Required	Procedure
A	2	0	**(O) (P)**

All may be incomplete, missing or inoperative provided:

a. Flight time is less than two hours.
b. The EMK is resealed in a manner that cannot be mistaken for a fully serviceable unit.
c. Replacements are made within one flight.

OPERATIONS (O)

1. Ensure that the EMK is resealed in a manner that cannot be mistaken for a fully serviceable unit.

25-64-03 Emergency Medical Equipment

25-64-03-03 Automated External Defibrillators (AED) and/or Associated Equipment

25-64-03-03A Operations Within USA

Interval	Installed	Required	Procedure
A	1	0	**(O) (P)**

May be incomplete, missing or inoperative provided:

a. The AED is resealed in a manner that cannot be mistaken for a fully serviceable unit.
b. Replacement is made within one flight.

OPERATIONS (O)

1. Ensure that the AED is resealed in a manner that cannot be mistaken for a fully serviceable unit.

25-64-03 Emergency Medical Equipment

25-64-03-03 Automated External Defibrillators (AED) and/or Associated Equipment

25-64-03-03B Operations Outside USA

Interval	Installed	Required	Procedure
D	1	0	**(O) (P)**

May be incomplete, missing or inoperative provided:

a. The AED is resealed in a manner that cannot be mistaken for a fully serviceable unit.

OPERATIONS (O)

1. Ensure that the AED is resealed in a manner that cannot be mistaken for a fully serviceable unit.

25-64-03 Emergency Medical Equipment

25-64-03-04 Universal Precaution Kit (UPK)

Interval	Installed	Required	Procedure
D	5	2	**(P)**

25-99-01 Miscellaneous Loose Equipment

25-99-01-02 High Intensity Flashlight

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

25-99-01 Miscellaneous Loose Equipment

25-99-01-03 Utility Flashlight

Interval	Installed	Required	Procedure
	–	–	

Moved dispatch relief for this equipment to item 25-20-01.

25-99-01 Miscellaneous Loose Equipment

25-99-01-04 Extension Belts

TJA,B,C,D,G, H,TJR to TJW

25-99-01-04A Extension Belts

Interval	Installed	Required	Procedure
C	12	–	**(P)**

One required for each passenger who requires extension belts.

25-99-01 Miscellaneous Loose Equipment

25-99-01-04 Extension Belts

TKA to TKF, TKK to TKR, TKU to TKZ

25-99-01-04B Extension Belts

Interval	Installed	Required	Procedure
C	16	–	**(P)**

One required for each passenger who requires extension belts.

25-99-01 Miscellaneous Loose Equipment

25-99-01-06 Life Vest, Yellow, Demonstration

25-99-01-06A Life Vest, Yellow, Demonstration

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

Interval	Installed	Required	Procedure
C	8	–	**(P)**

All may be missing provided:

a. Safety demonstration video is available; or

b. The missing demonstration units are replaced with passenger-type yellow life vests.

25-99-01 Miscellaneous Loose Equipment

25-99-01-06 Life Vest, Yellow, Demonstration

25-99-01-06B Life Vest, Yellow, Demonstration

TKK to TKR,
TKU to TKZ

Interval	Installed	Required	Procedure
C	10	–	**(P)**

All may be missing provided:

a. Safety demonstration video is available; or

b. The missing demonstration units are replaced with passenger-type yellow life vests.

25-99-01 Miscellaneous Loose Equipment

25-99-01-07 Life Vest, Yellow, Infant

Interval	Installed	Required	Procedure
D	20	–	**(P)**

One required for each infant for all routes.

a. May be adult/child type if infant type vests are not available.

25-99-01 Miscellaneous Loose Equipment

25-99-01-08 Life Vest, Red—Flight Deck

Interval	Installed	Required	Procedure
D	4	–	**(P)**

One must be available at each flight deck crew members station and also at each occupied observer seat.

a. May be yellow if red vests are not available.

25-99-01 Miscellaneous Loose Equipment

25-99-01-09 Life Vest, Red—Cabin

TJA,B,C,D,G,H **25-99-01-09A Life Vest, Red—Cabin**

Interval	Installed	Required	Procedure
C	16	–	**(P)**

One must be available at each crew member station for all routes.

a. May be yellow if red vests are not available.

25-99-01 Miscellaneous Loose Equipment

25-99-01-09 Life Vest, Red—Cabin

TJR to TJW **25-99-01-09B Life Vest, Red—Cabin**

Interval	Installed	Required	Procedure
C	14	–	**(P)**

One must be available at each crew member station for all routes.

a. May be yellow if red vests are not available.

25-99-01 Miscellaneous Loose Equipment
25-99-01-09 Life Vest, Red—Cabin
25-99-01-09C Life Vest, Red—Cabin TKA to TKF

Interval	Installed	Required	Procedure
C	18	–	**(P)**

One must be available at each crew member station for all routes.

a. May be yellow if red vests are not available.

25-99-01 Miscellaneous Loose Equipment
25-99-01-09 Life Vest, Red—Cabin
25-99-01-09D Life Vest, Red—Cabin TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
C	16	–	**(P)**

One must be available at each crew member station for all routes.

a. May be yellow if red vests are not available.

25-99-01 Miscellaneous Loose Equipment
25-99-01-10 Life Vest, Yellow, Adult/Child
25-99-01-10A Cabin Version 7724 TJA,B,C,D,G,H

Interval	Installed	Required	Procedure
D	309	–	**(P)**

One for each passenger for all routes.

25-99-01 Miscellaneous Loose Equipment

25-99-01-10 Life Vest, Yellow, Adult/Child

TJR to TJW **25-99-01-10B Cabin Version 77E1**

Interval	Installed	Required	Procedure
D	292	–	**(P)**

One for each passenger for all routes.

25-99-01 Miscellaneous Loose Equipment

25-99-01-10 Life Vest, Yellow, Adult/Child

TKA to TKF **25-99-01-10C Cabin Version 7732**

Interval	Installed	Required	Procedure
D	364	–	**(P)**

One for each passenger for all routes.

25-99-01 Miscellaneous Loose Equipment

25-99-01-10 Life Vest, Yellow, Adult/Child

TKK to TKR, TKU to TKZ **25-99-01-10D Cabin Version 77B1**

Interval	Installed	Required	Procedure
D	348	–	**(P)**

One for each passenger for all routes.

25-99-01 Miscellaneous Loose Equipment
25-99-01-11 Life Vest, Yellow, Adult/Child, Spare
25-99-01-11A Cabin Version 7724 & 77E1 TJA,B,C,D,G,H,TJR to TJW

Interval	Installed	Required	Procedure
C	12	6	**(P)**

25-99-01 Miscellaneous Loose Equipment
25-99-01-11 Life Vest, Yellow, Adult/Child, Spare
25-99-01-11B Cabin Version 7732 & 77B1 TKA to TKF,TKK to TKR,TKU to TKZ

Interval	Installed	Required	Procedure
C	16	8	**(P)**

25-99-01 Miscellaneous Loose Equipment
25-99-01-12 Oxygen Masks, Demonstration
25-99-01-12A Cabin Version 7724 & 77E1 & 7732 TJA,B,C,D,G,H,TJR to TJW,TKA to TKF

Interval	Installed	Required	Procedure
C	8	–	**(P)**

All may be missing provided:

a. Safety demonstration video is available; or
b. The missing demonstration units are replaced with portable oxygen masks.

25-99-01 Miscellaneous Loose Equipment

25-99-01-12 Oxygen Masks, Demonstration

TKK to TKR, TKU to TKZ

25-99-01-12B Cabin Version 77B1

Interval	Installed	Required	Procedure
C	10	–	**(P)**

All may be missing provided:

a. Safety demonstration video is available; or

b. The missing demonstration units are replaced with portable oxygen masks.

25-99-01 Miscellaneous Loose Equipment

25-99-01-13 Seat Belts, Demonstration

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

25-99-01-13A Cabin Version 7724 & 77E1 & 7732

Interval	Installed	Required	Procedure
C	8	–	**(P)**

All may be missing provided:

a. Safety demonstration video is available; or

b. The missing demonstration units are replaced with extension belts.

25-99-01 Miscellaneous Loose Equipment

25-99-01-13 Seat Belts, Demonstration

TKK to TKR, TKU to TKZ

25-99-01-13B Cabin Version 77B1

Interval	Installed	Required	Procedure
C	10	–	**(P)**

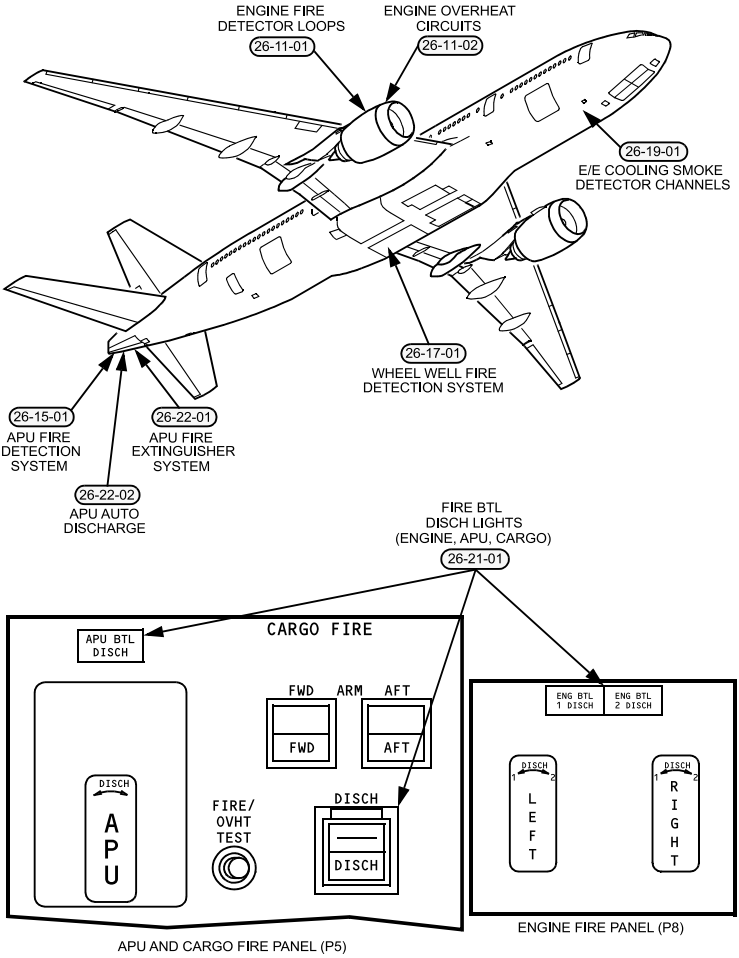
All may be missing provided:

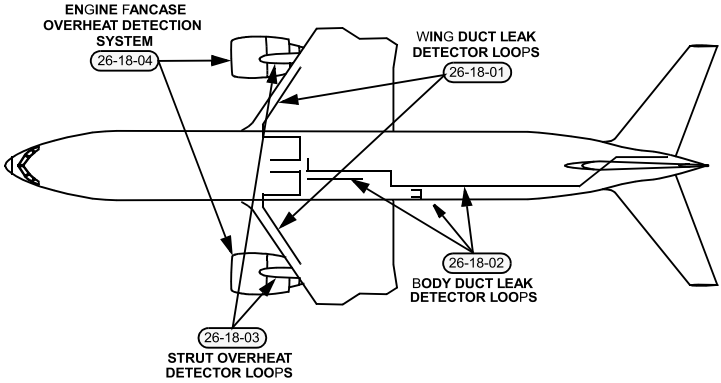
a. Safety demonstration video is available; or

b. The missing demonstration units are replaced with extension belts.

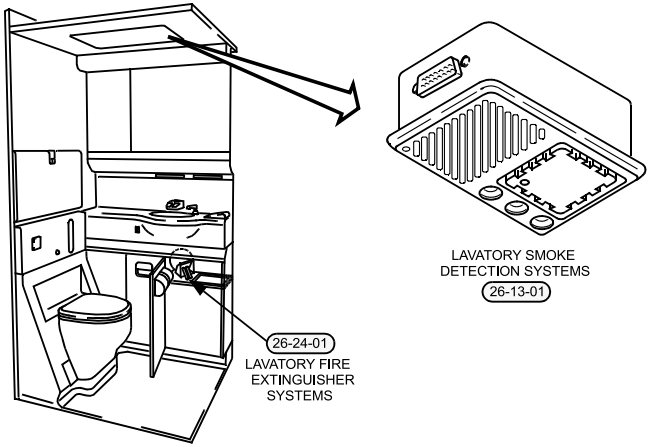
FIRE PROTECTION

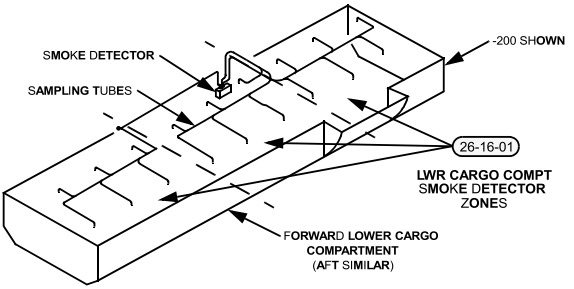
General Locations



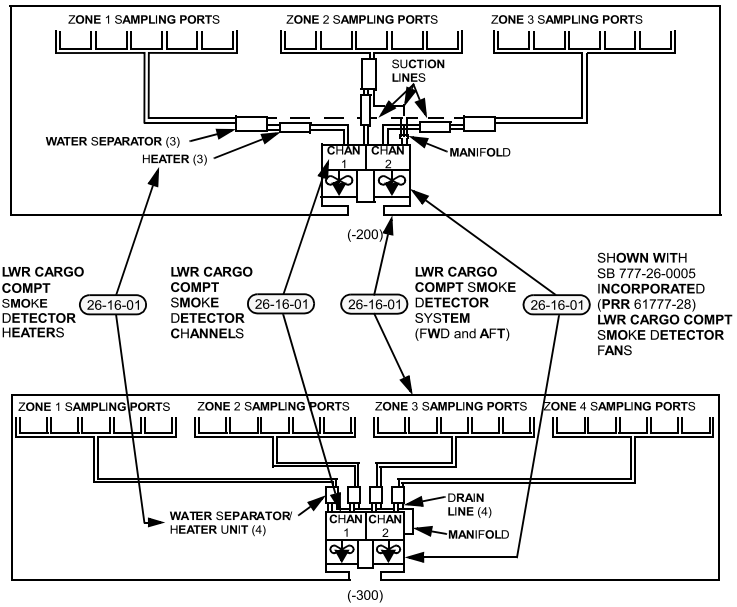


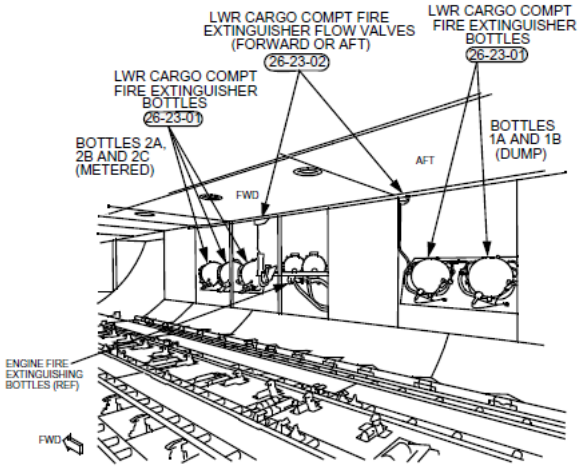
DUCT LEAK AND OVERHEAT DETECTION SYSTEM



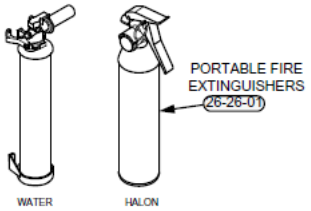


LOWER CARGO COMPARTMENT





LOWER FORWARD CARGO COMPARTMENT



26-11-01 Engine Fire Detector Loops

26-11-01-01 GE

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
C	4	2	**(P)**

One per engine may be inoperative.

26-11-01 Engine Fire Detector Loops

26-11-01-02 RR

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

Interval	Installed	Required	Procedure
C	4	2	**(P)**

One per engine may be inoperative.

26-11-02 Engine Overheat Circuits

Interval	Installed	Required	Procedure
C	4	0	**(P)**

26-13-01 Lavatory Smoke Detection Systems

26-13-01-01 Lavatory Smoke Detection Systems

26-13-01-01A Cabin Version 7724 TJA,B,C,D,G,H

Interval	Installed	Required	Procedure
C	9	–	**(M) (O) (P) (MV)**

For each lavatory, may be inoperative provided:

a. Associated lavatory waste container is empty.

b. Lavatory door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

c. Lavatory is used only by crewmembers.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Deactivate the associated lavatory (AMM 26-00-00/901).

1. Check that the lavatory waste receptacle in the waste container is empty.
2. When desired, deactivate the inoperative smoke detector.
   A. Open the P110 panel LAV SMOKE DETECT-L circuit breaker.
   B. Open the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.
   C. Loosen the screws on the face plate of the inoperative smoke detector and remove the face plate.

      Note: The smoke detector is installed in ceiling of each lavatory.
   D. Remove the mounting screws that hold the smoke detector to the ceiling bracket.
   E. Disconnect, cap and stow the electrical connector.
   F. Reattach the smoke detector to the ceiling bracket with the mounting screws and tighten the mounting screws.
   G. Re-install the smoke detector face plate and tighten the face plate mounting screws.
   H. Close the P110 panel LAV SMOKE DETECT-L circuit breaker.
   I. Close the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.
3. Close and lock the lavatory door.

OPERATIONS (O)

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

26-13-01 Lavatory Smoke Detection Systems

26-13-01-01 Lavatory Smoke Detection Systems

TJR to TJW **26-13-01-01B Cabin Version 77E1**

Interval	Installed	Required	Procedure
C	10	–	**(M) (O) (P) (MV)**

For each lavatory, may be inoperative provided:

a. Associated lavatory waste container is empty.

b. Lavatory door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

c. Lavatory is used only by crewmembers.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Deactivate the associated lavatory (AMM 26-00-00/901).

1. Check that the lavatory waste receptacle in the waste container is empty.
2. When desired, deactivate the inoperative smoke detector.
   A. Open the P110 panel LAV SMOKE DETECT-L circuit breaker.
   B. Open the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.
   C. Loosen the screws on the face plate of the inoperative smoke detector and remove the face plate.

      Note: The smoke detector is installed in ceiling of each lavatory.
   D. Remove the mounting screws that hold the smoke detector to the ceiling bracket.
   E. Disconnect, cap and stow the electrical connector.
   F. Reattach the smoke detector to the ceiling bracket with the mounting screws and tighten the mounting screws.
   G. Re-install the smoke detector face plate and tighten the face plate mounting screws.
   H. Close the P110 panel LAV SMOKE DETECT-L circuit breaker.
   I. Close the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.

3. Close and lock the lavatory door.

OPERATIONS (O)

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

26-13-01 Lavatory Smoke Detection Systems

26-13-01-01 Lavatory Smoke Detection Systems

26-13-01-01C Cabin Version 7732 TKA to TKF

Interval	Installed	Required	Procedure
C	13	–	**(M) (O) (P) (MV)**

For each lavatory, may be inoperative provided:

a. Associated lavatory waste container is empty.

b. Lavatory door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

c. Lavatory is used only by crewmembers.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Deactivate the associated lavatory (AMM 26-00-00/901).

1. Check that the lavatory waste receptacle in the waste container is empty.
2. When desired, deactivate the inoperative smoke detector.
   A. Open the P110 panel LAV SMOKE DETECT-L circuit breaker.
   B. Open the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.
   C. Loosen the screws on the face plate of the inoperative smoke detector and remove the face plate.

      Note: The smoke detector is installed in ceiling of each lavatory.
   D. Remove the mounting screws that hold the smoke detector to the ceiling bracket.
   E. Disconnect, cap and stow the electrical connector.
   F. Reattach the smoke detector to the ceiling bracket with the mounting screws and tighten the mounting screws.
   G. Re-install the smoke detector face plate and tighten the face plate mounting screws.

H. Close the P110 panel LAV SMOKE DETECT-L circuit breaker.

I. Close the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.

3. Close and lock the lavatory door.

OPERATIONS (O)

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

26-13-01 Lavatory Smoke Detection Systems

26-13-01-01 Lavatory Smoke Detection Systems

TKK to TKR, TKU to TKZ

26-13-01-01D Cabin Version 77B1

Interval	Installed	Required	Procedure
C	11	–	**(M) (O) (P) (MV)**

For each lavatory, may be inoperative provided:

a. Associated lavatory waste container is empty.

b. Lavatory door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

c. Lavatory is used only by crewmembers.

Note: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

MAINTENANCE (M)

Deactivate the associated lavatory (AMM 26-00-00/901).

1. Check that the lavatory waste receptacle in the waste container is empty.
2. When desired, deactivate the inoperative smoke detector.
   A. Open the P110 panel LAV SMOKE DETECT-L circuit breaker.
   B. Open the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.
   C. Loosen the screws on the face plate of the inoperative smoke detector and remove the face plate.

      Note: The smoke detector is installed in ceiling of each lavatory.
   D. Remove the mounting screws that hold the smoke detector to the ceiling bracket.
   E. Disconnect, cap and stow the electrical connector.
   F. Reattach the smoke detector to the ceiling bracket with the mounting screws and tighten the mounting screws.

G. Re-install the smoke detector face plate and tighten the face plate mounting screws.

H. Close the P110 panel LAV SMOKE DETECT-L circuit breaker.

I. Close the P210 panel LAV SMOKE DETECTOR RIGHT circuit breaker.

3. Close and lock the lavatory door.

OPERATIONS (O)

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems

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

May be inoperative provided:

a. Inoperative smoke detection system is deactivated.

b. Associated crew rest is considered inoperative.

DELETION

Note: The airplane must also be dispatched using MEL Item 25-29-04.

MAINTENANCE (M)

Deactivate the inoperative smoke detection system and the associated crew/attendant rest closed (AMM 26-00-00/901).

1. Deactivate the inoperative smoke detection system.
   A. For the forward overhead flight crew rest:
      1) Open and collar P210 panel UPR FWD MDL SMK DET circuit breaker.
   B. For the aft overhead flight attendant rest:
      1) Open and collar P210 panel UPR AFT REST SMK DET circuit breaker.

         Note: If the associated crew rest SMOKE XXXX caution message remains displayed, temporarily disconnect the electrical connectors from all smoke detectors in the associated crew rest, then re-install each connector after the message has cleared.
2. Deactivate the associated crew/attendant rest closed.
   A. Remove all baggage and personal items from the associated crew/attendant rest.

      Note: Blankets, pillows and other items normally used in the crew/attendant rest may remain.
   B. Close and placard the associated crew/attendant rest entrance door.

DELETION

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04-01 Bunk Smoke Detectors

26-14-04-01A Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
C	9	0	**(P)**

May be inoperative provided:

a. Adjacent aisle/common area smoke detector(s) operate normally.
b. For bunk curtain installed, associated curtain is secured open or removed.

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04-01 Bunk Smoke Detectors

26-14-04-01B Cabin Version 77B1 TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
C	10	0	**(P)**

May be inoperative provided:

a. Adjacent aisle/common area smoke detector(s) operate normally.
b. For bunk curtain installed, associated curtain is secured open or removed.

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04-02 Common Area Smoke Detectors

26-14-04-02-01 Overhead Flight Crew Rest (OFCR)

Interval	Installed	Required	Procedure
C	3	0	**(P)**

May be inoperative provided:

a. Bunk smoke detector(s) operate normally.

b. For common area or bunk curtain(s) installed, curtain(s) is secured is open or removed.

TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems

26-14-04-02 Common Area Smoke Detectors

26-14-04-02-02 Overhead Flight Attendant Rest (OFAR)

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

May be inoperative provided:

a. No more than one bunk smoke detector in adjacent bunk area(s) is inoperative.

TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems

TKK to TKR, TKU to TKZ

26-14-04-03 Aisle Smoke Detectors (OFAR)

Interval	Installed	Required	Procedure
C	4	–	**(P)**

May be inoperative provided:

a. Adjacent aisle/common area smoke detector(s) operates normally.

TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems

26-14-04-04 Closet Smoke Detector(s)

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

May be inoperative provided:

a. Closet is not used and personal items are removed.

b. The closet door is closed and placarded INOPERATIVE PLEASE DO NOT USE.

MAINTENANCE (M)

Deactivate associated closet (AMM 26-00-00/901).

1. Remove all personal items from the associated closet.
2. Place a barrier strap or rope across the associated closet door with a placard attached that states INOPERATIVE PLEASE DO NOT USE.

OPERATIONS (O)

1. The closet associated with the inoperative smoke detector is not available for inflight use. Remove personal items from the closet.

TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems

26-14-04-06 Stairwell Smoke Detectors

26-14-04-06-01 OFCR Without Lavatory

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

May be inoperative provided:

a. All common area smoke detectors operate normally.

b. For common area curtain installed, common area curtain is secured open or removed.

TJR to TJW, TKK to TKR, TKU to TKZ

26-14-04 Overhead Flight Crew/Attendant Rest Smoke Detection Systems

26-14-04-06 Stairwell Smoke Detectors

26-14-04-06-03 OFAR

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

May be inoperative provided:

a. All common area smoke detectors operate normally.

b. For common area curtain installed, common area curtain is secured open or removed.

26-15-01 APU Fire Detection System

26-15-01A APU Not Used

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

May be inoperative provided:

a. Other procedures do not require use of APU.

b. APU selector switch remains in the OFF position.

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

MAINTENANCE NOTE

1. The APU fire detection system is inoperative when both FIRE LOOP 1 APU and FIRE LOOP 2 APU status messages are displayed.

OPERATIONS (O)

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The following restrictions imposed for an inoperative APU generator must be observed:

   A. The flight must remain within 180 minutes of landing at a suitable airport.

B. Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

3. Position the APU selector OFF.

26-15-01 APU Fire Detection System

26-15-01B APU Used On Ground

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Other procedures do not require use of the APU.

b. APU is used for ground operations only.

c. APU is continuously monitored by ground personnel when operating.

d. APU external control system operates normally.

e. APU is not used during taxi.

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

MAINTENANCE (M)

Note: The APU fire detection system is inoperative when both FIRE LOOP 1 APU and FIRE LOOP 2 APU status messages are displayed.

1. The APU must be continually visually monitored when the APU is in use on the ground. If an APU fire is observed, the APU fire extinguisher must be manually discharged using either the APU fire shutdown switch on the P40 service and APU shutdown panel (nose gear) or the APU and Cargo Fire Panel (P5) APU fire switch.

OPERATIONS (O)

Note: APU fire bottle discharge may occur during on ground APU operation if intermittent fire detector loop shorts have not been resolved.

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R

MEL Item	Associated Status Message
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The following restrictions imposed for an inoperative APU generator must be observed:
   A. The flight must remain within 180 minutes of landing at a suitable airport.
   B. Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.
3. For APU use during ground operations, position a fire guard near the tail of the airplane to monitor the APU.
4. Position the APU selector OFF and do not use the APU inflight or during taxi operations.

26-15-01 APU Fire Detection System

26-15-01-01 APU Fire Detector Loops

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

OPERATIONS NOTE

1. APU fire bottle discharge may occur during on ground APU operation if intermittent fire detector loop shorts have not been resolved.

26-16-01 Lower Cargo Compartment Smoke Detection Systems (Forward and Aft) (Passenger)

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Procedures are established and used to verify the associated compartment remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

MAINTENANCE (M)

Note: The smoke detection system for a compartment is inoperative when both channels or both fans are inoperative.

Configure the airplane (AMM 26-00-00/901).

1. Associated cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.
2. If desired, deactivate the aft smoke detection system:
   A. Open and collar the P110 panel AFT CGO SMOKE CTRL CHAN 1 circuit breaker.
   B. Open and collar the P210 panel AFT CGO SMOKE CTRL CHAN 2 circuit breaker.
   C. If installed, open and collar the P210 panel SMOKE DETECTOR HTR-AFT circuit breaker.

Note: Do not deactivate the forward smoke detection system.

OPERATIONS (O)

1. Associated cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

26-16-01 Lower Cargo Compartment Smoke Detection Systems (Forward and Aft) (Passenger)

26-16-01-01 Lower Cargo Compartment Smoke Detector Channels

Interval	Installed	Required	Procedure
C	4	2	**(P)**

One channel per compartment may be inoperative.

26-16-01 Lower Cargo Compartment Smoke Detection Systems (Forward and Aft) (Passenger)

26-16-01-02 Lower Cargo Compartment Smoke Detector Fans

Interval	Installed	Required	Procedure
C	4	2	**(P)**

One fan per compartment may be inoperative.

26-16-01 Lower Cargo Compartment Smoke Detection Systems (Forward and Aft) (Passenger)

26-16-01-03 Lower Cargo Compartment Smoke Detector Zones

Interval	Installed	Required	Procedure
C	–	0	**(M) (O) (P) (MV)**

Smoke detection in any zone may be inoperative provided:

a. Procedures are established and used to verify the associated compartment zone and adjacent compartment zone(s) remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

MAINTENANCE (M)

Configure the airplane (AMM 26-00-00/901).

1. Associated cargo compartment zone and adjacent zone(s) must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

-200,-200ER

A. For -200/-200ER:

1) Aft and bulk cargo compartments:

– Zone 1 is from bulk compartment aft wall to bulk compartment cargo divider net.
– Zone 2 is from bulk compartment cargo divider net to STA 1664 floor beam.
– Zone 3 is from STA 1664 floor beam to forward wall.

2) Forward compartment:

– Zone 1 is from aft wall to STA 772 floor beam.
– Zone 2 is from STA 772 floor beam to STA 592 floor beam.
– Zone 3 is from STA 592 floor beam to forward wall.

-300,-300ER

B. For -300/-300ER:

1) Aft and bulk cargo compartments:

– Zone 1 is from bulk compartment aft wall to bulk compartment cargo divider net.
– Zone 2 is from bulk cargo compartment cargo divider net to STA 1664 floor beam.
– Zone 3 is from STA 1664 floor beam to STA 1434 + 189 floor beam.
– Zone 4 is from STA 1434 + 189 floor beam to forward wall.

2) Forward compartment:

– Zone 1 is from aft wall to STA 825 + 147 floor beam.
– Zone 2 is from STA 825 + 147 floor beam to STA 772 floor beam.
– Zone 3 is from STA 772 floor beam to STA 592 floor beam.
– Zone 4 is from STA 592 floor beam to forward wall.

OPERATIONS (O)

1. Associated cargo compartment zone and adjacent zone(s) must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

26-16-01 Lower Cargo Compartment Smoke Detection Systems (Forward and Aft) (Passenger)

26-16-01-04 Lower Cargo Compartment Smoke Detector Heaters

26-16-01-04A Humid Cargo Not Carried

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. Humid cargo is not carried in the associated compartment.

26-16-01 Lower Cargo Compartment Smoke Detection Systems (Forward and Aft) (Passenger)

26-16-01-04 Lower Cargo Compartment Smoke Detector Heaters

26-16-01-04B Humid Cargo Carried

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

May be inoperative provided:

a. Humid cargo such as fruits, flowers are wrapped in plastic to reduce the possibility of false fire warnings.

OPERATIONS (O)

Note: Cargo such as fruit, flowers or live animals may cause false fire warnings due to condensation of moisture inside the smoke detectors.

26-17-01 Wheel Well Fire Detection System

26-17-01A BTMS Operative

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

May be inoperative provided:

a. BTMS operates normally.

Note: Avoid the possibility of retracting an overheated wheel by monitoring brake temperature indications.

26-17-01 Wheel Well Fire Detection System

26-17-01B BTMS Inoperative

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. An accepted procedure is used to ensure brakes are cool before engine start.

Notes: 1. Avoid the possibility of retracting an overheated wheel by leaving landing gear extended for ten minutes after takeoff.

2. In case of engine failure after V1, landing gear should be retracted until takeoff obstacles are cleared.

MAINTENANCE (M)

1. Ensure brakes are cool to the touch prior to engine start (AMM 26-00-00/901).
2. If desired, the wheel well fire detection system may be deactivated.

   Note: DET FIRE WHEEL WELL status message will be displayed when the wheel well fire detection system is deactivated.

   A. Access the wheel well fire detectors in the upper area of the left and right bays of the main wheel well.

   B. Disconnect, cap and stow the electrical connectors (D7589P and D7615P).

OPERATIONS (O)

1. It is not necessary to apply gear down performance adjustments when dispatching under this item.
2. In case of engine failure after V1, landing gear should be retracted until takeoff obstacles are cleared.
3. Increase flight planning fuel by 2,050 kg to account for the landing gear extended for ten minutes after takeoff.

26-18-01 Wing Duct Leak Detector Loops

Interval	Installed	Required	Procedure
C	4	2	**(P)**

One per side may be inoperative.

26-18-02 Body Duct Leak Detector Loops

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

One may be inoperative provided:

a. Both ASG cards in the opposite cardfile operate normally.

MAINTENANCE NOTE

1. For BLEED LOOP 1 BODY message, both ASG cards in the Right Cardfile must operate normally. Both ASG cards in the Right Cardfile are operating normally if the RSCF ASG CARD L or R messages are not displayed.
2. For BLEED LOOP 2 BODY message, both ASG cards in the Left Cardfile must operate normally. Both ASG cards in the Left Cardfile are operating normally if the LSCF ASG CARD L or R messages are not displayed.

26-18-03 Strut Overheat Detector Loops

Interval	Installed	Required	Procedure
C	4	2	**(P)**

One per side may be inoperative.

26-18-04 Engine Fan Case Overheat Detection Systems

26-18-04-01 GE

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Associated engine anti-ice selector remains OFF.

b. Airplane is not operated in known or forecast icing conditions.

c. Flight remains within 120 minutes of landing at a suitable airport.

26-18-04 Engine Fan Case Overheat Detection Systems

26-18-04-02 RR

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

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

One may be inoperative provided:

a. One engine overheat circuit operates normally on the associated engine.

26-19-01 E/E Cooling Smoke Detector Channels

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

26-21-01 Fire BTL DISCH Lights (Engine, APU, Cargo)

Interval	Installed	Required	Procedure
C	4	0	**(P)**

26-21-02 Fire Extinguishing Squib Test System

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

May be inoperative provided:

a. Squib electrical continuity is verified once each flight day.

MAINTENANCE (M)

Note: The Squib Test Control relay may be inoperative when all of the applicable squib test status messages are displayed. The airplane may be dispatched using this item by replacing the squib test control relay with an operative relay from the ELMS cabinet, successfully accomplishing the fire extinguishing squib test, and re-installing the operative relay back in the ELMS cabinet.

1. For the Squib Test Control relay inoperative:
   A. Verify fire extinguishing bottle squib electrical continuity once each flight day (AMM 26-00-00/901).
      1) Open the P310 panel FIRE EXT APU circuit breaker.
      2) Open the P310 panel FIRE EXT CGO BTL 1A & VLV SQB circuit breaker.
      3) Remove the Squib Test Control relay K26010 from the P310 Panel.
      4) Use relay K21452, R DR 1 & 2 HEAT as a replacement relay.
         a. Open the P210 panel R DR 1 HTR circuit breaker.
         b. Open the P210 panel R DR 2 HTR circuit breaker.
         c. -200,-200ER* Open the P210 panel R DR 1-4 HTR CTRL circuit breaker.
            -300,-300ER Open the P210 panel R DR 1-5 HTR CTRL circuit breaker.
         d. Remove relay K21452 and install it in the Squib Test Control relay location.
      5) Close the P310 panel FIRE EXT APU circuit breaker.
      6) Close the P310 panel FIRE EXT CGO BTL 1A & VLV SQB circuit breaker.
      7) Use the MAT to initiate a fire extinguisher squib test.
      8) Confirm that all of the applicable squib test status messages are not displayed.
      9) Open the P310 panel FIRE EXT APU circuit breaker.

10) Open the P310 panel FIRE EXT CGO BTL 1A & VLV SQB circuit breaker.
11) Remove the replacement relay from the Squib Test Control relay location and re-install it in its original location.
12) Close the P210 panel circuit breaker(s) opened for the replacement relay.
13) Do the applicable operational test for the re-installed relay K21452.
14) Re-install the inoperative Squib Test Control relay K26010 in the P310 panel.

    Note: The applicable squib test status messages will be displayed after an automatic fire bottle test occurs.

15) Close the P310 panel FIRE EXT APU circuit breaker.
16) Close the P310 panel FIRE EXT CGO BTL 1A & VLV SQB circuit breaker.

26-21-02 Fire Extinguishing Squib Test System

26-21-02-01 Cargo Squib Test System

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

May be inoperative provided:

a. Procedures are established and used to verify lower cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

MAINTENANCE (M)

1. Lower cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

OPERATIONS (O)

1. Lower cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

26-22-01 APU Fire Extinguisher System

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

May be inoperative provided:

a. Other procedures do not require use of APU.

b. APU selector switch remains in the OFF position.

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

OPERATIONS (O)

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The following restrictions imposed for an inoperative APU generator must be observed:

   A. The flight must remain within 180 minutes of landing at a suitable airport.

   B. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

3. Position the APU selector OFF.

26-22-02 APU Auto Discharge

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

May be inoperative provided:

a. APU is monitored during APU ground operations for fire warning.

MAINTENANCE (M)

1. During APU ground operations, monitor the APU for fire warnings. For a fire warning, the APU fire extinguisher must be manually discharged using either the APU fire shutdown switch on the P40 service and APU shutdown panel (nose gear) or the APU and Cargo Fire Panel (P5) APU fire switch (AMM 26-00-00/901).

26-23-01 Lower Cargo Compartment Fire Extinguisher Bottles

26-23-01-01 Lower Cargo Compartment Fire Extinguisher Bottles

Interval	Installed	Required	Procedure
C	5	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

MAINTENANCE (M)

1. Lower cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

OPERATIONS (O)

1. The lower cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

26-23-01 Lower Cargo Compartment Fire Extinguisher Bottles

26-23-01-03 Metered Bottles

Interval	Installed	Required	Procedure
C	3	1	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Bottles 1A and 1B operate normally.

b. Metered bottle 2A operates normally.

c. Associated bottle is deactivated.

d. Airplane is operated pressurized.

e. Appropriate flight planning adjustments are applied to account for remaining fire suppression capability.

MAINTENANCE (M)

Deactivate the inoperative fire extinguishing bottle (AMM 26-00-00/901).

1. Gain access to the right side of the forward cargo compartment and remove the sidewall lining to expose the inoperative bottle (AMM 25-52-06/401).
2. Install the access platform near the inoperative bottle.
3. For bottle 2B or 2C, open the P310 Panel FIRE EXT CGO BTL 2A, 2B & 2C circuit breaker.
4. For bottle 2D, open the P310 Panel FIRE EXT CGO BTL 2D, 2E & 2F circuit breaker.
5. Disconnect the flex hose assembly from the inoperative bottle and plumbing. Plug (MS21913V10P, AS5231V10P or equivalent) the ends and stow the hose near the bottle.
6. Cap the discharge head of the bottle with a pressure cap (AS5233V10P, or equivalent).
7. Cap the plumbing connection with a pressure cap (AS5233V10P, or equivalent).
8. Disconnect, cap and stow the electrical connector from the squib.
   A. For bottle 2B (B26016), electrical connector DB26016A.
   B. For bottle 2C (B26017), electrical connector DB26017A.
   C. For bottle 2D (B26026), electrical connector DB26026A.
9. Cap the squib (protective cover is attached to the bottle). Do not use a shunt plug. A shunt plug may damage the squib pins.
10. Close the P310 Panel FIRE EXT CGO BTL 2A, 2B & 2C and FIRE EXT CGO BTL 2D, 2E & 2F circuit breaker.
11. Remove the access platform.
12. Re-install the sidewall lining (AMM 25-52-06/401).
13. Initiate a fire extinguisher squib test using one of the following methods:
    A. Use a Maintenance Access Terminal (MAT) to do the operational test of the cargo squibs (AMM 26-23-00/501). The TEST CONDITION on the MAT will show FAILED due to the deactivated bottle.
    B. Cycle power to the ELMS P310 panel (airplane power applied) by opening P310 panel circuit breakers PSU B PRI, PSU A PRI, PSU B ALTN, and PSU A ALTN and then closing them. Wait two minutes.
14. Verify fire bottle status message is only displayed for the deactivated bottle.

OPERATIONS (O)

For ETOPS flight planning, use the following total fire suppression times for planning time-limited system alternates minus 15 minutes.

1. (Three metered bottles installed (2A, 2B, and 2C))

   Note: Bottles 1A, 1B and 2A must operate normally.

-200,-200ER

Filter/Regulator	Total Fire Suppression Time (minutes)	
	One Bottle Inoperative (2B/2C)	Two Bottles Inoperative (2B/2C)
473995-1/-2/-3 (S218W601-31)	148	84
473995-4/-5 (S218W601-31)	188	104
473494-1/-2/-3 (S218W601-3)	123	71
473494-4/-5 (S218W601-3)	137	78

-300,-300ER

Filter/Regulator	Total Fire Suppression Time (minutes)	
	One Bottle Inoperative (2B/2C)	Two Bottles Inoperative (2B/2C)
473857-4/-5 (S218W601-30)	141	80

26-23-01 Lower Cargo Compartment Fire Extinguisher Bottles

26-23-01-04 Bottle Pressure Switches

Interval	Installed	Required	Procedure
C	5	0	**(M) (P)**

May be inoperative provided:

a. Associated bottle is verified full.

b. Associated bottle squib firing circuit is verified operating normally before each departure.

MAINTENANCE (M)

Note: For a bottle pressure switch failed closed when the bottle pressure is normal or the bottle pressure is low, or the bottle squib fails a squib test, the associated bottle status message will be displayed.

Verify the associated bottle is full and verify the associated squib operates normally before each departure (AMM 26-00-00/901).

1. Confirm the associated bottle pressure switch is failed closed.
   A. Display the Fire Protection maintenance page.
   B. Confirm the associated squib condition under the Cargo Fire Extinguishing System is listed as NORM.
   C. Confirm the associated bottle pressure condition under the Cargo Fire Extinguishing System is listed as LOW.
2. Remove, weigh and reinstall the associated bottle.
   A. Remove the associated bottle from the airplane (AMM 26-23-01/401).
   B. Weigh the bottle. The bottle must weigh the same as the weight on the data plate ± 0.3 lb.

      Note: The measured weight of the bottle includes the charged bottle, the inspection tag on the bottle, and the swivel assemblies. If the squib cartridges are not installed on the fire extinguisher bottle, do not install them. Weigh the squib cartridges as loose parts and include the weight of the squib cartridges in the measured weight. If the squib cartridges are installed, weigh the bottle with the cartridges installed. Remove all protective covers when the parts are weighed.

   C. Reinstall the bottle in the airplane (AMM 26-23-01/401). It is not necessary to perform the bottle pressure switch operational test associated with this procedure. Confirm the bottle squib operational test condition shows PASSED.
3. Before each departure, verify the associated bottle squib is operating normally.
   A. If an automatic squib test has not occurred recently (less than 12 hours), manually initiate a fire extinguisher squib test using one of the following methods.

      Note: A squib test is automatically initiated upon airplane power-up or after landing.

      1) Use a Maintenance Access Terminal (MAT) to do the operational test of the cargo squibs (AMM 26-23-00/501). The TEST CONDITION on the MAT will show PASSED.
      2) Cycle power to the ELMS P310 panel (airplane power applied) by opening P310 panel circuit breakers PSU B PRI, PSU A PRI,

PSU B ALTN, and PSU A ALTN and then closing them. Wait two minutes.

B. Display the Fire Protection maintenance page and verify the associated squib condition under the Cargo Fire Extinguishing System is listed as NORM.

26-23-02 Lower Cargo Compartment Fire Extinguisher Flow Valves (Forward or Aft)

26-23-02A One Inoperative

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

One may be inoperative provided:

a. Associated flow valve is capped.

b. Associated flow valve squib electrical connectors are capped and stowed.

c. Procedures are established and used to verify the associated cargo compartment remains empty or contains only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

MAINTENANCE (M)

Deactivate the inoperative flow valve (AMM 26-00-00/901).

1. Gain access to the right side of the lower forward cargo compartment and open the appropriate access panel to expose the inoperative fire extinguishing flow valve (AMM 25-52-06/401).
2. Install the access platform near the inoperative flow valve.
3. Open the P310 Panel FIRE EXT CGO BTL 1A & VLV SQB circuit breaker.
4. Open the P310 Panel FIRE EXT CGO BTL 1B & VLV SQB circuit breaker.
5. Disconnect the inlet tube from the inoperative flow valve and the plumbing connection. Plug (MS21913-12, AS5231V12P or equivalent) both ends and stow the inlet tube near the flow valve.
6. Cap the inlet port of the flow valve with a pressure cap (BACC14AD12 or equivalent).
7. Cap the plumbing connection with a pressure cap (BACC14AD12 or equivalent).
8. Disconnect, cap and stow the electrical connectors from the flow valve squibs (two squibs on each flow valve).
   – For forward flow valv e (V26201), electrical connectors DV26201A and DV26201B.

– For aft flow valve (V26202), electrical connectors DV26202A and DV26202B.

9. Cap the squibs (protective covers are attached to the valve). Do not use a shunt plug. A shunt plug may damage the squib pins.
10. Close the P310 Panel FIRE EXT CGO BTL 1A & VLV SQB circuit breaker.
11. Close the P310 Panel FIRE EXT CGO BTL 1B & VLV SQB circuit breaker.
12. Remove the access platform.
13. Close the access panel (AMM 25-52-06/401).
14. Initiate a fire extinguisher squib test by opening P310 panel PSU B PRI, PSU A PRI, PSU B ALTN, and PSU A ALTN circuit breakers and then closing them (with airplane powered). Wait two minutes.
15. Verify the status message for the remaining flow valve is not displayed (only for inoperative flow valve).
16. The associated lower cargo compartment must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

OPERATIONS (O)

1. The associated lower cargo compartment must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

26-23-02 Lower Cargo Compartment Fire Extinguisher Flow Valves (Forward or Aft)

26-23-02B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Procedures are established and used to verify cargo compartments remain empty or contain only ballast, empty cargo handling equipment (ballast may be loaded in ULDs), or fly away kits.

Notes: 1. Landing gear tires, cans of hydraulic oil, cleaning solvents, or any item(s) that may be potential sources of smoke, fume, or fire must be removed from Airborne Maintenance Kit (AMK).

2. Dry shingle, coarse round gravel or pebbles can be used as ballast.

MAINTENANCE (M)

1. Lower cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

OPERATIONS (O)

1. The lower cargo compartments must remain empty, except for ballast, empty cargo containers (ballast may be loaded in ULDs), fly away kits, pallets, and cargo restraint components.

26-24-01 Lavatory Fire Extinguisher Systems

26-24-01-01 Lavatory Fire Extinguisher Systems

26-24-01-01A Smoke Detection System(s) Operative

Interval	Installed	Required	Procedure
C	–	–	**(P)**

May be inoperative for each lavatory provided:

a. Associated lavatory smoke detection system operates normally.

Note: The number of lavatory fire extinguisher systems installed are:

- Cabin version 7724: 9
- Cabin version 77E1: 10
- Cabin version 7732: 13
- Cabin version 77B1: 11

TJA,B,C,D,G,H
TJR to TJW
TKA to TKF
TKK to TKR, TKU to TKZ

26-24-01 Lavatory Fire Extinguisher Systems

26-24-01-01 Lavatory Fire Extinguisher Systems

26-24-01-01B Smoke Detection System(s) Inoperative

Interval	Installed	Required	Procedure
C	–	–	**(M) (O) (P) (MV)**

May be inoperative for each lavatory provided:

a. Associated lavatory waste container is empty.

b. Lavatory door is locked closed and placarded, INOPERATIVE PLEASE DO NOT USE.

c. Lavatory is used only by crewmembers.

Notes: 1. These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

2. The number of lavatory fire extinguisher systems installed are:

- Cabin version 7724: 9
- Cabin version 77E1: 10
- Cabin version 7732: 13
- Cabin version 77B1: 11

TJA,B,C,D,G,H
TJR to TJW
TKA to TKF
TKK to TKR, TKU to TKZ

MAINTENANCE (M)

Deactivate the associated lavatory (AMM 26-00-00/901).

1. Check that the lavatory waste receptacle in the waste container is empty.
2. Close and lock the lavatory door.

OPERATIONS (O)

1. Lavatory door should remain locked closed, except for use or inspection by crewmembers.

26-26-01 Portable Fire Extinguishers

26-26-01-01 Water Fire Extinguishers

26-26-01-01A Water Fire Extinguishers TJA,B,C,D,G,H

Interval	Installed	Required	Procedure
D	3	2	**(M) (P)**

May be inoperative or missing provided:

a. The inoperative fire extinguisher is tagged inoperative, removed from the installation location, and placed out of sight so it can not be mistaken for a functional unit.

b. One operative unit must be in the stowage RH side off of fwd cabin station 2R.

c. One operative unit must be in the stowage RH side aft of aft cabin station 4R.

MAINTENANCE (M)

1. Stow the out-of-service extinguisher in a place (possibly in a bag) where it will not be used by mistake, until it can be removed from the airplane at the next available maintenance base (AMM 26-00-00/901).
2. Ensure required distribution of serviceable extinguishers is maintained throughout the airplane.

OPERATIONS NOTE

1. All flight deck and cabin crew must be informed.

26-26-01 Portable Fire Extinguishers

26-26-01-01 Water Fire Extinguishers

26-26-01-01B Water Fire Extinguishers TJR to TJW

Interval	Installed	Required	Procedure
D	3	1	**(M) (P)**

May be inoperative or missing provided:

a. The inoperative fire extinguisher is tagged inoperative, removed from the installation location, and placed out of sight so it can not be mistaken for a functional unit.

b. The operative unit must be in the doghouse RH side fwd of door 4R.

MAINTENANCE (M)

1. Stow the out-of-service extinguisher in a place (possibly in a bag) where it will not be used by mistake, until it can be removed from the airplane at the next available maintenance base (AMM 26-00-00/901).
2. Ensure required distribution of serviceable extinguishers is maintained throughout the airplane.

OPERATIONS NOTE

1. All flight deck and cabin crew must be informed.

26-26-01 Portable Fire Extinguishers

26-26-01-01 Water Fire Extinguishers

TKA to TKF **26-26-01-01C Water Fire Extinguishers**

Interval	Installed	Required	Procedure
D	2	1	**(M) (P)**

One may be inoperative or missing provided:

a. The inoperative fire extinguisher is tagged inoperative, removed from the installation location, and placed out of sight so it can not be mistaken for a functional unit.

b. One operative unit must be in the stowage RH side aft of fwd cabin station 2R, or in the stowage RH side aft of mid-aft cabin station 4R.

MAINTENANCE (M)

1. Stow the out-of-service extinguisher in a place (possibly in a bag) where it will not be used by mistake, until it can be removed from the airplane at the next available maintenance base (AMM 26-00-00/901).
2. Ensure required distribution of serviceable extinguishers is maintained throughout the airplane.

OPERATIONS NOTE

1. All flight deck and cabin crew must be informed.

26-26-01 Portable Fire Extinguishers

26-26-01-02 Halon Fire Extinguishers

26-26-01-02-01 Main Cabin

26-26-01-02-01A Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
D	4	3	**(M) (P)**

One may be inoperative or missing provided:

a. The inoperative fire extinguisher is tagged inoperative, removed from the installation location, and placed out of sight so it can not be mistaken for a functional unit.

MAINTENANCE (M)

1. Stow the out-of-service extinguisher in a place (possibly in a bag) where it will not be used by mistake, until it can be removed from the airplane at the next available maintenance base (AMM 26-00-00/901).
2. Ensure required distribution of serviceable extinguishers is maintained throughout the airplane.

OPERATIONS NOTE

1. All flight deck and cabin crew must be informed.

26-26-01 Portable Fire Extinguishers

26-26-01-02 Halon Fire Extinguishers

26-26-01-02-01 Main Cabin

26-26-01-02-01B Cabin Version 77B1 TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
D	7	5	**(M) (P)**

Two may be inoperative or missing provided:

a. The inoperative fire extinguisher is tagged inoperative, removed from the installation location, and placed out of sight so it can not be mistaken for a functional unit.

MAINTENANCE (M)

1. Stow the out-of-service extinguisher in a place (possibly in a bag) where it will not be used by mistake, until it can be removed from the airplane at the next available maintenance base (AMM 26-00-00/901).
2. Ensure required distribution of serviceable extinguishers is maintained throughout the airplane.

OPERATIONS NOTE

1. All flight deck and cabin crew must be informed.

26-26-01 Portable Fire Extinguishers

26-26-01-02 Halon Fire Extinguishers

TJR to TJW, TKK to TKR, TKU to TKZ

26-26-01-02-02 OFCR

Interval	Installed	Required	Procedure
D	2	1	**(M) (P)**

One may be inoperative or missing provided:

a. The inoperative fire extinguisher is tagged inoperative, removed from the installation location, and placed out of sight so it can not be mistaken for a functional unit.

MAINTENANCE (M)

1. Stow the out-of-service extinguisher in a place (possibly in a bag) where it will not be used by mistake, until it can be removed from the airplane at the next available maintenance base (AMM 26-00-00/901).

OPERATIONS NOTE

1. All flight deck and cabin crew must be informed.

26-26-01 Portable Fire Extinguishers

26-26-01-02 Halon Fire Extinguishers

26-26-01-02-03 OFAR

TJR to TJW, TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
D	2	1	**(M) (P)**

One may be inoperative or missing provided:

a. The inoperative fire extinguisher is tagged inoperative, removed from the installation location, and placed out of sight so it can not be mistaken for a functional unit.

MAINTENANCE (M)

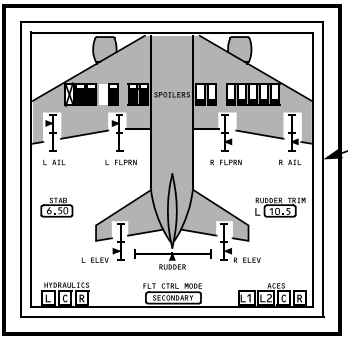
1. Stow the out-of-service extinguisher in a place (possibly in a bag) where it will not be used by mistake, until it can be removed from the airplane at the next available maintenance base (AMM 26-00-00/901).

OPERATIONS NOTE

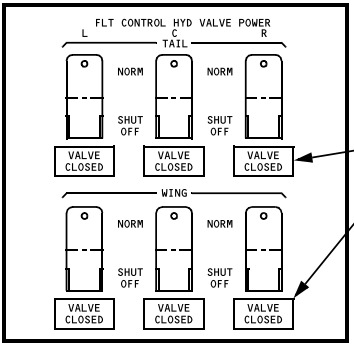
1. All flight deck and cabin crew must be informed.

FLIGHT CONTROLS

General Locations



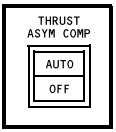
FLIGHT CONTROLS SYNOPTIC DISPLAY
27-00-01



FLIGHT CONTROL HYDRAULIC POWER PANEL
(P61)

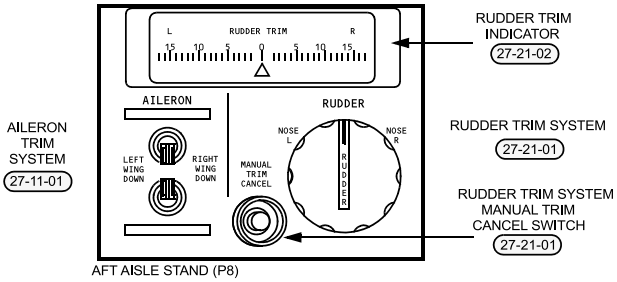
FLIGHT CONTROL HYDRAULIC SHUTOFF VALVES
27-02-07

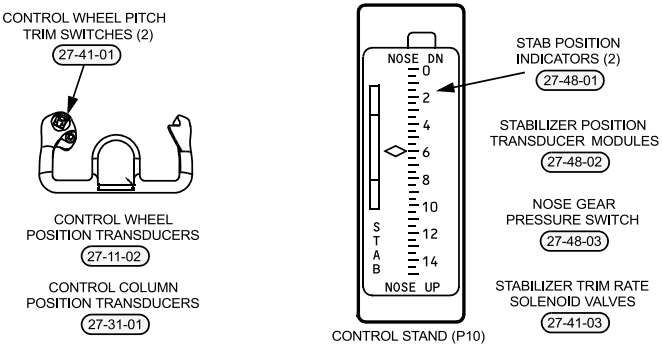
FLIGHT CONTROL HYDRAULIC SHUTOFF VALVE CLOSED LIGHTS
27-02-06

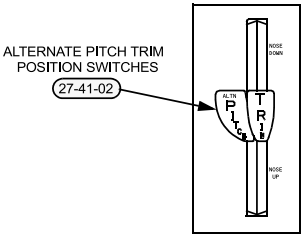


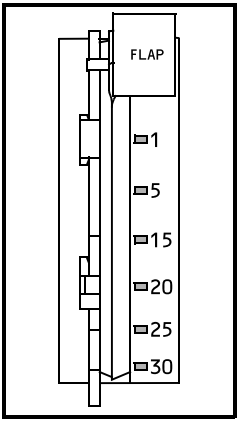
OVERHEAD PANEL
(P5)

THRUST ASYMMETRY COMPENSATION (TAC) FUNCTION
27-02-08


L
RUDDER TRIM
R
15 10 5 0 5 10 15
RUDDER TRIM INDICATOR
27-21-02
AILERON
RUDDER
AILERON TRIM SYSTEM
27-11-01
LEFT WING DOWN
RIGHT WING DOWN
NOSE L
NOSE R
MANUAL TRIM CANCEL
RUDDER
RUDDER TRIM SYSTEM
27-21-01
RUDDER TRIM SYSTEM MANUAL TRIM CANCEL SWITCH
27-21-01
AFT AISLE STAND (P8)


CONTROL WHEEL PITCH TRIM SWITCHES (2)
27-41-01
CONTROL WHEEL POSITION TRANSDUCERS
27-11-02
CONTROL COLUMN POSITION TRANSDUCERS
27-31-01
NOSE DN
0
2
4
6
8
10
12
14
STAB
NOSE UP
STAB POSITION INDICATORS (2)
27-48-01
STABILIZER POSITION TRANSDUCER MODULES
27-48-02
NOSE GEAR PRESSURE SWITCH
27-48-03
STABILIZER TRIM RATE SOLENOID VALVES
27-41-03
CONTROL STAND (P10)


ALTERNATE PITCH TRIM POSITION SWITCHES
27-41-02
NOSE DOWN
ALTN
PITCH
TRIM
NOSE UP



CONTROL STAND (P10)

FLAP/SLAT CONTROL LANES
27-03-01

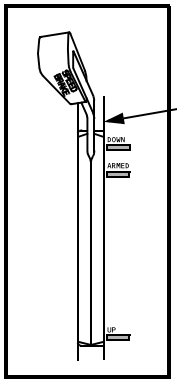
FLAP SECONDARY CONTROL
27-03-02

SLAT SECONDARY CONTROL
27-03-03

FLAP/SLAT SKEW SENSORS
27-59-01

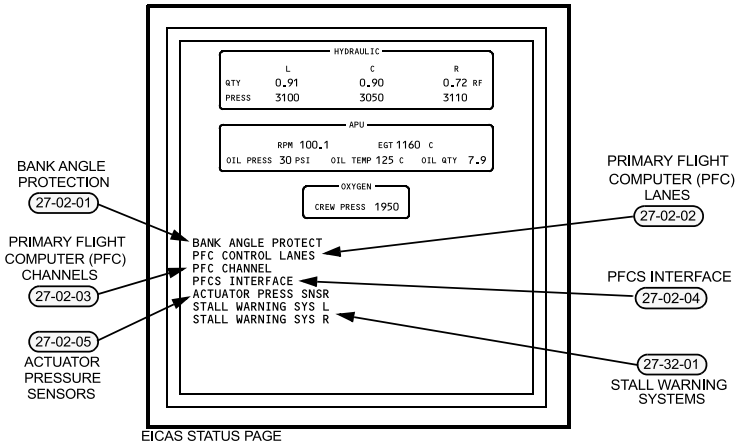
AUTOMATIC SPEEDBRAKE FUNCTION
27-62-01

SPEEDBRAKE LEVER POSITION TRANSDUCERS
27-61-01

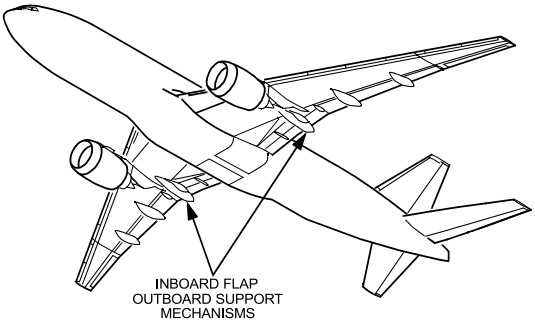


SPEEDBRAKE LEVER

CONTROL STAND (P10)



EICAS STATUS PAGE



INBOARD FLAP, OUTBOARD SUPPORT MECHANISM SPRINGS (NO. 3 & NO. 6 SUPPORTS)

27-51-01

27-00-01 Flight Controls Synoptic Display

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

OPERATIONS NOTE

1. For missing data on the Synoptic Display, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) 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.

27-02-01 Bank Angle Protection

27-02-01-02 With Standby Attitude Indicator P/N S231W120-4 or Equivalent Installed

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

MAINTENANCE NOTE

1. The Integrated Standby Flight Display (ISFD) is considered equivalent to the S231W120-4 Standby Attitude Indicator.

27-02-02 Primary Flight Computer (PFC) Lanes

Interval	Installed	Required	Procedure
C	9	7	**(P)**

27-02-03 Primary Flight Computer (PFC) Channels

Interval	Installed	Required	Procedure
A	3	2	**(M) (P) (MV)**

One may be inoperative deactivated provided:

a. Operations are limited to three flights before repairs are made.

b. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Determine which PFC channel is inoperative, then deactivate the inoperative channel (AMM 27-00-00/901).

1. Use the Maintenance Access Terminal (MAT) to review CMC data to determine which PFC is inoperative.
   A. Using the MAT, select EXISTING FLIGHT DECK EFFECTS.
   B. Locate the displayed PFC CHANNEL status message and the correlated maintenance messages.
      1) For 23-81001, 27-14018, 27-15000, 27-15001, 27-15002, 27-15100, 27-19101, 27-19201 or 27-19301 maintenance message displayed:
         a. The associated L PFC channel is inoperative.
      2) For 23-81002, 27-14019, 27-15003, 27-15004, 27-15005, 27-15101, 27-19102, 27-19202 or 27-19302 maintenance message displayed:
         a. The associated C PFC channel is inoperative.
      3) For 23-81003, 27-14020, 27-15006, 27-15007, 27-15008, 27-15102, 27-19103, 27-19203 or 27-19303 maintenance message displayed:
         a. The associated R PFC channel is inoperative.
2. Deactivate the inoperative PFC channel.
   A. For L PFC channel inoperative:
      1) Open and collar the PFC LANE 1, PFC LANE 2, and PFC LANE 3 circuit breakers located on PSA-L in the E1-6 rack.
   B. For C PFC channel inoperative:
      1) Open and collar the PFC LANE 1, PFC LANE 2, and PFC LANE 3 circuit breakers located on PSA-C in the E2-6 rack.

C. For R PFC channel inoperative:

1) Open and collar the PFC LANE 1, PFC LANE 2, and PFC LANE 3 circuit breakers located on PSA-R in the E5-1 rack.

3. When electrical power is shut down, open the BATT INTLK circuit breaker on the front panel of the associated PSA (prevents discharge of the PSA battery).

4. When electrical power is restored, close the BATT INTLK circuit breaker on the front panel of the associated PSA.

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.

27-02-04 PFCS Interface

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

May be inoperative provided:

a. Landing gear truck tilt pressure is verified to be normal before each departure.

Note: If the NO LAND 3 advisory message is displayed, approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Verify truck tilt pressure is normal before each departure (AMM 27-00-00/901).

1. Ensure landing gear lever is in the DOWN position.
2. Pressurize the center hydraulic system (AMM 29-11-00/201).
3. After 2 minutes, verify pressure readings for the L TRUCK TILT and R TRUCK TILT hydraulic lines are 2700 to 3200 psi on the LANDING GEAR ACTN/INDN Maintenance Page.

OPERATIONS NOTE

-300,-300ER 1. The NO LAND 3 advisory message may be displayed.

27-02-05 Actuator Pressure Sensors

Interval	Installed	Required	Procedure
B	7	6	**(P)**

One flaperon or rudder sensor may be inoperative.

27-02-06 Flight Control Hydraulic Shutoff Valve Systems

Interval	Installed	Required	Procedure
C	6	3	**(M) (P)**

May be inoperative provided:

a. Associated valve is deactivated open.

MAINTENANCE (M)

Note: The flight control hydraulic shutoff valve system includes the SOV and associated VALVE CLOSED light and FLT CONTROL VALVE advisory message.

Deactivate the associated hydraulic shutoff valve (SOV) in the open position (AMM 27-00-00/901).

1. Position associated overhead Maintenance Panel (P61) FLT CONTROL HYD POWER valve switch in the NORM position.
2. Open and collar the circuit breaker for the associated flight control hydraulic shutoff valve.
   A. For the L TAIL valve, open and collar P110 panel L FC SOV TAIL circuit breaker.
   B. For the L WING valve, open and collar P110 panel L FC SOV WG circuit breaker.
   C. For the C TAIL valve, open and collar P110 panel C FC SOV TAIL circuit breaker.
   D. For the C WING valve, open and collar P110 panel C FC SOV WG circuit breaker.
   E. For the R TAIL valve, open and collar P210 panel R FC SOV TAIL circuit breaker.
   F. For the R WING valve, open and collar P210 panel R FC SOV WG circuit breaker.
3. Gain access to the associated shutoff valve.

   Notes: 1. The L TAIL shutoff valve is forward of the inboard end of the flaperon on the left wing.
   2. The L WING shutoff valve is forward of the center of the flaperon on the left wing.
   3. The C TAIL and C WING shutoff valves are located on the aft bulkhead of the left main landing gear wheel well.

4. The R TAIL shutoff valve is located in the right main landing gear wheel well, on the top panel near the aft outboard corner.
5. The R WING shutoff valve is forward of the center of the flaperon on the right wing.

4. Manually position the lever on the associated shutoff valve to the open position.
5. Install lockwire through the holes provided on the lever and valve body to hold the shutoff valve lever in the open position.
6. If the FLT CONTROL VALVE advisory message remains displayed or the associated shutoff valve VALVE CLOSED light on the overhead Maintenance Panel (P61) remains illuminated after the valve is deactivated open:
   A. Electrically disconnect the deactivated valve.
      1) For the Left Tail shutoff valve, disconnect, cap and stow the electrical cable and connector DV27101.
      2) For the Left Wing shutoff valve, disconnect, cap and stow the electrical cable and connector DV27100.
      3) For the Right Tail shutoff valve, disconnect, cap and stow the electrical cable and connector DV27102.
      4) For the Right Wing shutoff valve, disconnect, cap and stow the electrical cable and connector DV27098.
      5) For the Center Tail shutoff valve, disconnect, cap and stow the electrical cable and connector DV27103.
      6) For the Center Wing shutoff valve, disconnect, cap and stow the electrical cable and connector DV27099.
7. Re-install the panels removed for valve access.

27-02-07 Primary Flight Computer DISC Light

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

27-02-08 Thrust Asymmetry Compensation (TAC) Function

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

27-02-08 Thrust Asymmetry Compensation (TAC) Function
27-02-08-01 THRUST ASYM COMP Switch Lights
27-02-08-01-01 OFF Light

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

27-02-08 Thrust Asymmetry Compensation (TAC) Function
27-02-08-01 THRUST ASYM COMP Switch Lights
27-02-08-01-02 AUTO Light

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

27-03-01 Flap/Slat Control Lanes

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

One may be inoperative provided:

a. Flap lever control position sensor is verified to operate normally.

b. Alternate control is verified to operate normally before each departure

MAINTENANCE (M)

Verify the flap lever control position sensor operates normally and before each departure, verify the alternate control for the flaps and slats operates normally (AMM 27-00-00/901).

1. Verify the flap lever control position sensor operates normally.
   A. Supply electrical power.
   B. Position flap control lever UP.
   C. On the FLAP/SLAT Maintenance page, confirm all four FLAP LEVER position indications are greater than 9.44.
2. Verify the alternate control for the flaps and slats operates normally before each departure.
   A. Use the alternate flap control to extend the flaps and slats (AMM 27-51-00/201).
      1) Push the control stand (P10) ALTN FLAPS ARM switch to ALTN.
      2) Position the control stand (P10) ALTN FLAPS selector to EXT.
   B. Verify the flaps extend to position 20 and the slats are in the midrange position on the EICAS display.
   C. Use the alternate flap control to retract the flaps and slats (AMM 27-51-00/201).
      1) Push the control stand (P10) ALTN FLAPS ARM switch to ALTN.
      2) Position the control stand (P10) ALTN FLAPS selector to RET.
   D. Verify the flaps and the slats are retracted on the EICAS display.
   E. Push the control stand ALTN FLAPS ARM switch to off.

27-03-02 Flap Secondary Control

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

May be inoperative provided:

a. Slat Secondary Control is verified to operate normally.

MAINTENANCE (M)

Verify Slat Secondary Control operates normally (AMM 27-00-00/901).

1. Supply electrical power to the airplane.
2. Use the MAT to override the flap secondary control mode inhibit.

   Note: The override inhibit will time-out in 15 seconds.
3. Move the flap lever to a selected position and ensure slats move accordingly.
4. Use the MAT to override the flap secondary control mode inhibit.
5. Move the flap control lever UP to retract the slats.

27-03-03 Slat Secondary Control

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

May be inoperative provided:

a. Flap Secondary Control is verified to operate normally.

MAINTENANCE (M)

Verify Flap Secondary Control operates normally (AMM 27-00-00/901).

1. Supply electrical power to the airplane.
2. Use the MAT to override the flap secondary control mode inhibit.

   Note: The override inhibit will time-out in 15 seconds.
3. Move the flap lever to a selected position and ensure flaps move accordingly.
4. Use the MAT to override the flap secondary control mode inhibit.
5. Move the flap control lever UP to retract the flaps.

27-11-01 Aileron Trim System

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

May be inoperative deactivated provided:

a. Aileron trim system is verified to be centered before departure.

b. Autopilot roll modes operate normally.

MAINTENANCE (M)

Note: For autopilot roll modes to operate normally, the following items must operate normally:

MEL Item	Associated Status Message
22-11-01C	AFDC L, C, R
22-11-02B	AUTOPILOT BACKDRV L, R
22-11-05-04-02	None
22-11-06-01B	None
22-11-06-08	None
22-11-06-09	None

Deactivate the aileron trim system (AMM 27-00-00/901).

1. For aileron trim centered (both control wheels at 0 ±0.5 units of trim):
   A. Open and collar the P110 panel AIL TRIM ACTR circuit breaker.
2. For aileron trim not centered (both control wheels not at 0 ±0.5 units of trim):
   A. Replace the trim actuator with a tool that holds the control wheels in the zero trim position.
      1) Remove the aileron trim actuator, saving the bolts, washers, nuts and bushings (AMM 27-11-09/401).
      2) Install the aileron trim actuator dummy link A27088-18:
         a. Adjust the dummy link to a length of 6 15/16 to 7 1/16 inches (6.937 to 7.063 inches) from center to center between the bolt holes.
         b. Install the dummy link in the position of the inoperative actuator, using the same bolts, washers, nuts, and bushings.
         c. Secure the trim actuator electrical connector to the dummy link with tape or wire tie.
3. Verify that both control wheels are centered (0 ±0.5 units of trim).

OPERATIONS (O)

1. Before departure, verify that both control wheels are centered (0 ±0.5 units of trim).

27-11-02 Control Wheel Position Transducers

Interval	Installed	Required	Procedure
C	6	5	**(P)**

27-11-03 Aileron Power Control Units (PCUs)

27-11-03-01 Aileron Power Control Units (PCUs)

Interval	Installed	Required	Procedure
A	4	3	**(M) (P)**

One may be inoperative provided:

a. Inoperative PCU is deactivated in the bypass mode.
b. Inoperative PCU blocking mode is verified to operate normally.
c. Ailerons are verified to operate normally.
d. Repairs are made within three flight days.

MAINTENANCE (M)

Deactivate the inoperative aileron PCU in the bypass mode, verify blocking mode operates normally and verify ailerons operate normally (AMM 27-00-00/901).

1. For an inoperative left aileron PCU:
   A. Open the Power Supply Assembly Center (PSA-C) in E2-6 rack AIL PCU circuit breaker.
   B. Open P110 panel AIL PCU LIB(BLK)/LOB(BYP) circuit breaker.
   C. Gain access to the left aileron PCUs.
   D. Verify blocking mode operates normally on the inoperative PCU.
   E. Deactivate the inoperative PCU in bypass mode.
      1) For an inoperative left inboard aileron PCU, collar the Power Supply Assembly Center (PSA-C) in E2-6 rack AIL PCU circuit breaker.
      2) For an inoperative left outboard aileron PCU, collar the P110 panel AIL PCU LIB(BLK)/LOB(BYP) circuit breaker.
      3) Close the operative aileron PCU circuit breaker.
2. For an inoperative right aileron PCU:
   A. Open the Power Supply Assembly Right (PSA-R) in E5-1 rack AIL PCU circuit breaker.
   B. Open the Power Supply Assembly Left (PSA-L) in E1-6 rack AIL PCU circuit breaker.
   C. Gain access to the right aileron PCUs.
   D. Verify blocking mode operates normally on the inoperative PCU.
   E. Deactivate the inoperative PCU in bypass mode.

1) For an inoperative right inboard aileron PCU, collar the Power Supply Assembly Right (PSA-R) in E5-1 rack AIL PCU circuit breaker.
2) For an inoperative right outboard aileron PCU, collar the Power Supply Assembly Left (PSA-L) in E1-6 rack AIL PCU circuit breaker.
3) Close the operative aileron PCU circuit breaker.

3. Check the operation of the ailerons.

Note: Do not do an Actuator Confidence Test, or an ACE Monitor Test, or L or R Aileron Actuator Confidence Tests.

4. Confirm the FLIGHT CONTROL SYS status message is not displayed.

OPERATIONS NOTE

1. When airspeed exceeds approximately 250 KIAS, air loads may cause the associated aileron to move slightly to a trailing-edge-up position while the opposite aileron will normally be commanded to a slight trailing-edge-down position. Some trim input may be necessary to correct for the resulting roll.

27-11-04 Flaperon Power Control Units (PCUs)

27-11-04-01 Flaperon Power Control Units (PCUs)

Interval	Installed	Required	Procedure
A	4	3	**(M) (P)**

One may be inoperative provided:

a. Inoperative PCU is deactivated in the bypass mode.

b. Flaperons are verified to operate normally.

c. Repairs are made within three flight days.

MAINTENANCE (M)

Deactivate the inoperative flaperon PCU in the bypass mode and verify flaperons operate normally (AMM 27-00-00/901).

1. For an inoperative left flaperon outboard PCU:
   A. Open and collar the Power Supply Assembly Left (PSA-L) in E1-6 rack FLPRN PCU circuit breaker.
2. For an inoperative left flaperon inboard PCU:
   A. Open and collar the Power Supply Assembly Right (PSA-R) in E5-1 rack FLPRN PCU circuit breaker.
3. For an inoperative right flaperon outboard PCU:
   A. Open and collar the Power Supply Assembly Center (PSA-C) in E2-6 rack FLPRN PCU circuit breaker.
4. For an inoperative right flaperon inboard PCU:
   A. Open P110 panel FLPRN PCU RIB(BYP) SPLRS 4 & 11 circuit breaker.
   B. Open P110 panel ACE-L2 PWR circuit breaker.
   C. Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to SHUT OFF.
   D. Disconnect, cap and stow the PCU electrical connector D4422P (WD 27-11-18). The connector is located in the Main Equipment Center on the left side of the E1-1 shelf near the forward cargo access door (station 408, connector position 71). DELETION

      Note: The ACTUATOR PRESS SNSR status message will be displayed. The airplane must also be dispatched using MEL Item 27-02-05.

   E. Close the open circuit breakers.

F. Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to NORM.

5. Check the operation of the flaperons.

Note: Do not do an Actuator Confidence Test, or an ACE Monitor Test, or L or R Flaperon Actuator Confidence Tests.

6. Confirm the FLIGHT CONTROL SYS status message is not displayed.

27-21-01 Rudder Trim System

27-21-01-01 Rudder Trim Control High Rate Function

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

27-21-01 Rudder Trim System

27-21-01-02 Rudder MANUAL TRIM CANCEL Switch

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

27-21-02 Rudder Trim Indicator

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

May be inoperative provided:

a. Rudder trim is verified centered before each departure.

OPERATIONS (O)

Before each departure, verify rudder trim is centered.

1. Push the rudder trim Manual Trim Cancel switch or rotate Rudder Trim selector as required to center the rudder pedals.
2. Verify the rudder is centered by confirming the left and right rudder pedals are evenly aligned or the Flight Control Synoptic display RUDDER TRIM indication is zero (within 0.2 units left or right).

27-31-01 Control Column Position Transducers

Interval	Installed	Required	Procedure
C	6	5	**(P)**

27-32-01 Stall Warning Systems

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

27-32-01 Stall Warning Systems

27-32-01-01 Stick Shakers

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

27-41-01 Control Wheel Pitch Trim Switches

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

27-41-02 Alternate Pitch Trim Position Switches

Interval	Installed	Required	Procedure
C	6	5	**(P)**

One may be inoperative provided:

a. Both control wheel pitch trim switches operate normally.

27-41-03 Stabilizer Trim Rate Solenoid Valves

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

27-48-01 STAB Position Indicators

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

One may be inoperative provided:

a. It is blanked or covered.

OPERATIONS (O)

1. For a blank inoperative indicator:
   A. No action is required.
2. For an illuminated inoperative indicator:
   A. Cover with tape or other material.

27-48-02 Stabilizer Position Transducer Modules

Interval	Installed	Required	Procedure
C	3	2	**(P)**

27-48-03 Nose Gear Pressure Switch

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

May be inoperative provided:

a. Stabilizer trim position is verified to be properly set before each departure.

MAINTENANCE NOTE

1. For a Nose Gear Pressure switch leaking pneumatically, isolate the switch (AMM 27-00-00/901).
   A. Install Landing Gear downlock pins (AMM 32-00-30/201).
   B. Install Landing Gear Door safety pins (AMM 32-00-15/201).
   C. Set the nose gear oleo service and pressure switch line shutoff valve to thefully closed position.
   D. Acquire a rig pin, J20003-6, and remove the attached flag.
   E. Install the rig pin in the rig pin hole to hold the shutoff valve in the closed position, and lockwire (MS20995C32) the rig pin to the valve body using the rig pin flag attachment hole.
   F. Remove Landing Gear Door safety pins (AMM 32-00-15/201).
   G. Remove Landing Gear downlock pins (AMM 32-00-30/201).

OPERATIONS (O)

1. Verify the stabilizer trim position is correct for the takeoff thrust, takeoff flaps, gross weight and center of gravity before each departure.

   Note: The STAB GREENBAND advisory message may be displayed.

   A. Confirm the FMC takeoff data has been correctly initialized (takeoff thrust, takeoff flaps, gross weight, center of gravity).
   B. Confirm the stabilizer trim is properly set to the position computed for the takeoff thrust, takeoff flaps, gross weight and center of gravity.

27-48-04 Nose Gear Pressure Transducer

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

May be inoperative provided:

a. Stabilizer trim position is verified to be properly set before each departure.

MAINTENANCE NOTE

1. For Nose Gear Pressure Transducer leaking pneumatically, isolate the transducer (AMM 27-00-00/901).
   A. Install Landing Gear downlock pins (AMM 32-00-30/201).
   B. Install Landing Gear Door safety pins (AMM 32-00-15/201).
   C. Set the nose gear oleo service and pressure switch line shutoff valve to the fully closed position.
   D. Acquire a rig pin, J20003-6, and remove the attached flag.
   E. Install the rig pin in the rig pin hole to hold the shutoff valve in the closed position, and lockwire (MS20995C32) the rig pin to the valve body using the rig pin flag attachment hole.
   F. Remove Landing Gear Door safety pins (AMM 32-00-15/201).
   G. Remove Landing Gear downlock pins (AMM 32-00-30/201).

OPERATIONS (O)

1. Verify the stabilizer trim position is correct for the takeoff thrust, takeoff flaps, gross weight and center of gravity before each departure.

   Note: The STAB GREENBAND advisory message may be displayed.

   A. Confirm the FMC takeoff data has been correctly initialized (takeoff thrust, takeoff flaps, gross weight, center of gravity).
   B. Confirm the stabilizer trim is properly set to the position computed for the takeoff thrust, takeoff flaps, gross weight and center of gravity.

27-51-01 Inboard Flap, Outboard Support Mechanism Springs (No. 3 & No. 6 Supports)

Interval	Installed	Required	Procedure
A	4	2	**(M) (P)**

One may be broken or missing on each support provided:

a. Broken springs are removed.

b. Remaining spring on each support is verified in place and not broken before each departure.

c. Operations are limited to fifteen departures before repairs are made.

MAINTENANCE (M)

Remove the broken springs and verify remaining spring is in place and not broken before each departure (AMM 27-00-00/901).

1. Supply electrical power (AMM 24-22-00/201).
2. Ensure the thrust reverser cowls are not open farther than the hold-open rod position.
3. Ensure the air-driven pump (ADP) door is fully open or fully closed.
4. Pressurize the center hydraulic system (AMM 29-11-00/201).
5. Extend the trailing edge flaps to the 30-unit position (AMM 27-51-00/201).
6. Remove power from the center hydraulic system (AMM 29-11-00/201).
7. Deactivate the trailing edge flaps (AMM 27-51-11/201).
8. Remove any broken No. 3 or No. 6 flap support springs (AMM 27-51-14/401).

   Note: For airplanes incorporating SB 777-57-0025 (PRR 61777-53 factory installed equivalent), a damper is installed on the spring assembly. For dispatch with only one spring in place, remove the damper and retain for subsequent repair action.
9. Verify the remaining spring on the associated No. 3 or No. 6 flap support mechanism is in place and not broken before each departure.
10. Return the airplane to its usual condition.
11. Reactivate the trailing edge flaps (AMM 27-51-00/201).
12. Ensure the air-driven pump (ADP) door is fully open or fully closed.
13. Pressurize the center hydraulic system (AMM 29-11-00/201).
14. Retract the trailing edge flaps (AMM 27-51-00/201).
15. Remove center hydraulic system power (AMM 29-11-00/201).

27-51-02 ALTN FLAPS ARM Switch ALTN Light

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

27-59-01 Flap/Slat Skew Sensors

Interval	Installed	Required	Procedure
C	28	14	**(P)**

27-61-01 Speedbrake Lever Position Transducers

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

27-61-02 Spoiler Auxiliary Retract Device (SARD) (-300/-300ER) -300,-300ER

Interval	Installed	Required	Procedure
A	2	1	**(P) (MV)**

One may be inoperative provided:

a. Associated passenger entry door 3 is considered inoperative.
b. Repairs are made within one flight day.

OPERATIONS NOTE

1. The airplane must also be dispatched using MEL Item 52-11-01.
   A. For spoiler 7 SARD inoperative:
      1) Overwing door 3L must be considered inoperative.
   B. For spoiler 8 SARD inoperative:
      1) Overwing door 3R must be considered inoperative.

27-61-03 Spoiler Power Control Units (PCUs)

27-61-03-01 Spoiler Power Control Units (PCUs)

Interval	Installed	Required	Procedure
A	14	12	**(M) (O) (P) (MV)**

One symmetrical pair (except 4/11) may be inoperative provided:

a. Symmetrical pair is deactivated in the retracted position.
b. Remaining spoilers are verified to operate normally.
c. Appropriate performance adjustments are applied.
d. Repairs are made within three flight days.

Note: Dispatch relief does not apply for a fault condition that is reported to cause asymmetric roll input, or for a spoiler panel detached from the actuator, or for a spoiler not in the retracted position.

MAINTENANCE (M)

Deactivate the symmetrical spoiler pair in the retracted position and verify remaining spoilers operate normally (AMM 27-00-00/901).

1. Confirm speedbrake lever is in DOWN position.
2. For spoilers 1/14 or 7/8, open the Power Supply Assembly Center (PSA-C) in E2-6 rack ACE PWR circuit breaker.
3. For spoilers 2/13, open the Power Supply Assembly Left (PSA-L) in E1-6 rack ACE PWR circuit breaker.
4. For spoilers 3/12 or 6/9, open the Power Supply Assembly Right (PSA-R) in E5-1 rack ACE PWR circuit breaker.
5. For spoilers 5/10, open P110 panel ACE-L2 PWR circuit breaker.
6. Depressurize all three hydraulic systems.
7. Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to SHUT OFF.
8. Gain access to the spoiler pair PCUs.
9. Disconnect, cap and stow the inoperative PCU electrical connectors.
10. Close any opened access panels.
11. Close the open circuit breakers.
12. Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to NORM.
13. Check the operation of the spoilers.

    Note: Do not do the ACE Monitor Test.

14. Confirm the FLIGHT CONTROL SYS status message is not displayed.

OPERATIONS (O)

Note: The SPOILERS advisory message will be displayed.

1. Apply the appropriate performance adjustments.

Takeoff Runway/ Obstacle	Minimum Takeoff Field Length	Landing Field Length	Minimum Landing Field Length	
4,990 kg	1,890 m	10,886 kg	1,981 m	-200,-200ER
4,990 kg	1,463 m	11,340 kg	No penalty	-300
5,443 kg	1,859 m	14,062 kg	No penalty	-300ER

27-62-01 Automatic Speedbrake Function

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative deactivated provided:

a. Landing gear truck tilt pressure is verified to be normal before each flight.

b. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate the automatic speedbrake and verify truck tilt pressure is normal before each flight (AMM 27-00-00/901).

1. Open and collar left power supply assembly (PSA-L) AUTO SPDBRK (L, R) circuit breaker.

   Note: The PSA-L is located in the E1-6 rack in the Main Equipment Center.

2. Open and collar right power supply assembly (PSA-R) AUTO SPDBRK (L, R) circuit breaker.

   Note: The PSA-R is located in the E5-1 rack aft of the forward cargo door.

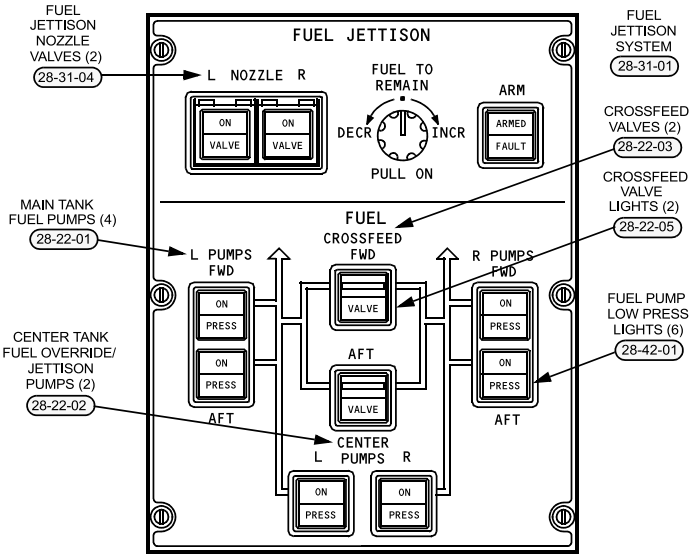
3. Ensure landing gear lever is in the DOWN position.
4. Pressurize the center hydraulic system.
5. After 2 minutes, verify pressure readings for the L TRUCK TILT and R TRUCK TILT hydraulic lines are 2700 to 3200 psi on the LANDING GEAR ACTN/INDN EICAS Maintenance Page.

OPERATIONS (O)

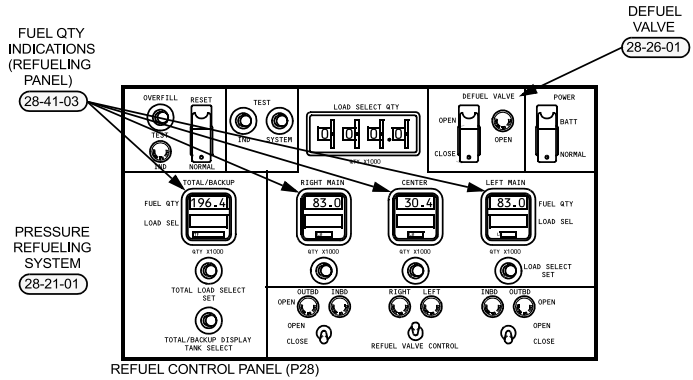
1. Base landing performance on manual speedbrakes.
2. Extend speedbrakes manually for rejected takeoff and landing.
   A. For rejected takeoff:
      1) Simultaneously close the thrust levers, disengage the autothrottles and apply maximum manual wheel brakes or verify operation of RTO autobrakes.
      2) Manually raise SPEED BRAKE lever.
      3) Apply the maximum amount of reverse thrust consistent with conditions.
   B. For landing:
      1) Use the AUTO SPEEDBRAKE Non-Normal Checklist.

FUEL

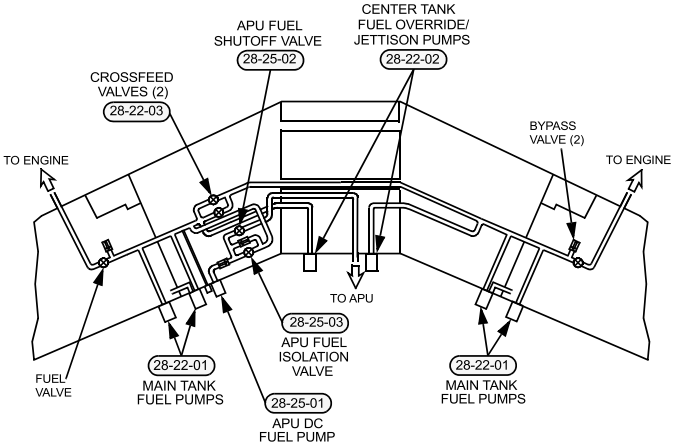
General Locations



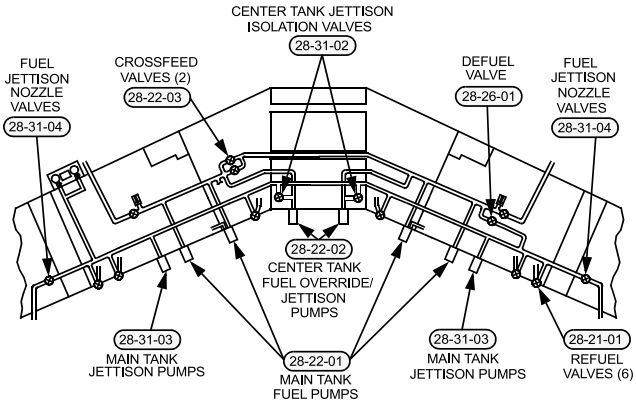
FUEL MANAGEMENT PANEL (P5)



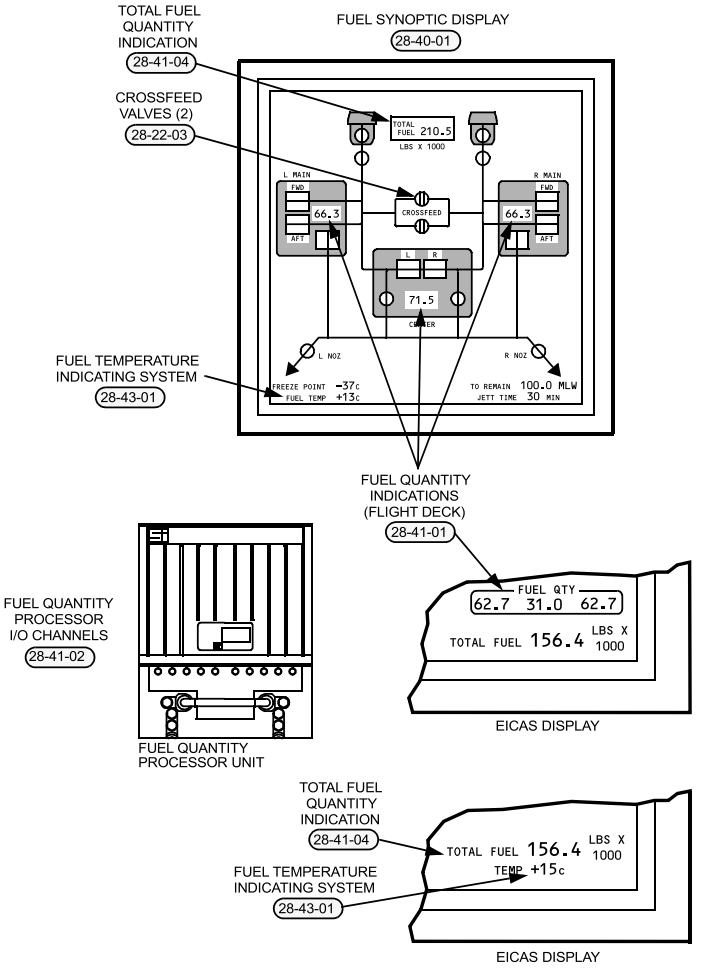
REFUEL CONTROL PANEL (P28)

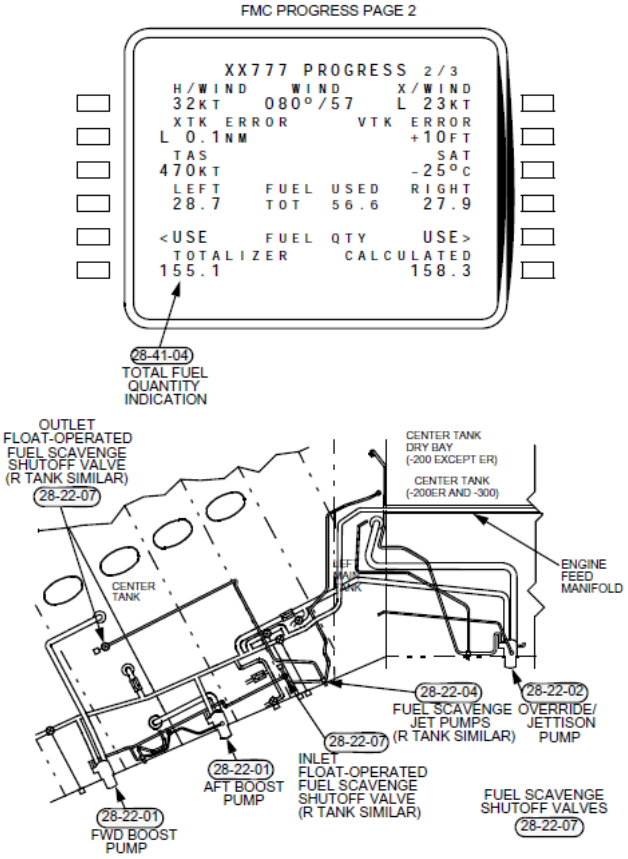


ENGINE & APU FUEL FEED SYSTEMS



FUEL JETTISON & DEFUEL SYSTEMS


TOTAL FUEL QUANTITY INDICATION
28-41-04
FUEL SYNOPTIC DISPLAY
28-40-01
CROSSFEED VALVES (2)
28-22-03
TOTAL FUEL 210.5
LBS X 1000
L MAIN
FWD
66.3
AFT
CROSSFEED
R MAIN
FWD
66.3
AFT
L
R
71.5
CENTER
L NOZ
R NOZ
FUEL TEMPERATURE INDICATING SYSTEM
28-43-01
FREEZE POINT -37C
FUEL TEMP +13C
TO REMAIN 100.0 MLW
JETT TIME 30 MIN
FUEL QUANTITY INDICATIONS (FLIGHT DECK)
28-41-01
FUEL QUANTITY PROCESSOR I/O CHANNELS
28-41-02
FUEL QUANTITY PROCESSOR UNIT
FUEL QTY
62.7 31.0 62.7
TOTAL FUEL 156.4 LBS X 1000
EICAS DISPLAY
TOTAL FUEL QUANTITY INDICATION
28-41-04
FUEL TEMPERATURE INDICATING SYSTEM
28-43-01
TOTAL FUEL 156.4 LBS X 1000
TEMP +15C
EICAS DISPLAY


FMC PROGRESS PAGE 2
XX777 PROGRESS 2/3
H/WIND WIND X/WIND
32KT 080°/57 L 23KT
XTK ERROR VTK ERROR
L 0.1NM +10FT
TAS SAT
470KT -25°C
LEFT FUEL USED RIGHT
28.7 TOT 56.6 27.9
<USE FUEL QTY USE>
TOTALIZER CALCULATED
155.1 158.3
28-41-04
TOTAL FUEL QUANTITY INDICATION
OUTLET FLOAT-OPERATED FUEL SCAVENGE SHUTOFF VALVE (R TANK SIMILAR)
28-22-07
CENTER TANK DRY BAY (-200 EXCEPT ER)
CENTER TANK (-200ER AND -300)
ENGINE FEED MANIFOLD
CENTER TANK
28-22-04
FUEL SCAVENGE JET PUMPS (R TANK SIMILAR)
28-22-02
OVERRIDE/ JETTISON PUMP
28-22-07
28-22-01
AFT BOOST PUMP
INLET FLOAT-OPERATED FUEL SCAVENGE SHUTOFF VALVE (R TANK SIMILAR)
28-22-01
FWD BOOST PUMP
FUEL SCAVENGE SHUTOFF VALVES
28-22-07

28-11-01 Sump Drain Valves

28-11-01-01 Surge Tanks

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

May be inoperative provided:

a. There is no evidence of leakage.

MAINTENANCE (M)

1. Visually inspect exterior surface location of the inoperative sump drain valve to verify that there is no evidence of fuel leakage (AMM 28-00-00/901).

28-11-01 Sump Drain Valves

28-11-01-02 Main and Center Tanks

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

One may be inoperative provided:

a. There is no evidence of leakage.

MAINTENANCE (M)

Verify that there is no evidence of leakage and make sure water does not collect in the tank (AMM 28-00-00/901) .

1. Visually inspect exterior surface location of the inoperative sump drain valve to verify that there is no evidence of fuel leakage.
2. Use procedure stated in AMM 28-00-00/901 to prevent water accumulation in the associated tank.

28-21-01 Pressure Fueling System

28-21-01-01 Refuel Valves

28-21-01-01A Refuel Valve Closed

Interval	Installed	Required	Procedure
C	6	0	**(M) (P)**

May be inoperative closed.

MAINTENANCE (M)

1. For one refuel valve inoperative closed per tank:
   A. Use normal refueling procedures (refueling time for the associated tank will be increased).
2. For more than one refuel valve inoperative closed per tank (AMM 12-11-01/301):
   A. Verify that fuel load for the associated tank does not exceed the tank capacity.
   B. Manually open one or both of associated tank's refuel valves.

      Note: OVERFILL PROTECTION IS INOPERATIVE. THE FUEL SYSTEM WILL NOT STOP THE REFUEL OPERATION AT A SET FUEL QUANTITY. STOP THE FUELING SOURCE AT THE DESIRED QUANTITY FOR THE ASSOCIATED TANK.

   C. Refuel the associated tank, stopping the fueling source at the desired fuel quantity.
   D. Manually close the refuel valve(s).

28-21-01 Pressure Fueling System

28-21-01-01 Refuel Valves

28-21-01-01B Refuel Valve Open

Interval	Installed	Required	Procedure
C	6	5	**(M) (P) (MV)**

One main tank refuel valve may be inoperative open provided:

a. Fuel jettison system is considered inoperative.
b. Appropriate performance adjustments are applied.

Note: 1. The airplane must also be dispatched using MEL litem 28-31-01.

2. NGS is inoperative and the NITROGEN GEN PERF status message will be displayed. TKK to TKR, TKU to TKZ

MAINTENANCE (M)

Use alternate refueling procedures (AMM 12-11-01/301).

1. Verify that fuel load for the associated tank does not exceed the tank capacity.

   Note: OVERFILL PROTECTION IS INOPERATIVE. THE FUEL SYSTEM WILL NOT STOP THE REFUEL OPERATION AT A SET FUEL QUANTITY. STOP THE FUELING SOURCE AT THE DESIRED QUANTITY FOR THE ASSOCIATED TANK.

2. Refuel the associated tank, stopping the fueling source at the desired fuel quantity.

DELETION

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-01 Fuel Quantity Indicators

Interval	Installed	Required	Procedure
C	4	0	**(M) (P)**

MAINTENANCE (M)

Refuel airplane using one of the following procedures (AMM 28-00-00/901).

1. Refuel using the Integrated Refuel Panel (P28) TOTAL/BACKUP fuel quantity indicatior (if operating).
2. Refuel using the flight deck EICAS or Fuel Synoptic Display fuel quantity indications (if operating).
3. Determine the associated tank quantity using the FMC calculated Fuel on CDU PROGRESS page from the previous flight and the operating fuel quantity indications. Then refuel the associated tank with a known quantity of fuel. A fuel tanker's fuel indication may be used if verified by the associated tank's fuel measuring sticks.
4. Defuel the associated tank (AMM 28-26-00/201) and service with a known quantity of fuel (AMM 12-11-01/301).
5. Determine the fuel quantity using the associated tank's measuring sticks (Fuel Measuring Stick Manual).

Note: The fuel quantity measuring sticks may not give accurate results until 5 to 15 minutes after refueling operations are complete.

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-02 Load Select System

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

Note: Any function which operates normally may be used.

MAINTENANCE (M)

Note: The Load Select System includes the four Load Select Indicators, the Load Select Quantity Selector, the four Load Select Set Switches and the Total/Backup Display Tank Select Switch.

Use procedure for refueling (AMM 12-11-01/301).

1. Utilize individual operative components of pressure refueling system to refuel.

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-03 Refuel Valve Lights

Interval	Installed	Required	Procedure
C	6	0	**(M) (P)**

May be inoperative provided:

a. Overfill function operates normally.
b. Associated refuel valve is verified closed after each refueling.

MAINTENANCE (M)

Verify the associated valve is closed after each refueling (AMM 28-00-00/901).

1. Monitor and ensure associated refuel valve is closed after refueling.

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-04 Overfill Function (Normal/Reset Switch, Light and Test)

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

May be inoperative provided:

a. Refuel valve lights operate normally.
b. Verify refuel valves close when appropriate during refueling.

MAINTENANCE (M)

Verify refuel valves close when appropriate during refueling (AMM 28-00-00/901).

1. Monitor and ensure the refuel valves close appropriately during refueling.

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-05 Defuel Valve Function (Switch and Open Light)

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

May be inoperative provided:

a. Defuel valve is considered inoperative.

MAINTENANCE NOTE

1. The airplane must also be dispatched using MEL Item 28-26-01.

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-06 Power Switch–BATT Position

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

MAINTENANCE NOTE

1. Refueling using battery mode will not be available.

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-07 Test Functions (Indication and System)

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

MAINTENANCE NOTE

1. The integrated refuel panel also accomplishes an indication test during initial power up.

28-21-01 Pressure Fueling System

28-21-01-02 Integrated Refuel Panel

28-21-01-02-08 Refuel Valve Switches

Interval	Installed	Required	Procedure
C	3	0	**(P)**

May be inoperative provided:

a. Load select system operates normally.

b. Overfill function operates normally.

28-21-03 Refuel Adapters

Interval	Installed	Required	Procedure
C	4	2	**(M) (P)**

One at each refuel station may be inoperative provided:

a. There are no fuel leaks.

MAINTENANCE (M)

1. During refuel operations, inspect the area around the associated refuel adapter and verify fuel leaks are not present.

28-22-01 Main Tank Fuel Pumps

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

One may be inoperative deactivated provided:

a. Both main tank quantity indications operate normally.

b. Flight remains within 120 minutes of landing at a suitable airport.

MAINTENANCE (M)

Deactivate the inoperative fuel pump (AMM 28-00-00/901).

1. For left main tank forward pump inoperative:
   A. Open and collar P110 panel L FWD FUEL BOOST PUMP circuit breaker.
   B. Open and collar P310 panel L FWD FUEL BOOST PUMP CTRL circuit breaker.
   C. Open and collar P320 panel L FWD FUEL BOOST PUMP GND SVCE circuit breaker.
2. For left main tank aft pump inoperative:
   A. Open and collar P110 panel L AFT FUEL BOOST PUMP circuit breaker.
   B. Open and collar P110 panel L AFT FUEL BOOST PUMP CTRL circuit breaker.
3. For right main tank forward pump inoperative:
   A. Open and collar P110 panel R FWD FUEL BOOST PUMP L AC SECT 2 circuit breaker.
   B. Open and collar P110 panel R FWD FUEL BOOST PUMP CTRL circuit breaker.
   C. Open and collar P210 panel R FWD FUEL BOOST PUMP R XFR circuit breaker.
4. For right main tank aft pump inoperative:
   A. Open and collar P210 panel R AFT FUEL BOOST PUMP circuit breaker.
   B. Open and collar P210 panel R AFT FUEL BOOST PUMP CTRL circuit breaker.

28-22-01 Main Tank Fuel Pumps

28-22-01-01 PUMPS Switch PRESS Lights

Interval	Installed	Required	Procedure
C	4	0	**(P)**

28-22-01 Main Tank Fuel Pumps

28-22-01-02 PUMPS Switch ON Lights

Interval	Installed	Required	Procedure
C	4	0	**(P)**

28-22-02 Center Tank Fuel Override/Jettison Pumps

28-22-02A One Pump Inoperative

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

One may be inoperative deactivated provided:

a. Inoperative pump is deactivated.

b. Center tank quantity indication operates normally.

c. With center tank fueled, fuel quantity remaining in main wing tanks is adequate to reach a suitable airport if remaining center pump fails at any time.

d. Center tank fuel is accounted for in the airplane weight and balance in the event center tank fuel cannot be used.

MAINTENANCE (M)

Deactivate the inoperative pump (AMM 28-00-00/901).

1. For left center tank pump inoperative:
   A. Open and collar P110 panel CTR L OVRD FUEL PUMP CTRL circuit breaker.
2. For right center pump inoperative:
   A. Open and collar P210 panel CTR R OVRD FUEL PUMP CTRL circuit breaker.

OPERATIONS (O)

For center tank fuel:

1. For center tank fuel required, ensure suitable airports can be reached with fuel in the main wing tanks in the event remaining center tank pump fails.
2. Reduce the maximum zero fuel weight limit by the amount of center tank fuel.
3. Adjust the zero fuel weight center of gravity forward limit based on the amount of center tank fuel.
4. When operative center tank pump switch is ON:
   A. Set one crossfeed switch open.
5. When operative center tank pump switch is OFF:
   A. Set crossfeed switches closed.

28-22-02 Center Tank Fuel Override/Jettison Pumps

28-22-02B Both Pumps Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative deactivated provided:

a. Pumps are deactivated.

b. Center tank quantity indication operates normally.

c. Center tank fuel is considered unusable and is accounted for in the airplane weight and balance.

Note: Fuel loading and usage limitations are for usable fuel.

MAINTENANCE (M)

Deactivate the inoperative pumps (AMM 28-00-00/901).

1. For left center tank pump inoperative:
   A. Open and collar P110 panel CTR L OVRD FUEL PUMP CTRL circuit breaker.
2. For right center pump inoperative:
   A. Open and collar P210 panel CTR R OVRD FUEL PUMP CTRL circuit breaker.

OPERATIONS (O)

1. For center tank fuel:

   Notes: 1. Center tank fuel is considered unusable. FMC fuel prediction for INSUFFICIENT FUEL message on CDU will not be accurate.
   2. FUEL IN CENTER advisory message may be displayed.

   A. Reduce the maximum zero fuel weight limit by the amount of center tank fuel.

   B. Adjust the zero fuel weight center of gravity forward limit based on the amount of center tank fuel.

28-22-02 Center Tank Fuel Override/Jettison Pumps

28-22-02-01 PUMPS Switch PRESS Lights

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

28-22-02 Center Tank Fuel Override/Jettison Pumps

28-22-02-02 PUMPS Switch ON Lights

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

28-22-03 Fuel Crossfeed Valves

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

One may be inoperative deactivated closed provided:

a. Remaining valve is verified to operate normally before each departure.

MAINTENANCE (M)

Note: The fuel imbalance pointer may appear if the affected crossfeed valve is in the open position when deactivated.

Deactivate the affected crossfeed valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. For forward crossfeed valve inoperative:
   A. Open and collar P110 panel FUEL XFEED VLV FWD circuit breaker.
   B. Gain access to the crossfeed valve (left main wheel well - rear spar of the left center tank).
   C. Disconnect, cap and stow the electrical connector (DV28163).
   D. Move the manual override handle to the CLOSED position and lockwire.
3. For aft crossfeed valve inoperative:
   A. Open and collar P310 panel FUEL XFEED VLV AFT circuit breaker.
   B. Gain access to the crossfeed valve (left main wheel well - rear spar of the left center tank).
   C. Disconnect, cap and stow the electrical connector (DV28263).
   D. Move the manual override handle to the CLOSED position and lockwire.
4. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

OPERATIONS (O)

Notes: 1. The associated FUEL CROSSFEED AFT or FWD advisory message will be displayed for the crossfeed valve deactivated in the closed position. After the fuel pumps are ON, the fuel synoptic will incorrectly display a green flow line for the associated crossfeed valve. The EICAS display will have expanded fuel indications.

2. Before engine start, if the APU is used, the FUEL PRESS ENG L caution message and the FUEL PUMP R AFT and FUEL PUMP R FWD advisory messages will be displayed.

Before each departure, perform the following fuel crossfeed valve check:

1. Position operative crossfeed valve on and verify associated FUEL CROSSFEED AFT or FWD advisory message does not display.
2. Position operative crossfeed valve off and verify associated FUEL CROSSFEED AFT or FWD advisory message does not display.

28-22-03 Fuel Crossfeed Valves

28-22-03-01 CROSSFEED Switch VALVE Lights

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

28-22-04 Fuel Scavenge Systems

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

May be inoperative provided:

a. Center tank quantity indication operates normally.

b. Appropriate amount of center tank fuel is considered unusable and is accounted for in the airplane weight and balance.

Note: Fuel loading and usage limitations are for usable fuel.

Note: 1. The fuel scavenge system includes the jet pump and two shutoff valves in each system. If the jet pump is inoperative or either shutoff valve is inoperative closed, the associated system is inoperative. For more than one system shutoff valve inoperative open, use MEL Item 28-22-07B. TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

2. The main tank fuel jettison system's pumps power the fuel scavenge system's jet pumps and the shutoff valves are not installed. If a jet pump is inoperative, or if the associated main taink jettison pump is inoperative, or if the fuel jettison system is deactivated, the associated fuel scavenge system is inoperative. TKO,P,Q,R, TKU to TKZ

DELETION

OPERATIONS (O)

Notes: 1. For one scavenge system inoperative, fuel imbalance may occur when center tank fuel is scavenged.

2. When dispatching with this MEL item, the additional fuel penalty of 320 kg as stated in FCOM L.10 Fuel System - Loading can be neglected. TJR to TJW, TKA to TKF,K,L,M,N

1. For -200: -200

A. For center tank fuel required:

1) Increase flight planning fuel by 362 kg.

2) Reduce the maximum zero fuel weight limit by 362 kg.

3) Adjust the zero fuel weight center of gravity forward limit 0.1% MAC aft.

B. For center tank fuel not required:

1) Center tank fuel at or above 362 kg.

a. Reduce the maximum zero fuel weight limit by 362 kg.

b. Adjust the zero fuel weight center of gravity forward limit 0.1% MAC aft.

2) Center tank fuel less than 362 kg.
   a. Reduce the maximum zero fuel weight limit by the amount of center tank fuel.
   b. Adjust the zero fuel weight center of gravity forward limit based on the amount of center tank fuel.

-200ER 2. For -200ER:

A. For center tank fuel required:
   1) Increase flight planning fuel by 1,090 kg.
   2) Reduce the maximum zero fuel weight limit by 1,090 kg.
   3) Adjust the zero fuel weight center of gravity forward limit 0.2% MAC aft.

B. For center tank fuel not required:
   1) Center tank fuel at or above 1,090 kg:
      a. Reduce the maximum zero fuel weight limit by 1,090 kg.
      b. Adjust the zero fuel weight center of gravity forward limit 0.2% MAC aft.
   2) Center tank fuel less than 1,090 kg:
      a. Reduce the maximum zero fuel weight limit by the amount of center tank fuel.
      b. Adjust the zero fuel weight center of gravity forward limit based on the amount of center tank fuel.

-300 3. For -300:

A. For center tank fuel required:
   1) Increase flight planning fuel by 1,090 kg.
   2) Reduce the maximum zero fuel weight limit by 1,090 kg.
   3) Adjust the zero fuel weight center of gravity forward limit 0.1% MAC aft.

B. For center tank fuel not required:
   1) Center tank fuel at or above 1,090 kg:
      a. Reduce the maximum zero fuel weight limit by 1,090 kg.
      b. Adjust the zero fuel weight center of gravity forward limit 0.1% MAC aft.
   2) Center tank fuel less than 1,090 kg:
      a. Reduce the maximum zero fuel weight limit by the amount of center tank fuel.
      b. Adjust the zero fuel weight center of gravity forward limit based on the amount of center tank fuel.

-300ER 4. For -300ER:

A. For center tank fuel required:
   1) Increase flight planning fuel by 1,225 kg.
   2) Reduce the maximum zero fuel weight limit by 1,225 kg.
   3) Adjust the zero fuel weight center of gravity forward limit 0.1% MAC aft.

B. For center tank fuel not required:
   1) Center tank fuel at or above 1,225 kg:
      a. Reduce the maximum zero fuel weight limit by 1,225 kg.
      b. Adjust the zero fuel weight center of gravity forward limit 0.1% MAC aft.
   2) Center tank fuel less than 1,225 kg:
      a. Reduce the maximum zero fuel weight limit by the amount of center tank fuel.
      b. Adjust the zero fuel weight center of gravity forward limit based on the amount of center tank fuel.

28-22-05 Crossfeed VALVE Lights

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to item 28-22-03-01.

28-22-06 Fuel Shutoff Valve Battery

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

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

28-22-07 Fuel Scavenge Shutoff Valves (Without Fuel Scavenge System Improvement)

28-22-07A One Inoperative

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

One valve may be inoperative open provided:

a. Fuel quantity system operates normally.

b. Remaining valve on that side is verified to operate normally.

MAINTENANCE (M)

Verify the fuel scavenge shutoff valve on the associated side operates normally (AMM 28-00-00/901).

1. For an outlet fuel scavenge shutoff valve inoperative open:

   A. Verify proper operation of the inlet shutoff valve.

      Note: For an outlet shutoff valve inoperative closed, use MEL Item 28-22-04.

      1) Defuel (AMM 28-26-00/201) the main fuel tank on the same side as the inoperative shutoff valve if necessary to achieve the following fuel quantity:

-200
- Less than 9,500 kg.

TKK,L,M,N
- Less than 24,400 kg.

TJR to TJW, TKA to TKF
- Less than 13,700 kg.

      2) Refuel (AMM 12-11-01/301)the center fuel tank if necessary to achieve the following fuel quantity:

-200
- More than 6,000 kg.

TKK,L,M,N
- More than 21,800 kg.

TJR to TJW, TKA to TKF
- More than 22,400 kg.

      3) For left side shutoff valve inoperative:

         a. Position Fuel Panel (P5) L PUMPS FWD and AFT switches ON.

            i) For APU operating, position Fuel Panel (P5) CENTER PUMPS L switch ON.

      4) For right side shutoff valve inoperative:

         a. Position Fuel Panel (P5) R PUMPS FWD and AFT switches ON.

5) Allow the pumps to operate for 30 minutes.
   a. Ensure the main tank fuel quantity on the same side as the failed valve does not increase.
   b. Ensure the center tank fuel quantity does not increase.
6) Position Fuel Panel (P5) Fuel Pump switches off.

2. For an inlet fuel scavenge shutoff valve inoperative open:

A. Verify proper operation of the outlet shutoff valve.

Note: For an inlet shutoff valve inoperative closed, use MEL Item 28-22-04.

1) Refuel (AMM 12-11-01/301) the center fuel tank if necessary to achieve the fuel quantity greater than 455 kg).
2) Refuel (AMM 12-11-01/301) the main fuel tank on the same side as the inoperative shutoff valve If necessary to achieve the following fuel quantity:

-200

– More than 10,800 kg.

TJR to TJW, TKA to TKF

– More than 15,100 kg.

TKK,L,M,N

– More than 25,500 kg.

3) For left side shutoff valve inoperative:
   a. Position Fuel Panel (P5) L PUMPS FWD and AFT switches ON.
      i) For APU operating, position Fuel Panel (P5) CENTER PUMPS L switch ON.
4) For right side shutoff valve inoperative:
   a. Position Fuel Panel (P5) R PUMPS FWD and AFT switches ON.
5) Allow the pumps to operate for 30 minutes.
   a. Verify the main tank fuel quantity on the same side as the failed valve does not increase.
   b. Verify the center tank fuel quantity does not increase.
6) Position Fuel Panel (P5) Fuel Pump switches off.

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

28-22-07 Fuel Scavenge Shutoff Valves (Without Fuel Scavenge System Improvement)

28-22-07B More Than One Inoperative

Interval	Installed	Required	Procedure
C	4	0	**(M) (P) (MV)**

May be inoperative open provided:

a. Center tank remains empty.

b. Center tank quantity indication operates normally.

MAINTENANCE (M)

For center tank fuel, defuel the center tank (AMM 28-00-00/901).

1. Defuel the center tank to a quantity less than 400 lb (180 kg) by the suction defueling procedure (AMM 28-26-00/201).
2. If required, drain fuel to achieve required fuel amount.

28-25-01 APU DC Fuel Pump

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

May be inoperative deactivated.

MAINTENANCE (M)

Deactivate the APU DC fuel pump (AMM 28-00-00/901).

1. Open and collar P310 panel DC FUEL PUMP circuit breaker.

28-25-02 APU Fuel Shutoff Valve

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Valve is deactivated closed.
b. Other procedures do not require the use of the APU.
c. Flight remains within 180 minutes of landing at a suitable airport.

MAINTENANCE (M)

Deactivate the APU fuel shutoff valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. Open and collar P11 panel APU FUEL S/O VALVE circuit breaker.
3. Gain access to the APU shutoff valve actuator located in the left main wheel well (rear spar of left center tank).
4. Disconnect, cap and stow the electrical connector (DV28023).
5. Move the manual override handle to the CLOSED position and lockwire.
6. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

OPERATIONS (O)

1. Dispatch is not allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R

MEL Item	Associated Status Message
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.
3. Verify the backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

28-25-03 APU Fuel Isolation Valve

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

May be inoperative deactivated closed.

MAINTENANCE (M)

Deactivate the APU fuel isolation valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. Open and collar P310 panel APU FUEL ISLN VLV circuit breaker.
3. Gain access to the APU fuel isolation valve actuator located in the left main wheel well (rear spar of the left center tank).
4. Disconnect, cap and stow the electrical connector (DV28031).
5. Move the manual override handle to the CLOSED position and lockwire.
6. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

28-26-01 Defuel Valve

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

May be inoperative secured closed.

MAINTENANCE (M)

Deactivate the defuel valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. Open and collar P310 panel DFUEL VLVS circuit breaker.
3. Gain access to the defuel valve actuator located in the right main wheel well (rear spar of the right center tank).
4. Disconnect, cap and stow the electrical connector (DV28310).
5. Move the manual override handle to the CLOSED position and lockwire.
6. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

28-31-01 Fuel Jettison System

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

28-31-01-01 Without Fuel Scavenge System Improvement

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Jettison system is deactivated.

b. Jettison nozzle valves are secured closed.

c. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate the jettison system and secure the jettison nozzle valves in the closed position (AMM 28-00-00/901).

1. Open and collar P110 panel L FUEL JETT PUMP CTRL, L FUEL JETT ISLN VLV and L FUEL JETT NOZ VLV circuit breakers.
2. Open and collar P210 panel R FUEL JETT PUMP CTRL, R FUEL JETT ISLN VLV and R FUEL JETT NOZ VLV circuit breakers.
3. For left jettison nozzle valve:
   A. Gain access to the left jettison nozzle valve actuator through associated access door.
   B. Disconnect, cap and stow the electrical connector (DV28166).
   C. Confirm the manual override handle is in the CLOSED position and lockwire.
   D. Close access door.
4. For right jettison nozzle valve:
   A. Gain access to the right jettison nozzle valve actuator through associated access door.
   B. Disconnect, cap and stow the electrical connectors (DV28266).
   C. Confirm the manual override handle is in the CLOSED position and lockwire.
   D. Close access door.

OPERATIONS (O)

Note: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be

displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

1. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 1,800 kg (for fuel that would be burned during a return-to-land procedure). TJR to TJW, TKA to TKF

2. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 2,450 kg (for fuel that would be burned during a return-to-land procedure). TKK,L,M,N

28-31-01 Fuel Jettison System

28-31-01-01 Without Fuel Scavenge System Improvement TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

28-31-01-01-01 ARM Switch FAULT Light

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

28-31-01 Fuel Jettison System

28-31-01-01 Without Fuel Scavenge System Improvement TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

28-31-01-01-02 ARM Switch ARMED Light

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

28-31-01 Fuel Jettison System

28-31-01-02 With Fuel Scavenge System Improvement TKO,P,Q,R, TKU to TKZ

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Jettison system is deactivated.
b. Jettison nozzle valves are secured closed.
c. Fuel scavenge system is considered inoperative.
d. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 28-22-04.

MAINTENANCE (M)

Deactivate the jettison system and secure the jettison nozzle valves in the closed position (AMM 28-00-00/901).

1. Open and collar P110 panel L FUEL JETT PUMP CTRL, L FUEL JETT ISLN VLV and L FUEL JETT NOZ VLV circuit breakers.
2. Open and collar P210 panel R FUEL JETT PUMP CTRL, R FUEL JETT ISLN VLV and R FUEL JETT NOZ VLV circuit breakers.
3. For left jettison nozzle valve:
   A. Gain access to the left jettison nozzle valve actuator through associated access door.
   B. Disconnect, cap and stow the electrical connector (DV28166).
   C. Confirm the manual override handle is in the CLOSED position and lockwire.
   D. Close access door.
4. For right jettison nozzle valve:
   A. Gain access to the right jettison nozzle valve actuator through associated access door.
   B. Disconnect, cap and stow the electrical connectors (DV28266).
   C. Confirm the manual override handle is in the CLOSED position and lockwire.
   D. Close access door.

OPERATIONS (O)

Note: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

1. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 2,450 kg (for fuel that would be burned during a return-to-land procedure).

28-31-01 Fuel Jettison System

28-31-01-02 With Fuel Scavenge System Improvement TKO,P,Q,R, TKU to TKZ

28-31-01-02-01 ARM Switch FAULT Light

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

28-31-01 Fuel Jettison System

28-31-01-02 With Fuel Scavenge System Improvement TKO,P,Q,R, TKU to TKZ

28-31-01-02-02 ARM Switch ARMED Light

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

28-31-02 Center Tank Jettison Isolation Valves

-200 **28-31-02-01 -200**

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

May be inoperative provided:

a. Inoperative valve is secured closed.

MAINTENANCE (M)

Deactivate and secure the inoperative jettison isolation valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. For left jettison isolation valve inoperative:
   A. Open and collar P110 panel L FUEL JETT ISLN VLV circuit breaker.
   B. Gain access to the jettison isolation valve actuator located in the left main wheel well (rear spar of the left center tank).
   C. Disconnect, cap and stow the electrical connector (DV28165).
   D. Move the manual override handle to the CLOSED position and lockwire.
3. For right jettison isolation valve inoperative:
   A. Open and collar P210 panel R FUEL JETT ISLN VLV circuit breaker.
   B. Gain access to the jettison isolation valve actuator located in the right main wheel well (rear spar of the right center tank).
   C. Disconnect, cap and stow the electrical connector (DV28265).
   D. Move the manual override handle to the CLOSED position and lockwire.
4. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

28-31-02 **Center Tank Jettison Isolation Valves**

28-31-02-02 **-200ER, -300, -300ER Without Fuel Scavenge System Improvement** TJR to TJW, TKA to TKF,K, L,M,N

28-31-02-02A **Fuel Jettison System Deactivated**

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

May be inoperative provided:

a. Inoperative valve is secured closed.

b. Fuel jettison system is considered inoperative.

c. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL item 28-31-01-01.

MAINTENANCE (M)

Secure the inoperative jettison isolation valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. For left jettison isolation valve:
   A. Open and collar P110 panel L FUEL JETT ISLN VLV circuit breaker.
   B. Gain access to the jettison isolation valve actuator located in the left main wheel well (rear spar of the left center tank).
   C. Disconnect, cap and stow the electrical connector (DV28165).
   D. Move the manual override handle to the CLOSED position and lockwire.
3. For right jettison isolation valve:
   A. Open and collar P210 panel R FUEL JETT ISLN VLV circuit breaker.
   B. Gain access to the jettison isolation valve actuator located in the right main wheel well (rear spar of the right center tank).
   C. Disconnect, cap and stow the electrical connector (DV28265).
   D. Move the manual override handle to the CLOSED position and lockwire.
4. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

DELETION

28-31-02 Center Tank Jettison Isolation Valves

TJR to TJW, TKA to TKF,K, L,M,N

28-31-02-02 -200ER, -300, -300ER Without Fuel Scavenge System Improvement

28-31-02-02B Main Tank Jettison Operative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Inoperative valve is secured closed.

b. Appropriate gross weight and center-of-gravity adjustments are applied.

MAINTENANCE (M)

Deactivate and secure the inoperative jettison isolation valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. For left jettison isolation valve inoperative:
   A. Open and collar P110 panel L FUEL JETT ISLN VLV circuit breaker.
   B. Gain access to the jettison isolation valve actuator located in the left main wheel well (rear spar of the left center tank).
   C. Disconnect, cap and stow the electrical connector (DV28165).
   D. Move the manual override handle to the CLOSED position and lockwire.
3. For right jettison isolation valve inoperative:
   A. Open and collar P210 panel R FUEL JETT ISLN VLV circuit breaker.
   B. Gain access to the jettison isolation valve actuator located in the right main wheel well (rear spar of the right center tank).
   C. Disconnect, cap and stow the electrical connector (DV28265).
   D. Move the manual override handle to the CLOSED position and lockwire.
4. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

OPERATIONS (O)

TJR to TJW

1. For -200ER:
   A. For dispatch with center tank fuel greater than 9,980 kg and Gross Weight exceeding 208,650 kg:
      1) Center-of-Gravity (CG) must be aft of 22% MAC for takeoff.

B. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 1,800 kg (for fuel that would be burned during a return-to-land procedure).

2. For -300: TKA to TKF

A. For dispatch with center tank fuel and Gross Weight exceeding 238,000 kg:

1) Center-of-Gravity (CG) must be aft of 17% MAC for takeoff.

B. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 1,800 kg (for fuel that would be burned during a return-to-land procedure).

3. For -300ER: TKK,L,M,N

A. For dispatch with center tank fuel and Gross Weight exceeding 252,200 kg:

1) Center-of-Gravity (CG) must be aft of 21% MAC for takeoff.

B. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 2,450 kg (for fuel that would be burned during a return-to-land procedure).

28-31-02 Center Tank Jettison Isolation Valves

28-31-02-03 With Fuel Scavenge System Improvement TKO,P,Q,R, TKU to TKZ

28-31-02-03A Fuel Jettison System Deactivated

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

May be inoperative provided:

a. Inoperative valve is secured closed.

b. Fuel jettison system is considered inoperative.

c. Fuel scavenge system is considered inoperative.

d. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL item 28-31-01-02.

MAINTENANCE (M)

Secure the inoperative jettison isolation valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. For left jettison isolation valve:

A. Open and collar P110 panel L FUEL JETT ISLN VLV circuit breaker.

B. Gain access to the jettison isolation valve actuator located in the left main wheel well (rear spar of the left center tank).

C. Disconnect, cap and stow the electrical connector (DV28165).

D. Move the manual override handle to the CLOSED position and lockwire.

3. For right jettison isolation valve:

A. Open and collar P210 panel R FUEL JETT ISLN VLV circuit breaker.

B. Gain access to the jettison isolation valve actuator located in the right main wheel well (rear spar of the right center tank).

C. Disconnect, cap and stow the electrical connector (DV28265).

D. Move the manual override handle to the CLOSED position and lockwire.

4. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

DELETION

28-31-02 Center Tank Jettison Isolation Valves

TKO,P,Q,R, TKU to TKZ

28-31-02-03 With Fuel Scavenge System Improvement

28-31-02-03B Main Tank Jettison Operative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Inoperative valve is secured closed.

b. Appropriate gross weight and center-of-gravity adjustments are applied.

MAINTENANCE (M)

Deactivate and secure the inoperative jettison isolation valve in the closed position (AMM 28-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. For left jettison isolation valve inoperative:

A. Open and collar P110 panel L FUEL JETT ISLN VLV circuit breaker.

B. Gain access to the jettison isolation valve actuator located in the left main wheel well (rear spar of the left center tank).

C. Disconnect, cap and stow the electrical connector (DV28165).

D. Move the manual override handle to the CLOSED position and lockwire.

3. For right jettison isolation valve inoperative:
   A. Open and collar P210 panel R FUEL JETT ISLN VLV circuit breaker.
   B. Gain access to the jettison isolation valve actuator located in the right main wheel well (rear spar of the right center tank).
   C. Disconnect, cap and stow the electrical connector (DV28265).
   D. Move the manual override handle to the CLOSED position and lockwire.
4. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

OPERATIONS (O)

1. For -300ER:
   A. For dispatch with center tank fuel and Gross Weight exceeding 252,200 kg:
      1) Center-of-Gravity (CG) must be aft of 21% MAC for takeoff.
   B. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 2,450 kg (for fuel that would be burned during a return-to-land procedure).

28-31-03 Main Tanks Jettison Pumps

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

28-31-03-01 Without Fuel Scavenge System Improvement

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Inoperative pump is deactivated.

b. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate the inoperative pump(s) (AMM 28-00-00/901).

1. For left main tank jettison pump inoperative:
   A. Open and collar P110 panel L FUEL JETT PUMP CTRL circuit breaker.
2. For right main tank jettison pump inoperative:
   A. Open and collar P210 panel R FUEL JETT PUMP CTRL circuit breaker.

OPERATIONS (O)

TJR to TJW, TKA to TKF

1. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus center tank fuel (which would be jettisoned during a return-to-land procedure), plus 1,800 kg (for fuel that would be burned during a return-to-land procedure)

TKK,L,M,N

2. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus center tank fuel (which would be jettisoned during a return-to-land procedure), plus 2,450 kg (for fuel that would be burned during a return-to-land procedure).

28-31-03 Main Tanks Jettison Pumps

TKO,P,Q,R, TKU to TKZ

28-31-03-02 With Fuel Scavenge System Improvement

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Inoperative pump is deactivated.

b. Fuel scavenge system is considered inoperative.

c. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 28-22-04.

MAINTENANCE (M)

Deactivate the inoperative pump(s) (AMM 28-00-00/901).

1. For left main tank jettison pump inoperative:
   A. Open and collar P110 panel L FUEL JETT PUMP CTRL circuit breaker.
2. For right main tank jettison pump inoperative:
   A. Open and collar P210 panel R FUEL JETT PUMP CTRL circuit breaker.

OPERATIONS (O)

1. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus center tank fuel (which would be jettisoned during a return-to-land procedure), plus 2,450 kg (for fuel that would be burned during a return-to-land procedure).

28-31-04 Fuel Jettison Nozzle Valves

TJA,B,C,D,G,H,

28-31-04-01 Without Fuel Scavenge System Improvement

TJR to TJW, TKA to TKF,K,L,M,N

28-31-04-01A One Inoperative

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

One may be inoperative secured closed.

MAINTENANCE (M)

Secure the inoperative fuel jettison nozzle valve in the closed position (AMM 28-00-00/901).

1. For left jettison nozzle valve inoperative:
   A. Open and collar P110 panel L FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the left jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connector (DV28166).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.
2. For right jettison nozzle valve inoperative:
   A. Open and collar P210 panel R FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the right jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connectors (DV28266).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.

28-31-04 Fuel Jettison Nozzle Valves

28-31-04-01 Without Fuel Scavenge System Improvement

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF,K,L,M,N

28-31-04-01B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Both jettison nozzle valves are secured closed.
b. Jettison system is deactivated.
c. Appropriate performance penalties are applied.

MAINTENANCE (M)

Secure the fuel jettison nozzle valves in the closed position and deactivate the jettison system (AMM 28-00-00/901).

1. For left jettison nozzle valve:
   A. Open and collar P110 panel L FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the left jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connector (DV28166).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.
2. For right jettison nozzle valve:
   A. Open and collar P210 panel R FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the right jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connectors (DV28266).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.
3. Deactivate the fuel jettison system.
   A. Open and collar P110 panel L FUEL JETT PUMP CTRL and L FUEL JETT ISLN VLV circuit breakers.
   B. Open and collar P210 panel R FUEL JETT PUMP CTRL and R FUEL JETT ISLN VLV circuit breakers.

OPERATIONS (O)

Note: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

-200ER,-300 1. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 1,800 kg (for fuel that would be burned during a return-to-land procedure).

TKK,L,M,N 2. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 2,450 kg (for fuel that would be burned during a return-to-land procedure).

28-31-04 Fuel Jettison Nozzle Valves

TJA,B,C,D,G,H, **28-31-04-01 Without Fuel Scavenge System Improvement**

TJR to TJW, TKA to TKF,K,L,M,N **28-31-04-01-01 Switch VALVE Lights**

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

28-31-04 Fuel Jettison Nozzle Valves

TJA,B,C,D,G,H, **28-31-04-01 Without Fuel Scavenge System Improvement**

TJR to TJW, TKA to TKF,K,L,M,N **28-31-04-01-02 Switch ON Lights**

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

28-31-04 Fuel Jettison Nozzle Valves

28-31-04-02 With Fuel Scavenge System Improvement TKO,P,Q,R, TKU to TKZ

28-31-04-02A One Inoperative

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

One may be inoperative secured closed.

MAINTENANCE (M)

Secure the inoperative fuel jettison nozzle valve in the closed position (AMM 28-00-00/901).

1. For left jettison nozzle valve inoperative:
   A. Open and collar P110 panel L FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the left jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connector (DV28166).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.
2. For right jettison nozzle valve inoperative:
   A. Open and collar P210 panel R FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the right jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connectors (DV28266).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.

28-31-04 Fuel Jettison Nozzle Valves

TKO,P,Q,R, TKU to TKZ

28-31-04-02 With Fuel Scavenge System Improvement

28-31-04-02B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Both jettison nozzle valves are secured closed.
b. Jettison system is deactivated.
c. Fuel scavenge system is considered inoperative.
d. Appropriate performance penalties are applied.

Note: The airplane must also be dispatched using MEL Item 28-22-04.

MAINTENANCE (M)

Secure the fuel jettison nozzle valves in the closed position and deactivate the jettison system (AMM 28-00-00/901).

1. For left jettison nozzle valve:
   A. Open and collar P110 panel L FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the left jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connector (DV28166).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.
2. For right jettison nozzle valve:
   A. Open and collar P210 panel R FUEL JETT NOZ VLV circuit breaker.
   B. Gain access to the right jettison nozzle valve actuator through associated access door.
   C. Disconnect, cap and stow the electrical connectors (DV28266).
   D. Confirm the manual override handle is in the CLOSED position and lockwire.
   E. Close access door.
3. Deactivate the fuel jettison system:
   A. Open and collar P110 panel L FUEL JETT PUMP CTRL and L FUEL JETT ISLN VLV circuit breakers.

B. Open and collar P210 panel R FUEL JETT PUMP CTRL and R FUEL JETT ISLN VLV circuit breakers.

OPERATIONS (O)

Note: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

1. Limit the takeoff weight to the maximum climb limited landing weight at the departure airport, plus 2,450 kg (for fuel that would be burned during a return-to-land procedure).

28-31-04 Fuel Jettison Nozzle Valves

28-31-04-02 With Fuel Scavenge System Improvement TKO,P,Q,R, TKU to TKZ

28-31-04-02-01 Switch VALVE Lights

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

28-31-04 Fuel Jettison Nozzle Valves

28-31-04-02 With Fuel Scavenge System Improvement TKO,P,Q,R, TKU to TKZ

28-31-04-02-02 Switch ON Lights

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

28-40-01 Fuel Synoptic Display

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

May be inoperative provided:

a. Individual fuel quantity indications required for dispatch operate normally.

OPERATIONS NOTE

1. If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) 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.

28-41-01 Fuel Quantity Indications (Flight Deck)

28-41-01-01 Center Tank

Interval	Installed	Required	Procedure
B	1	0	**(M) (O) (P) (MV)**

One may be inoperative provided:

a. Main tank fuel quantity indications operate normally.

b. Fuel quantity in center tank is verified using the IRP indication or fuel measuring sticks.

c. All pumps for the center tank operate normally.

d. Fuel flow Indications operate normally.

e. FMC FUEL is initialized with the known total fuel quantity.

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

g. Appropriate gross weight and center-of-gravity adjustments are applied. -200ER,-300, -300ER

Note: The airplane must also be dispatched using MEL Item 28-41-04.

MAINTENANCE (M)

Verify the fuel quantity in the center tank using one of the following methods (AMM 28-00-00/901).

1. Use the center tank's Integrated Refuel Panel (IRP) (P28) quantity indication (if operating).
2. Refuel using the FMC Calculated Fuel on CDU Progress page 2 from previous flight and operating fuel quantity indications to determine the center tank quantity. Then refuel the center tank with a known quantity of fuel. A fuel tanker’s fuel indication may be used if verified by the center tank’s fuel measuring sticks.
3. Defuel the centre tank (AMM 28-26-00/201) and service with a known quantity of fuel (AMM 12-11-01/301).
4. Determine the fuel quantity using the centre tank's measuring sticks (Fueling Instruction Handbook).

   Note: The fuel quantity measuring sticks may not give accurate results until 5 to 15 minutes after refueling operations are complete.

OPERATIONS (O)

Note: FUEL IN CENTER and FUEL LOW CENTER advisory messages will not be displayed when appropriate.

1. Total fuel quantity must be calculated and manually initialized on the FMC PERF INIT page.

   Notes: 1. The total fuel quantity indication will be inoperative.
   2. The FMC CALCULATED fuel quantity will be blank prior to manual initialization.

   A. Manually enter the total fuel quantity on the PERF INIT page. MANUAL will be displayed next to the entered fuel quantity.

      Note: The manually entered total fuel quantity and the takeoff speeds may blank after engine start.

   B. Before and after engine start, verify the fuel quantity entered is displayed under the CALCULATED fuel quantity display on the PROGRESS page 2.

2. Flight crew should monitor FMC Calculated fuel and the operative fuel tank quantity indications to ensure usages are normal and to derive the amount of fuel in the tank with the inoperative quantity indication when necessary.

3. Apply appropriate gross weight and center-of-gravity restrictions.

-200ER
   A. For gross weight exceeding 225,000 kg:

      1) Center-of-Gravity must be aft of 20% MAC for takeoff.

-300
   B. For gross weight exceeding 243,000 kg:

      1) Center-of-Gravity must be aft of 16% MAC for takeoff.

-300ER
   C. For gross weight exceeding 266,000 kg:

      1) Center-of-Gravity must be aft of 19.4% MAC for takeoff.

4. The flight must remain with 180 minutes of landing at a suitable airport.

5. The FUEL LOW CENTER advisory message will not operate. When FUEL PUMP CENTER L or R advisory messages are displayed, accomplish the FUEL PUMP CENTER L or R Non-Normal Checklist.

6. If it is necessary to jettison fuel enroute:

   Note: Selection of fuel jettison with a fuel quantity indication inoperative causes all FMC performance and VNAV data to become invalid. If VNAV is the current active pitch mode of the Autopilot Flight Director System (AFDS), the AFDS pitch mode will fail with a resulting master caution light illumination, AUTOPILOT caution message and amber bar through the pitch annunciation on the Primary Flight Display (PFD).

   A. Fuel jettison system maximum landing weight and fuel to remain automatic shutoff functions will be inoperative.

   B. FUEL AUTO JETTISON caution message will be displayed. Accomplish the Manual FUEL AUTO JETTISON Non-Normal Checklist.

DELETION

28-41-01 Fuel Quantity Indications (Flight Deck)

28-41-01-02 Main Tanks

28-41-01-02-01 Without Fuel Scavenge System Improvement

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF,K,L,M,N

Interval	Installed	Required	Procedure
B	2	1	**(M) (O) (P) (MV)**

One may be inoperative provided:

a. Center tank fuel quantity indication operates normally.

b. Fuel quantity in associated tank is verified using the IRP indication or fuel measuring sticks.

c. All pumps for the associated tank operate normally.

d. Fuel flow Indications operate normally.

e. FMC FUEL is initialized with the known total fuel quantity.

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

g. Appropriate gross weight and center-of-gravity adjustments are applied. TJR to TJW, TKA to TKF,K,L,M,N

Note: The airplane must also be dispatched using MEL Item 28-41-04.

MAINTENANCE (M)

Verify the fuel quantity in the tank associated with the inoperative quantity indication using one of the following methods (AMM 28-00-00/901).

1. Use the associated tank's Integrated Refuel Panel (IRP) (P28) quantity indication (if operating).
2. Refuel using the FMC Calculated Fuel on CDU Progress page 2 from previous flight and operating fuel quantity indications to determine the associated tank quantity. Then refuel the associated tank with a known quantity of fuel. A fuel tanker's fuel indication may be used if verified by the associated tank's fuel measuring sticks.
3. Defuel the associated tank (AMM 28-26-00/201) and service with a known quantity of fuel (AMM 12-11-01/301).
4. Determine the fuel quantity using the associated tank's measuring sticks (Fueling Instruction Handbook).

   Note: The fuel quantity measuring sticks may not give accurate results until 5 to 15 minutes after refueling operations are complete.

OPERATIONS (O)

Notes: 1. FUEL IMBALANCE advisory message may be displayed erroneously or may not display with an actual fuel imbalance.

2. If the FUEL IMBALANCE advisory message displays, to prevent unnecessary fuel balancing, the crew should not accomplish the FUEL IMBALANCE checklist unless an actual fuel imbalance can be confirmed.

1. Total fuel quantity must be calculated and manually initialized on the FMC PERF INIT page.

   Notes: 1. The total fuel quantity indication will be inoperative.
   2. The FMC CALCULATED fuel quantity will be blank prior to manual initialization.

   A. Manually enter the total fuel quantity on the PERF INIT page. MANUAL will be displayed next to the entered fuel quantity.

      Note: The manually entered total fuel quantity and the takeoff speeds may blank after engine start.

   B. Before and after engine start, verify the fuel quantity entered is displayed under the CALCULATED fuel quantity display on the PROGRESS page 2.

2. Flight crew should monitor FMC Calculated fuel and the operative fuel tank quantity indications to ensure usages are normal and to derive the amount of fuel in the tank with the inoperative quantity indication when necessary.

3. Apply appropriate gross weight and center-of-gravity restrictions.

-200ER
   A. For gross weight exceeding 225,000 kg:
      1) Center-of-Gravity must be aft of 20% MAC for takeoff.

-300
   B. For gross weight exceeding 243,000 kg:
      1) Center-of-Gravity must be aft of 16% MAC for takeoff.

-300ER
   C. For gross weight exceeding 266,000 kg:
      1) Center-of-Gravity must be aft of 19.4% MAC for takeoff.

4. The flight must remain with 180 minutes of landing at a suitable airport.

5. If it is necessary to jettison fuel enroute:

   Note: Selection of fuel jettison with a fuel quantity indication inoperative causes all FMC performance and VNAV data to become invalid. If VNAV is the current active pitch mode of the Autopilot Flight Director System (AFDS), the AFDS pitch mode will fail with a resulting master caution light illumination, AUTOPILOT caution message and amber bar through the pitch annunciation on the Primary Flight Display (PFD).

   A. Fuel jettison system maximum landing weight and fuel to remain automatic shutoff functions will be inoperative.

   B. FUEL AUTO JETTISON caution message will be displayed. Accomplish the Manual FUEL AUTO JETTISON Non-Normal Checklist.

28-41-01 Fuel Quantity Indications (Flight Deck)

28-41-01-02 Main Tanks

28-41-01-02-02 With Fuel Scavenge System Improvement

TKO,P,Q,R, TKU to TKZ

Interval	Installed	Required	Procedure
B	2	1	**(M) (O) (P) (MV)**

One may be inoperative provided:

a. Center tank fuel quantity indication operates normally.
b. Fuel quantity in associated tank is verified by an alternate procedure.
c. All pumps for the associated tank operate normally.
d. Fuel flow Indications operate normally.
e. FMC FUEL is initialized with the known total fuel quantity.
f. Flight remains within 180 minutes of landing at a suitable airport.
g. Fuel scavenge system is considered inoperative.
h. Appropriate gross weight and center-of-gravity adjustments are applied.

Note: 1. The airplane must also be dispatched using MEL Item 28-41-04.

2. The airplane must also be dispatched using MEL Item 28-22-04.

MAINTENANCE (M)

Verify the fuel quantity in the tank associated with the inoperative quantity indication using one of the following methods (AMM 28-00-00/901).

1. Use the associated tank's Integrated Refuel Panel (IRP) (P28) quantity indication (if operating).
2. Refuel using the FMC Calculated Fuel on CDU Progress page 2 from previous flight and operating fuel quantity indications to determine the associated tank quantity. Then refuel the associated tank with a known quantity of fuel. A fuel tanker's fuel indication may be used if verified by the associated tank's fuel measuring sticks.
3. Defuel the associated tank (AMM 28-26-00/201) and service with a known quantity of fuel (AMM 12-11-01/301).
4. Determine the fuel quantity using the associated tank's measuring sticks (Fuel Measuring Stick Manual).

   Note: The fuel quantity measuring sticks may not give accurate results until 5 to 15 minutes after refueling operations are complete.

OPERATIONS (O)

Notes: 1. FUEL IMBALANCE advisory message may be displayed erroneously or may not display with an actual fuel imbalance.

2. If the FUEL IMBALANCE advisory message displays, to prevent unnecessary fuel balancing, the crew should not accomplish the FUEL IMBALANCE checklist unless an actual fuel imbalance can be confirmed.

1. Total fuel quantity must be calculated and manually initialized on the FMC PERF INIT page.

   Notes: 1. The total fuel quantity indication will be inoperative.

   2. The FMC CALCULATED fuel quantity will be blank prior to manual initialization.

   A. Manually enter the total fuel quantity on the PERF INIT page. MANUAL will be displayed next to the entered fuel quantity.

      Note: The manually entered total fuel quantity and the takeoff speeds may blank after engine start.

   B. Before and after engine start, verify the fuel quantity entered is displayed under the CALCULATED fuel quantity display on the PROGRESS page 2.

2. Flight crew should monitor FMC Calculated fuel and the operative fuel tank quantity indications to ensure usages are normal and to derive the amount of fuel in the tank with the inoperative quantity indication when necessary.

3. Apply appropriate gross weight and center-of-gravity restrictions.

-200ER
   A. For gross weight exceeding 225,000 kg:

      1) Center-of-Gravity must be aft of 20% MAC for takeoff.

-300
   B. For gross weight exceeding 243,000 kg:

      1) Center-of-Gravity must be aft of 16% MAC for takeoff.

-300ER
   C. For gross weight exceeding 266,000 kg:

      1) Center-of-Gravity must be aft of 19.4% MAC for takeoff.

4. The flight must remain with 180 minutes of landing at a suitable airport.

5. If it is necessary to jettison fuel enroute:

   Note: Selection of fuel jettison with a fuel quantity indication inoperative causes all FMC performance and VNAV data to become invalid. If VNAV is the current active pitch mode of the Autopilot Flight Director System (AFDS), the AFDS pitch mode will fail with a resulting master caution light illumination, AUTOPILOT caution message and amber bar through the pitch annunciation on the Primary Flight Display (PFD).

A. Fuel jettison system maximum landing weight and fuel to remain automatic shutoff functions will be inoperative.

B. FUEL AUTO JETTISON caution message will be displayed. Accomplish the Manual FUEL AUTO JETTISON Non-Normal Checklist.

28-41-02 Fuel Quantity Processor Input/Output (I/O) Channels

Interval	Installed	Required	Procedure
B	2	1	**(O) (P)**

One channel may be inoperative provided:

a. All flight deck fuel indications operate normally.

b. Fuel flow indications operate normally.

c. FMC TOTALIZER FUEL quantity agrees with fuel quantity indications.

OPERATIONS (O)

1. Verify that the fuel quantities loaded agree with the quantity indications on Fuel Synoptic, FMC and EICAS display.

28-41-03 Item Moved

Interval	Installed	Required	Procedure
	–	–	

Moved dispatch relief for this equipment to item 28-21-01.

28-41-04 Total Fuel Quantity Indication

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

May be inoperative provided:

a. Fuel flow indications operate normally.

b. FMC FUEL is initialized with the known total fuel quantity.

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

OPERATIONS (O)

1. Total fuel quantity must be calculated and manually initialized on the FMC PERF INIT page.

   Notes: 1. The total fuel quantity indication will be inoperative.

   2. The FMC CALCULATED fuel quantity will be blank prior to manual initialization.

   A. Manually enter the total fuel quantity on the PERF INIT page. MANUAL will be displayed next to the entered fuel quantity.

      Note: The manually entered total fuel quantity and the takeoff speeds may blank after engine start.

   B. Before and after engine start, verify the fuel quantity entered is displayed under the CALCULATED fuel quantity display on the PROGRESS page 2.

2. Flight crew should monitor FMC Calculated fuel and the operative fuel tank quantity indications to ensure usages are normal.

3. The flight must remain within 180 minutes of landing at a suitable airport.

4. If it is necessary to jettison fuel enroute:

   Note: Selection of fuel jettison with Total Fuel Quantity Indication inoperative causes all FMC Performance and VNAV data to become invalid. If VNAV is the current active pitch mode of the Autopilot Flight Director System (AFDS), the AFDS pitch mode will fail with a resulting Master Caution light, AUTOPILOT caution message and amber bar through the pitch annunciation on the Primary Flight Display (PFD).

   A. Fuel jettison system maximum landing weight and fuel to remain automatic shutoff functions will be inoperative.

   B. FUEL AUTO JETTISON caution message will be displayed. Accomplish the FUEL AUTO JETTISON Non-Normal Checklist.

28-42-01 Fuel Pump Low PRESS Lights

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to items 28-22-01-01 and 28-22-02-01.

28-43-01 Fuel Temperature Indicating System

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

May be inoperative provided:

a. Total Air Temperature (TAT) is used as an indication of fuel temperature.

OPERATIONS (O)

1. Monitor fuel temperature using TAT.

28-44-01 Measuring Sticks

28-44-01-01 777-200/-200ER/-300 -200,-200ER, -300

Interval	Installed	Required	Procedure
C	8	0	**(P)**

May be inoperative provided:

a. Fuel quantity is determined by other acceptable means.

28-44-01 Measuring Sticks

28-44-01-02 777-300ER -300ER

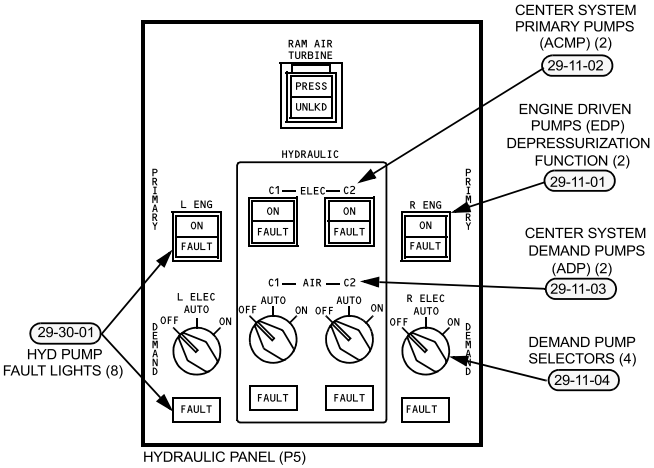
Interval	Installed	Required	Procedure
C	10	0	**(P)**

May be inoperative provided:

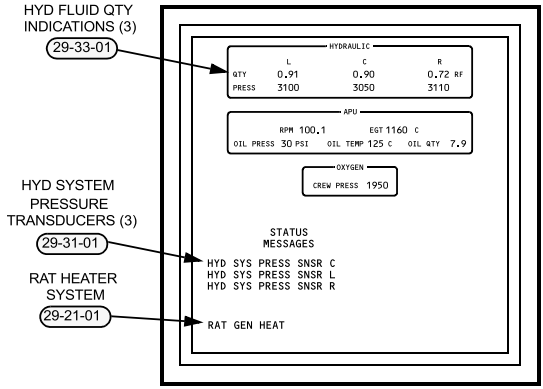
a. Fuel quantity is determined by other acceptable means.

HYDRAULIC POWER

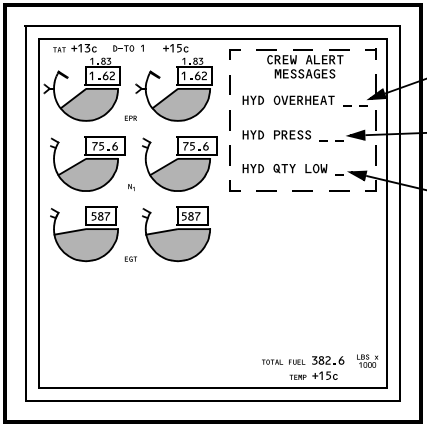
General Locations



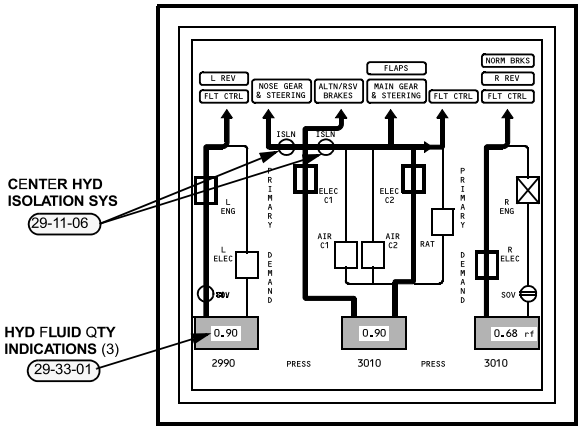
HYDRAULIC PANEL (P5)



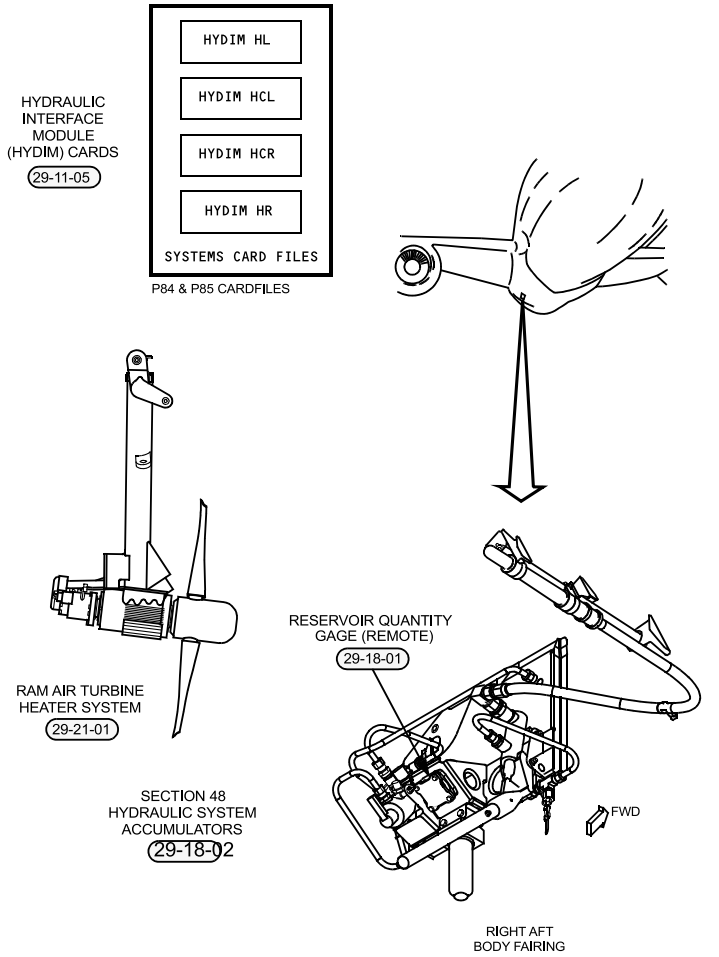
MFD - EICAS STATUS PAGE



EICAS DISPLAY



HYDRAULIC SYNOPTIC DISPLAY
29-30-02


HYDIM HL
HYDIM HCL
HYDIM HCR
HYDIM HR
SYSTEMS CARD FILES
P84 & P85 CARDFILES
HYDRAULIC INTERFACE MODULE (HYDIM) CARDS
29-11-05
RESERVOIR QUANTITY GAGE (REMOTE)
29-18-01
RAM AIR TURBINE HEATER SYSTEM
29-21-01
SECTION 48 HYDRAULIC SYSTEM ACCUMULATORS
29-18-02
FWD
RIGHT AFT BODY FAIRING

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

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

29-11-02 Center System Primary Alternating Current Motor Pumps (ACMP)

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

One may be inoperative provided:

a. Inoperative center ACMP is deactivated.

b. Both center ADPs operate normally.

MAINTENANCE (M)

Deactivate the inoperative center system primary pump (AMM 29-00-00/901).

1. For center system PRIMARY C1 ELEC pump inoperative:
   A. Position Hydraulic Panel (P5) PRIMARY C1 ELEC switch off.
   B. Open P110 panel C1 HYD PUMP CTRL circuit breaker.

      Note: Opening the C1 HYD PUMP CTRL circuit breaker results in the display of the HYD ISLN VALVE status message. This status message clears when the circuit breaker is closed.

   C. Disconnect, cap and stow electrical connector D10008P on P100 panel and cap the P100 panel jack (J8).
   D. Close P110 panel C1 HYD PUMP CTRL circuit breaker.
2. For center system PRIMARY C2 ELEC pump inoperative:
   A. Position Hydraulic Panel (P5) PRIMARY C2 ELEC switch off.
   B. Open and collar P210 panel C2 HYD PUMP CTRL circuit breaker.

OPERATIONS NOTE

Turning the nose wheel more than 13 degrees by tiller input or towing, or moving a flight control surface, may cause a low center system hydraulic pressure condition resulting in the display of EICAS messages. Verify that these messages correlate to the low pressure condition and that normal hydraulic pressure returns.

1. For center system PRIMARY C1 ELEC pump inoperative, position PRIMARY C1 ELEC switch off.
2. For center system PRIMARY C2 ELEC pump inoperative, position PRIMARY C2 ELEC switch off.

29-11-03 Center System Demand Air Driven Pumps (ADP)

29-11-03A Other ADP Operates Normally

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

One may be inoperative selected OFF provided:

a. Both center system ACMPs operate normally.
b. Remaining ADP heater operates normally.
c. Remaining ADP AUTO function operates normally.
d. Associated pump is verified not running when selected OFF.
e. APU is used as ADP air source during takeoff.
f. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Verify the inoperative center system demand ADP is not running when selected OFF and the remaining center system ADP heater operates normally (AMM 29-00-00/901).

1. Verify the inoperative center system demand ADP is not running when selected OFF. If required, disconnect the ADP so it does not run.
   A. Depressurize the center hydraulic system (AMM 29-11-00/201).

      Note: It is not necessary to depressurize the reservoir.

   B. Pressurize the pneumatic system (AMM 36-00-00/201).
   C. On the Hydraulic Maintenance page, confirm the associated Demand Pump PRESS is less than 100 and RUN is NO.
   D. For the ADP running when selected OFF, disconnect the Logic Speed Control Unit (LSCU).
      1) For C1 ADP inoperative:
         a. Open the P310 panel C HYD AIR PUMP 1 circuit breaker.
         b. Gain access to the right systems card file (P84) in the main equipment center and position the power switch for the HYDIM CR to OFF.
         c. Gain access to the C1 ADP by opening access door 197JL.
         d. Disconnect, cap and stow electrical connector DM29306A from the C1 ADP LSCU. Cap the LSCU receptacle.
         e. Close access door 197JL.
         f. Position the power switch for the HYDIM CR to ON.

g. Close the P310 panel C HYD AIR PUMP 1 circuit breaker.

2) For C2 ADP inoperative:

a. Open the P310 panel C HYD AIR PUMP 2 circuit breaker.

b. Gain access to the left systems card file (P85) and position the power switch for the HYDIM CL to OFF.

c. Gain access to the C2 ADP by opening access door 197JL.

d. Disconnect, cap and stow electrical connector DM29321A from the C2 ADP LSCU. Cap the LSCU receptacle.

e. Close access door 197JL.

f. Position the power switch for the HYDIM CL to ON.

g. Close the P310 panel C HYD AIR PUMP 2 circuit breaker.

3) On the Hydraulic Maintenance page, confirm the associated Demand Pump PRESS is less than 100 and RUN is NO.

E. Depressurize the pneumatic pressure (AMM 36-00-00/201).

2. Verify the remaining center system demand ADP heater is operating normally.

A. Confirm the associated HYD PUMP DEM C1 or C2 status message is not displayed.

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Note: For APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

	Takeoff Climb	Takeoff Runway/Obstacle
-200,-200ER	636 kg	4,355 kg
-300	181 kg	1,678 kg
-300ER	771 kg	4,355 kg

2. Position the inoperative center system DEMAND pump selector OFF for the entire flight.

3. For takeoff, configure the pneumatic system with the APU supplying air for the remaining operative center system demand pump.

A. Position APU Bleed air switch AUTO.

B. Start the APU if it is not operating.

C. Position Bleed Isolation L ISLN and R ISLN switches CLOSED.

Note: The BLEED ISLN CLOSED L and BLEED ISLN CLOSED R advisory messages will be displayed.

D. After takeoff is completed, position Bleed Isolation L ISLN and R ISLN switches AUTO and configure the APU as required.

29-11-03 Center System Demand Air Driven Pumps (ADP)

29-11-03B Other ADP Auto/Heater Function Inoperative

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

One may be inoperative selected OFF provided:

a. Both center system ACMPs operate normally.
b. Associated pump is verified not running when selected OFF.
c. Remaining ADP is selected ON for the entire flight.
d. APU is used as ADP air source during takeoff.
e. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Verify the inoperative center system demand ADP is not running when selected OFF and the remaining center system ADP heater operates normally (AMM 29-00-00/901).

1. Depressurize the center hydraulic system (AMM 29-11-00/201).

   Note: It is not necessary to depressurize the reservoir.
2. Pressurize the pneumatic system (AMM 36-00-00/201).
3. Pressurize the pneumatic system (AMM 36-00-00/201).
4. For the ADP running when selected OFF:
   A. Disconnect the Logic Speed Control Unit (LSCU).
      1) For C1 ADP inoperative:
         a. Open the P310 panel C HYD AIR PUMP 1 circuit breaker.
         b. Gain access to the right systems card file (P84) in the main equipment center and position the power switch for the HYDIM CR to OFF.
         c. Gain access to the C1 ADP by opening access door 197JL.
         d. Disconnect, cap and stow electrical connector DM29306A from the C1 ADP LSCU. Cap the LSCU receptacle.
         e. Close access door 197JL.
         f. Position the power switch for the HYDIM CR to ON.
         g. Close the P310 panel C HYD AIR PUMP 1 circuit breaker.

2) For C2 ADP inoperative:
   a. Open the P310 panel C HYD AIR PUMP 2 circuit breaker.
   b. Gain access to the left systems card file (P85) and position the power switch for the HYDIM CL to OFF.
   c. Gain access to the C2 ADP by opening access door 197JL.
   d. Disconnect, cap and stow electrical connector DM29321A from the C2 ADP LSCU. Cap the LSCU receptacle.
   e. Close access door 197JL.
   f. Position the power switch for the HYDIM CL to ON.
   g. Close the P310 panel C HYD AIR PUMP 2 circuit breaker.
3) On the Hydraulic Maintenance page, confirm the associated Demand Pump PRESS is less than 100 and RUN is NO.

5. Depressurize the pneumatic pressure (AMM 36-00-00/201).

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Note: For APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff Climb	Takeoff Runway/Obstacle
636 kg	4,355 kg
181 kg	1,678 kg
771 kg	4,355 kg

-200,-200ER

-300

-300ER

2. Position the inoperative center system DEMAND pump selector OFF.
3. Position remaining operative center system DEMAND pump selector ON prior to takeoff and leave ON for the entire flight.

   Note: Do not position center system DEMAND pump selector ON before engine start.

4. For takeoff, configure the pneumatic system with the APU supplying air for the remaining operative center system demand pump.
   A. Position APU Bleed air switch AUTO.
   B. Start the APU if it is not operating.
   C. Position Bleed Isolation L ISLN and R ISLN switches CLOSED.

      Note: The BLEED ISLN CLOSED L and BLEED ISLN CLOSED R advisory messages will be displayed.

   D. After takeoff is completed, position Bleed Isolation L ISLN and R ISLN switches AUTO and configure the APU as required.

29-11-03 Center System Demand Air Driven Pumps (ADP)

29-11-03-01 ADP Auto/Heater Function

29-11-03-01A Other ADP Operates Normally

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

One may be inoperative provided:

a. Remaining ADP operates normally.

b. Associated ADP ON and OFF selector positions are verified to operate normally.

c. Associated ADP is selected ON for the entire flight.

MAINTENANCE (M)

Verify the associate center system demand ADP selector ON and OFF positions operate normally (AMM 29-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Pressurize the pneumatic system (AMM 36-00-00/201).
3. Position the associated Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector ON.
4. Confirm the associated HYD PUMP DEM C1 or C2 status message clears.
5. Position the associated Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector OFF.
6. Confirm the associated HYD PUMP DEM C1 or C2 status message is displayed.
7. Depressurize the pneumatic system (AMM 36-00-00/201).

OPERATIONS (O)

1. Position associated center system DEMAND pump selector ON prior to takeoff and leave ON for the entire flight.

   Note: Do not position center system DEMAND pump selector ON before engine start.

2. Position remaining center system DEMAND pump selector AUTO.

29-11-03 Center System Demand Air Driven Pumps (ADP)

29-11-03-01 ADP Auto/Heater Function

29-11-03-01B Other ADP Inoperative

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

May be inoperative provided:

a. Both center system ACMPs operate normally.
b. Associated ADP ON and OFF selector positions are verified to operate normally.
c. Associated ADP is selected ON for the entire flight.
d. APU is used as ADP air source during takeoff.
e. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Verify the associated center system demand ADP selector ON and OFF positions operate normally (AMM 29-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Pressurize the pneumatic system (AMM 36-00-00/201).
3. Position the associated Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector ON.
4. Confirm the associated HYD PUMP DEM C1 or C2 status messages clears.
5. Position the associated Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector OFF.
6. Confirm the associated HYD PUMP DEM C1 or C2 status message is displayed.
7. Depressurize the pneumatic system (AMM 36-00-00/201).

OPERATIONS (O)

TKK to TKR, TKU to TKZ **Note:** For APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

   Note: For airplane also dispatched using MEL Item 29-11-03B, it is not required to add the following penalties.

Takeoff Climb	Takeoff Runway/Obstacle	
636 kg	4,355 kg	-200,-200ER
181 kg	1,678 kg	-300
771 kg	4,355 kg	-300ER

2. Position inoperative center system DEMAND pump selector OFF.
3. Position associated center system DEMAND pump selector ON prior to takeoff and leave ON for the entire flight.

   Note: Do not position center system DEMAND pump selector ON before engine start.
4. For takeoff, configure the pneumatic system with the APU supplying air for the operating center system demand pump.
   A. Position APU Bleed air switch AUTO.
   B. Start the APU if it is not operating.
   C. Position Bleed Isolation L ISLN and R ISLN switches CLOSED.

      Note: The BLEED ISLN CLOSED L and BLEED ISLN CLOSED R advisory messages will be displayed.
   D. After takeoff is completed:
      1) Position Bleed Isolation L ISLN and R ISLN switches AUTO and configure the APU as required.

29-11-03 Center System Demand Air Driven Pumps (ADP)

29-11-03-01 ADP Auto/Heater Function

29-11-03-01C Both Auto/Heater Functions Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Both center system ACMPs operate normally.
b. ADP ON and OFF selector positions are verified to operate normally for both pumps.
c. One ADP is selected ON for the entire flight.
d. APU is used as ADP air source during takeoff.
e. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Verify both center system demand ADP selectors ON and OFF positions operate normally (AMM 29-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Pressurize the pneumatic system (AMM 36-00-00/201).
3. Position the Hydraulic Panel (P5) DEMAND AIR C1 and C2 selectors ON.
4. Confirm the HYD PUMP DEM C1 and C2 status messages clear.
5. Position Hydraulic Panel (P5) DEMAND AIR C1 and C2 selectors OFF.
6. Confirm the HYD PUMP DEM C1 and C2 status messages are displayed.
7. Depressurize the pneumatic system (AMM 36-00-00/201).

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Note: For APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff Climb	Takeoff Runway/Obstacle
636 kg	4,355 kg
181 kg	1,678 kg
771 kg	4,355 kg

-200,-200ER

-300

-300ER

2. Position one center system DEMAND pump selector ON prior to takeoff and leave ON for the entire flight.

   Note: Do not position center system DEMAND pump selector ON before engine start.

3. Position remaining center system DEMAND pump selector AUTO.
4. For takeoff:
   A. Configure the pneumatic system with the APU supplying air for the remaining operative center system demand pump.
      1) Position APU Bleed air switch AUTO.
      2) Start the APU if it is not operating.
      3) Position Bleed Isolation L ISLN and R ISLN switches CLOSED.

         Note: The BLEED ISLN CLOSED L and BLEED ISLN CLOSED R advisory messages will be displayed.

      4) After takeoff is completed:
         a. Position Bleed Isolation L ISLN and R ISLN switches AUTO and configure the APU as required.

29-11-04 Demand Pump Selectors

29-11-04-01 Center System AUTO Position

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

May be inoperative provided:

a. Associated demand ADP auto function is considered inoperative.

Note: The airplane must be dispatched using MEL Item 29-11-03-01.

29-11-04 Demand Pump Selectors

29-11-04-02 Left & Right System AUTO Position

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

May be inoperative provided:

a. ON and OFF positions operate normally.

b. Associated pump selector is ON for takeoff and landing.

OPERATIONS (O)

1. Position the associated DEMAND Pump selector ON for takeoff and landing.

   Note: Selector may be placed in ON position for the entire flight if desired.

29-11-04 Demand Pump Selectors

29-11-04-03 ON Position

Interval	Installed	Required	Procedure
C	4	0	**(P)**

May be inoperative provided:

a. The AUTO and OFF positions for associated pump operate normally.

29-11-05 Hydraulic Interface Module (HYDIM) Cards

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

One may be inoperative provided:

a. Inoperative card is in the HYDIM center right (HCR) card position.

b. Individual center system pump pressure indications operate normally.

c. Center system demand ADP C1 auto function is considered inoperative.

Note: The airplane must be dispatched using MEL Item 29-11-03-01 for one inoperative.

MAINTENANCE (M)

Inoperative HYDIM card must be in the HYDIM Center Right (CR) card position. Configure HYDIM cards as required (AMM 29-00-00/901).

1. Gain access to HYDIM cards in the right systems cardfile (P84) and left systems cardfile (P85) in the main equipment center (AMM 29-11-50/401).
2. For HYDIM Center Left (CL) card inoperative:
   A. Set the P85 power switch for HYDIM CL card to the OFF position.
   B. Set the P84 power switch for HYDIM CR card to the OFF position.
   C. Open P11 panel RAT AUTO CRTL circuit breaker.
   D. Open P110 panel C1 HYD PUMP CTRL circuit breaker.
   E. Open P310 panel C HYD AIR PUMP 1, C HYD AIR PUMP 2, RAT MAN/AUTO CTRL and NOSE GEAR ISLN VALVE circuit breakers.
   F. Exchange HYDIM CL card (P85 position A4) with the serviceable HYDIM CR card (P84 position A4).
   G. Set the P85 power switch for HYDIM CL card to the ON position.

      Note: HYDIM CR card power switch remains off.

   H. Close P11, P110 and P310 panel circuit breakers.
3. For HYDIM Center Right (CR) card inoperative:
   A. Set the P84 power switch for HYDIM CR card to the OFF position.
4. For HYDIM Left (L) card inoperative:
   A. Set the P85 power switch for HYDIM L card to the OFF position.
   B. Set the P84 power switch for HYDIM CR card to the OFF position.
   C. Open P11 panel L ENG EDP SUPPLY VALVE, LDG GEAR RETR AUTO OFF and RAT AUTO CRTL circuit breakers.

D. Open P110 panel L D-PRESS VLV SPLY circuit breaker.

E. Open P310 C HYD AIR PUMP 1 circuit breaker.

F. Exchange HYDIM L card (P85 position A17) with the serviceable HYDIM CR card (P84 position A4).

G. Set the P85 power switch for HYDIM L card to the ON position.

Note: HYDIM CR card power switch remains off.

H. Close P11, P110 and P310 panel circuit breakers.

5. For HYDIM Right (R) card inoperative:

A. Set the P84 power switches for HYDIM R card and HYDIM CR card to the OFF positions.

B. Open P11 panel LDG GEAR RETR AUTO OFF, R ENG EDP SUPPLY VALVE, and RAT AUTO CTRL circuit breakers.

C. Open P210 panel R D-PRESS VLV SPLY circuit breaker.

D. Open P310 panel C HYD AIR PUMP 1 circuit breaker.

E. Exchange HYDIM R card (P84 position A17) with the serviceable HYDIM CR card (P84 position A4).

F. Set the P84 power switch for HYDIM R card to the ON position.

Note: HYDIM CR card power switch remains off.

G. Close P11, P210 and P310 panel circuit breakers.

6. Use the maintenance access terminal (MAT) to perform an LRU replacement test of the exchanged serviceable HYDIM card. Following this test, only the HYDIM CARD HCR status message should be displayed.

OPERATIONS NOTE

1. The Hydraulic Synoptic Display may have incomplete or missing information.

29-11-06 Center Hydraulic Isolation System

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

May be inoperative deactivated open.

MAINTENANCE (M)

Deactivate center hydraulic isolation system with the reserve and nose gear isolation valves in the open position (AMM 29-00-00/901).

1. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
2. Open P110 panel C1 HYD PUMP CTRL circuit breaker.
3. Open and collar P310 panel NOSE GEAR ISLN VALVE circuit breaker.
4. Gain access to the reserve and nose gear isolation valves (right wheel well).
5. Deactivate the reserve isolation valve in the open position.
   A. Disconnect, cap and stow electrical connector (DV29302).
   B. Move the manual override handle to the OPEN position and lockwire.
6. Deactivate the nose gear isolation valve in the open position.
   A. Disconnect, cap and stow electrical connector (DV29303).
   B. Move the manual override handle to the OPEN position and lockwire.
7. Close P110 panel C1 HYD PUMP CTRL circuit breaker.
8. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

OPERATIONS NOTE

1. The RESERVE BRAKES/STRG advisory message will be displayed. Do not accomplish the RESERVE BRAKES/STRG Non-Normal Checklist.
2. For failures resulting in HYD PRESS SYS C caution message being displayed, accomplish the HYD PRESS SYS C and the RESERVE BRAKES/STRG Non-Normal Checklists.

29-18-01 Reservoir Quantity Gage (Remote)

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

29-18-02 Hydraulic System Accumulators

Interval	Installed	Required	Procedure
C	–	0	**(P)**

29-18-02 Hydraulic System Accumulators

29-18-02-01 Charging Valves

Interval	Installed	Required	Procedure
C	3	0	**(P)**

29-18-02 Hydraulic System Accumulators

29-18-02-02 Charging Gages

Interval	Installed	Required	Procedure
C	3	0	**(P)**

29-21-01 RAT Heater System

29-21-01-01 RAT Heater System

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. Repairs are made within three flight days.

MAINTENANCE NOTE

1. The RAT heater system is considered to be operating normally when the heater switch (E6 bay) is moved from its existing position to the other position (HEATER 1 or HEATER 2) and the RAT GEN HEAT status message clears when the RAT heater is tested (AMM 29-21-00/501).

29-21-02 RAM AIR TURBINE Switch Lights

29-21-02-01 UNLKD Light

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

29-21-02 RAM AIR TURBINE Switch Lights

29-21-02-02 PRESS Light

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

29-30-01 Hydraulic Pump Lights

29-30-01-01 FAULT Lights

Interval	Installed	Required	Procedure
C	8	5	**(P)**

One in each system may be inoperative.

29-30-01 Hydraulic Pump Lights

29-30-01-02 ON Lights

Interval	Installed	Required	Procedure
C	4	0	**(P)**

29-30-02 Hydraulic Synoptic Display

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

OPERATIONS NOTE

1. For missing data on the Synoptic Display, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) 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.

29-31-01 Hydraulic System Pressure Transducers

Interval	Installed	Required	Procedure
C	3	0	**(P)**

May be inoperative provided:

a. All associated system pump pressure indications operate normally.

29-31-02 Pump Pressure Indication Systems

29-31-02-01 Left & Right Systems

Interval	Installed	Required	Procedure
C	4	2	**(M) (P)**

One in each system may be inoperative provided:

a. Associated system pressure transducer operates normally.

b. Associated pump operation is verified normal before each departure.

Note: The pump transducer may fail such that the associated pump status message is displayed rather than the pump pressure indication status message.

MAINTENANCE (M)

Verify the associated pump is operating normally before each departure.
For pump status message displayed, verify the associated pump pressure indication transducer is the malfunction and disconnect the transducer (AMM 29-00-00/901).

1. Verify the associated pump is operating normally before each departure.
   A. Supply electrical power on the airplane (AMM 24-22-00/201).
   B. Pressurize the associated hydraulic system with the associated pump.
      1) For an Alternating Current Motor Pump (ACMP):
         a. Position the associated Hydraulic Panel (P5) DEMAND pump selector ON.
      2) For an Engine Driven Pump (EDP):
         a. Dry motor the associated engine, or start the associated engine (AMM 71-00-00/201).
         b. Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.
   C. On Hydraulic Maintenance page, confirm the associated system pressure is normal after the pump has been operated for at least 60 seconds.
      1) For ACMP:
         – 2700 to 3200 psi.
      2) For EDP:
         – 2900 to 3200 psi.
   D. Position the associated Hydraulic Panel (P5) pump selector or switch off.

E. If an engine was started, shut down the engine (AMM 71-00-00/201).

2. For pump status message displayed instead of pump pressure indication status message:

A. Verify the associated pump pressure indication transducer is the malfunction and disconnect the transducer.

1) Supply electrical power on the airplane (AMM 24-22-00/201).

2) Pressurize the associated hydraulic system with the associated pump.

a. For an Alternating Current Motor Pump (ACMP):

i) Position the associated Hydraulic Panel (P5) DEMAND pump selector ON.

b. For an Engine Driven Pump (EDP):

i) Dry motor the associated engine, or start the associated engine (AMM 71-00-00/201).

ii) Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.

3) On Hydraulic Maintenance page, confirm the following pump pressure values are displayed.

Note: Intermittent readings or a blank pump pressure indication also indicate a malfunctioning transducer.

a. For ACMP:

– 0 to 2600 psi, or
– 3250 to 4000 psi.

b. For EDP:

– 0 to 2800 psi, or
– 3250 to 4000 psi.

4) Position the associated pump Hydraulic Panel (P5) switch or selector off.

5) If an engine was started, shut down the engine (AMM 71-00-00/201).

6) If the pneumatic system was pressurized, depressurize the pneumatic system (AMM 36-00-00/201).

7) Disconnect, cap and stow the applicable pump pressure transducer connector and associated wiring, and install a cap on the transducer electrical receptacle.

Note: The hydraulic pump status message will continue to be displayed, the pump pressure on the Hydraulic maintenance page will be blank and the pump pressure

indication status message will be displayed. The hydraulic synoptic flow bars may not indicate correctly.

a. For an ACMP:

i) Refer to AMM 29-11-41/401 pressure transducer removal procedure.

b. For an EDP:

i) Refer to AMM 29-11-42/401 pressure transducer removal procedure.

OPERATIONS NOTE

1. For a pump pressure transducer disconnected, the associated pump pressure advisory message will be displayed and the hydraulic synoptic flow bars may not indicate correctly.

29-31-02 Pump Pressure Indication Systems

29-31-02-02 Center Systems

29-31-02-02A Pump Operative

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

One may be inoperative provided:

a. Associated system pressure transducer operates normally.

b. Associated pump operation is verified normal before each departure.

MAINTENANCE (M)

Verify the associated pump is operating normally before each departure (AMM 29-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Pressurize the associated hydraulic system with the associated pump.

A. For an Alternating Current Motor Pump (ACMP):

1) Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.

B. For an Air Driven Pump (ADP):

1) Pressurize the pneumatic system (AMM 36-00-00/201).

2) Position the associated Hydraulic Panel (P5) DEMAND pump selector ON.

3. On Hydraulic Maintenance page, confirm the associated system pressure is normal after the pump has been operated for at least 60 seconds.
   A. For ACMP:
      – 2700 to 3200 psi.
   B. For ADP:
      – 2900 to 3200 psi.
4. Position the associated Hydraulic Panel (P5) pump switch or selector off.
5. If the pneumatic system was pressurized, depressurize the pneumatic system (AMM 36-00-00/201).

29-31-02 Pump Pressure Indication Systems

29-31-02-02 Center Systems

29-31-02-02B Pump Inoperative

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

One may be inoperative for an associated inoperative pump.

29-32-01 Pump Temperature Indications

29-32-01-01 Left & Right Systems

Interval	Installed	Required	Procedure
C	4	2	**(M) (P)**

One in each system may be inoperative provided:

a. Associated pump pressure indications operate normally.

b. Associated pump operation is verified normal before each departure.

MAINTENANCE (M)

Verify the associated pump is operating normally by verifying the pump pressure is normal before each departure (AMM 29-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. For an Alternating Current Motor Pump (ACMP) temperature indication inoperative:
   A. Position the associated Hydraulic Panel (P5) DEMAND pump selector ON.
3. For an Engine Driven Pump (EDP) temperature indication inoperative:
   A. Dry motor the associated engine, or start the associated engine ((AMM 71-00-00/201).
   B. Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.
4. On Hydraulic Maintenance page, confirm the associated system pressure is normal after the pump has been operated for at least 60 seconds:
   A. For ACMP
      – 2700 to 3200 psi.
   B. For EDP:
      – 2900 to 3200 psi.
5. Position the associated Hydraulic Panel (P5) pump selector or switch off.
6. If an engine was started, shutdown the engine (AMM 71-00-00/201).
7. If the pneumatic system was pressurized, depressurize the pneumatic system (AMM 36-00-00/201).

29-32-01 Pump Temperature Indications

29-32-01-02 Center Systems

29-32-01-02A Pump Operative

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

One may be inoperative provided:

a. Associated pump pressure indications operate normally.

b. Associated pump operation is verified normal before each departure.

MAINTENANCE (M)

Verify the associated pump is operating normally by verifying the pump pressure is normal before each departure (AMM 29-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. For an Alternating Current Motor Pump (ACMP) temperature indication inoperative:
   A. Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.
3. For an Air Driven Pump (ADP) temperature indication inoperative:
   A. Pressurize the pneumatic system (AMM 36-00-00/201).
   B. Position the associated Hydraulic Panel (P5) DEMAND pump selector ON.
4. On Hydraulic Maintenance page, confirm the associated system pressure is normal after the pump has been operated for at least 60 seconds:
   A. For ACMP:
      – 2700 to 3200 psi.
   B. For ADP:
      – 2900 to 3200 psi.
5. Position the associated pump Hydraulic Panel (P5) switch or selector off.
6. If the pneumatic system was pressurized, depressurize the pneumatic system (AMM 36-00-00/201).

29-32-01 Pump Temperature Indications

29-32-01-02 Center Systems

29-32-01-02B Pump Inoperative

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

One may be inoperative for an associated inoperative pump.

29-33-01 Hydraulic Fluid Quantity Indications (Flight Deck)

Interval	Installed	Required	Procedure
C	3	1	**(M) (P)**

Two may be inoperative provided:

a. Reservoir level is verified normal before each departure.

b. Associated system pressure indication operates normally.

c. For the center system indication inoperative, center hydraulic isolation system is deactivated.

MAINTENANCE (M)

Verify the associated system reservoir quantity level is normal before each departure, and for center quantity indication inoperative, deactivate Center Hydraulic Isolation System (AMM 29-00-00/901).

1. Verify associated reservoir quantity level is normal using one of the following.
   A. Reservoir quantity gage (if operating):
      1) Supply electrical power on the airplane (AMM 24-22-00/201).
      2) Open the Hydraulic Ground Service Bay Access Door (198DR).
      3) Position the handle of the reservoir fill selector valve to the associated system.
      4) Verify the reservoir quantity gage indicates in the green band.
      5) Close the Hydraulic Ground Service Bay Access Door.
   B. Hydraulic Reservoir Sight Glass:
      1) For left or right hydraulic quantity indications inoperative:
         a. Deactivate the associated engine thrust reverser for ground maintenance (AMM 78-31-00/201).
      2) For center hydraulic quantity indication inoperative:
         a. Open the landing gear doors and install safety pins (AMM 32-00-15/201).
      3) Gain access to the associated reservoir.
         a. For left system:
            i) Open the aft strut Fairing Doors (434CL and 434CR).
         b. For right system:
            i) Open the aft strut Fairing Doors (444CL and 444CR).
         c. For center system:

i) Right wheel well.

4) Verify the lower sight glass (refill level) is dark.

Note: Red indicates fluid is below the sight glass level.

5) For left system:

a. Close the aft strut Fairing Doors (434CL and 434CR).

6) For right system:

a. Close the aft strut Fairing Doors (444CL and 444CR).

7) For center hydraulic quantity indication inoperative:

a. Remove the landing gear door safety pins and close the landing gear doors (AMM 32-00-15/201).

8) For left or right hydraulic quantity indications inoperative:

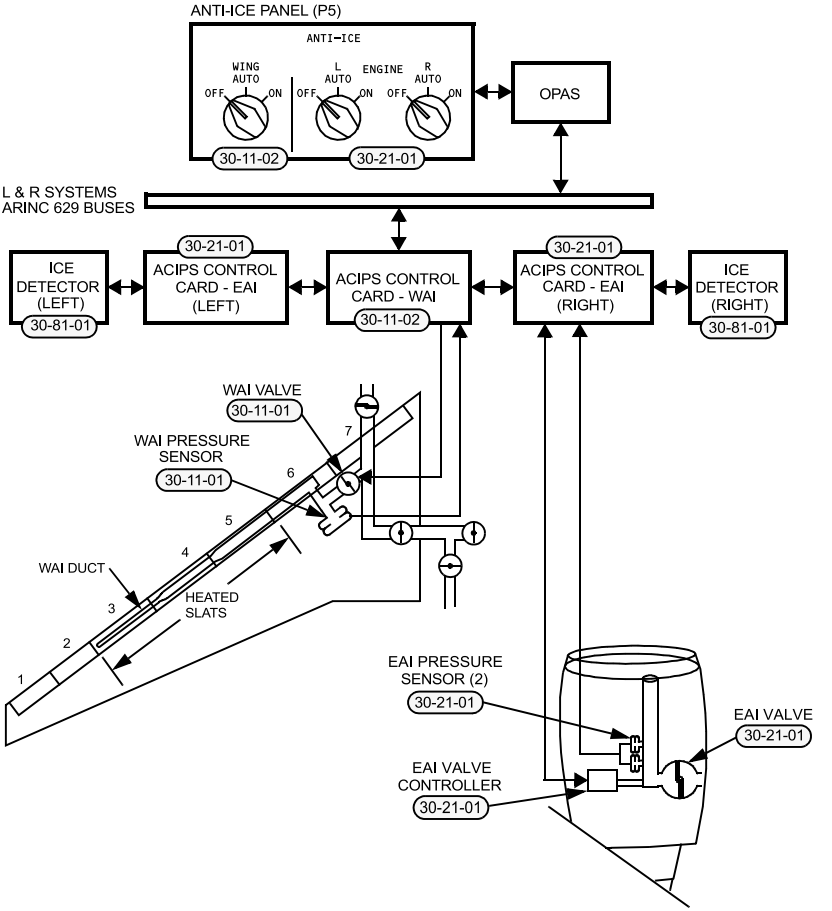
a. Activate the associated engine thrust reverser (AMM 78-31-00/201).

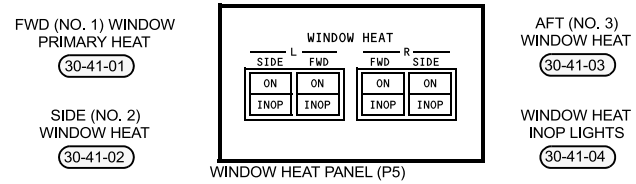
2. For the center quantity indication inoperative:

A. Deactivate the Center Hydraulic Isolation System using MEL Item 29-11-06 (M) procedure.

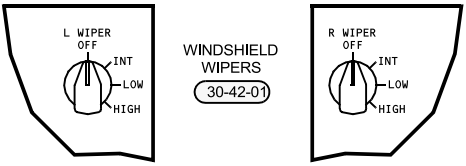
ICE & RAIN PROTECTION

General Locations

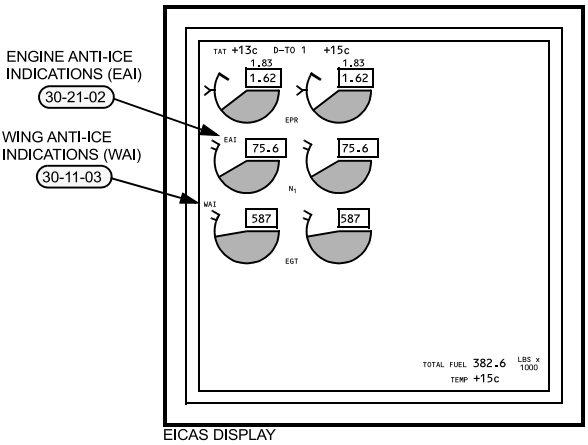




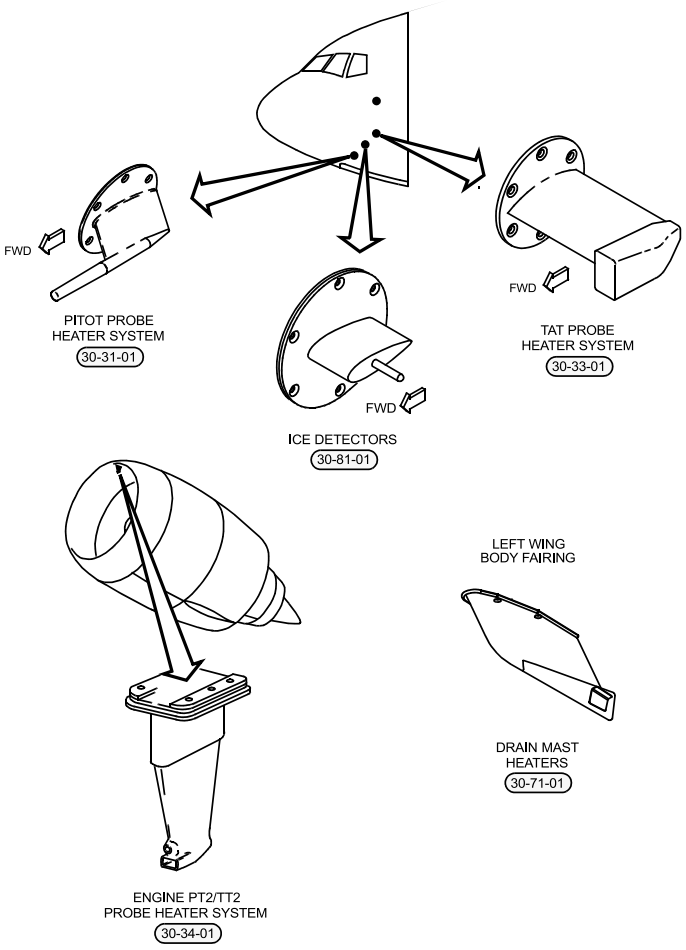
WINDOW HEAT PANEL (P5)



WIPER SELECTORS (P5)



EICAS DISPLAY


FWD
PITOT PROBE
HEATER SYSTEM
30-31-01
FWD
TAT PROBE
HEATER SYSTEM
30-33-01
FWD
ICE DETECTORS
30-81-01
LEFT WING
BODY FAIRING
DRAIN MAST
HEATERS
30-71-01
ENGINE PT2/TT2
PROBE HEATER SYSTEM
30-34-01

30-11-01 Wing Anti-Ice Systems

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

May be inoperative provided:

a. Associated valve is locked closed.
b. Wing anti-ice control switch remains OFF.
c. Airplane is not operated in known or forecast icing conditions.

MAINTENANCE (M)

Lock the associated Wing Anti-Ice (WAI) valve(s) in the closed position (AMM 30-00-00/901).

1. Open P210 panel WAI CTRL circuit breaker.
2. Deactivate the leading edge slats (AMM 27-81-00/201).
3. Gain access to the appropriate WAI valve.
   A. For left WAI valve:
      1) Open Access Panel 521AB.
   B. For right WAI valve:
      1) Open Access Panel 621AB.
4. Lock the WAI valve in the closed position.
   A. Remove the locking screw from the normal position.
   B. Set the crank to the locked (CL) position.
   C. Install the locking screw through the crank into the locked position.

      Note: The usual running torque for the locking screw is 10-15 pound-inches (1.1-1.7 newton-meters).
5. Close the opened Access Panel(s).
6. Activate the leading edge slats (AMM 27-81-00/201).
7. Position the ANTI-ICE Panel (P5) Wing Anti-Ice selector OFF.
8. Close P210 panel WAI CTRL circuit breaker.

30-11-02 Wing Anti-Ice Control (Card and Switch)

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

May be inoperative provided:

a. Both wing anti-ice valves are locked closed.
b. Wing anti-ice control switch remains OFF.
c. Airplane is not operated in known or forecast icing conditions.

MAINTENANCE (M)

Lock both Wing Anti-Ice (WAI) valves in the closed position (AMM 30-00-00/901).

1. Open P210 panel WAI CTRL circuit breaker.
2. Deactivate the leading edge slats (AMM 27-81-00/201).
3. Gain access to the both WAI valves.
   A. For left WAI valve:
      1) Open Access Panel 521AB.
   B. For right WAI valve:
      1) Open Access Panel 621AB.
4. Lock the WAI valves in the closed position.
   A. Remove the locking screw from the normal position.
   B. Set the crank to the locked (CL) position.
   C. Install the locking screw through the crank into the locked position.

      Note: The usual running torque for the locking screw is 10-15 pound-inches (1.1-1.7 newton-meters).
5. Close Access Panels 521AB and 621AB.
6. Activate the leading edge slats (AMM 27-81-00/201).
7. Position the ANTI-ICE Panel (P5) Wing Anti-Ice selector OFF.
8. Close P210 panel WAI CTRL circuit breaker.

30-11-03 Wing Anti-Ice Indications (WAI)

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

30-21-01 Engine Anti-Ice Systems

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

One may be inoperative provided:

a. Valve is locked closed.
b. Associated engine anti-ice control switch remains OFF.
c. Airplane is not operated in known or forecast icing conditions.
d. Flight remains within 120 minutes of landing at a suitable airport.

MAINTENANCE (M)

Lock associated EAI valve in the closed position (AMM 30-00-00/901).

1. Deactivate the associated EAI valve controller:
   A. For the right EAI valve:
      1) Open P210 panel EAI CTRL R circuit breaker.
   B. For the left EAI valve
      1) Open P310 panel EAI CTRL L circuit breaker.

TKK to TKR, TKU to TKZ

2. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
3. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
4. Lock the EAI valve in the closed position.
   A. Remove the locking screw from the normal position.
   B. Set the crank to the locked (closed) position.
   C. Install the locking screw through the crank into the locked position.
   D. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
5. Activate the thrust reverser (AMM 78-31-00/201).

TKK to TKR, TKU to TKZ

6. Activate the leading edge slats (AMM 27-81-00/201).
7. Activate the associated EAI valve controller by closing the associated circuit breaker.
8. Position the associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.

30-21-01 Engine Anti-Ice Systems

30-21-01-01 RR TJA,B,C,D,G,H, TJR to TJW, TKA to TKF

30-21-01-01A OAT 38 Degrees C or Below, With Deactivation Kit Installed

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

For operations at ambient temperature 38 degrees C or below, one may be inoperative provided:

a. Valve is deactivated open using deactivation kit.
b. Engine fan case overheat detection system operates normally.
c. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate the associated EAI valve by installing the EAI valve lock-open kit, P/N K28703 (AMM 30-00-00/901).

1. Remove inoperative EAI valve (AMM 30-21-02/401).
2. Modify valve with lock-open kit (AMM 30-00-00/901).
3. Re-install modified valve (AMM 30-21-02/401).

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

Takeoff & Landing	Enroute Climb	
9,117 kg	9,798 kg	-200
12,020 kg	9,798 kg	-200ER
9,979 kg	10,659 kg	-300

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5% for an inoperative EAI Valve or EAI Pressure Sensor, or by 0.8% for an inoperative EAI Card.
3. For ETOPS flight planning:

A. Increase the ETOPS engine inoperative Critical Fuel Reserves by 0.9%.

4. Position ENGINE ANTI-ICE selector(s) as follows:
   A. For EAI Valve or EAI Pressure Sensor inoperative:
      1) Position associated EAI selector ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.
         2. Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

   B. For EAI Card inoperative:
      1) Position both EAI selectors ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.
         2. The associated ANTI-ICE ENG L or R advisory message will be displayed, the EAI indication will not be displayed on EICAS, and the associated EAI valve will be displayed as invalid (low intensity white) and the green flow bar will not be displayed on the Air synoptic.

5. For the inoperative EAI valve:
   A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:
      1) Do not accomplish the initial one minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01 **Engine Anti-Ice Systems**

30-21-01-01 **RR**

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

30-21-01-01B **OAT 38 Degrees C or Below, Without Deactivation Kit Installed**

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

For operations at ambient temperature 38 degrees C or below, one may be inoperative provided:

a. Valve is electrically disconnected and verified open.
b. Engine fan case overheat detection system operates normally.
c. Associated EAI pressure sensor system operates normally.
d. Associated EAI card operates normally.
e. Appropriate performance adjustments are applied.

MAINTENANCE (M)

For EAI VALVE L or R status message displayed, deactivate the EAI valve by disconnecting the electrical connector and verify EAI valve is open when the associated engine is running (AMM 30-00-00/901).

1. Deactivate the associated EAI valve controller.
   A. For the right EAI valve:
      1) Open P210 panel EAI CTRL R circuit breaker.
   B. For the left EAI valve:
      1) Open P310 panel EAI CTRL L circuit breaker.
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Deactivate the EAI valve in the open position.
   A. On the associated engine, disconnect, cap and stow the torque motor electrical connector DM30211 or DM30211A from the EAI valve controller, M30211.
   B. Install a protective cover over the electrical connector on the valve controller.
4. Activate the thrust reverser (AMM 78-31-00/201).
5. Activate the associated EAI valve controller by closing the associated circuit breaker.
6. Verify the EAI valve is open when the associated engine is running.

A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.

B. Start the associated engine (71-00-00/201).

C. Confirm the EAI indication (green EAI) is displayed above the N1 indication on the EICAS display for the associated engine (indicates the EAI valve is open).

Note: If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

D. Shut down the associated engine (71-00-00/201).

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

-200
-200ER
-300

Takeoff & Landing	Enroute Climb
9,117 kg	9,798 kg
12,020 kg	9,798 kg
9,979 kg	10,659 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5%.

3. For ETOPS flight planning:

   A. Increase the ETOPS engine inoperative Critical Fuel Reserves by 0.9%.

4. Verify the EAI valve is open when the associated engine is running before each departure.

   A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.

   B. After the associated engine has been started:

      1) Confirm the associated EAI indication (green EAI) is displayed above the N1 indication.

Notes: 1. If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

2. On the Air synoptic, the EAI valve will indicate failed open because the EAI selector is OFF and the green flow bar will be displayed.

5. Position associated ENGINE ANTI-ICE selector ON.

   Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

   2. Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

6. For the inoperative EAI valve:

   A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:

      1) Do not accomplish the initial one minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01 Engine Anti-Ice Systems

30-21-01-01 RR

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

30-21-01-01C OAT Above 38 Degrees C, With Deactivation Kit Installed

Interval	Installed	Required	Procedure
A	2	1	**(M) (O) (P) (MV)**

For operations at ambient temperature above 38 degrees C, one may be inoperative provided:

a. Valve is deactivated open using deactivation kit.
b. Engine fan case overheat detection system operates normally.
c. Appropriate performance adjustments are applied.
d. Repairs are made within three flight days.

MAINTENANCE (M)

Deactivate the associated EAI valve by installing the EAI valve lock-open kit, P/N K28703 (AMM 30-00-00/901).

1. Remove inoperative EAI valve (AMM 30-21-02/401).
2. Modify valve with lock-open kit (AMM 30-00-00/901).
3. Re-install modified valve (AMM 30-21-02/401).

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

Takeoff & Landing	Enroute Climb
9,117 kg	9,798 kg
12,020 kg	9,798 kg
9,979 kg	10,659 kg

-200

-200ER

-300

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5% for an inoperative EAI Valve or EAI Pressure Sensor, or by 0.8% for an inoperative EAI Card.

3. For ETOPS flight planning:

   A. Increase the ETOPS engine inoperative Critical Fuel Reserves by 0.9%.

4. Position ENGINE ANTI-ICE selector(s) as follows:

   A. For EAI Valve or EAI Pressure Sensor inoperative:

      1) Position associated EAI selector ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

         2. Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

   B. For EAI Card inoperative:

      1) Position both EAI selectors ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

         2. The associated ANTI-ICE ENG L or R advisory message will be displayed, the EAI indication will not be displayed on EICAS, and the associated EAI valve will be displayed as invalid (low intensity white) and the green flow bar will not be displayed on the Air synoptic.

5. For the inoperative EAI valve:

A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:

1) Do not accomplish the initial one minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01 Engine Anti-Ice Systems

30-21-01-01 RR

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF

30-21-01-01D OAT Above 38 Degrees C, Without Deactivation Kit Installed

Interval	Installed	Required	Procedure
A	2	1	**(M) (O) (P) (MV)**

For operations at ambient temperature above 38 degrees C, one may be inoperative provided:

a. Valve is electrically disconnected and verified open.
b. Engine fan case overheat detection system operates normally.
c. Associated EAI pressure sensor system operates normally.
d. Associated EAI card operates normally.
e. Appropriate performance adjustments are applied.
f. Repairs are made within three flight days.

MAINTENANCE (M)

For EAI VALVE L or R status message displayed, deactivate the EAI valve by disconnecting the electrical connector and verify EAI valve is open when the associated engine is running (AMM 30-00-00/901).

1. Deactivate the associated EAI valve controller.
   A. For the right EAI valve:
      1) Open P210 panel EAI CTRL R circuit breaker.
   B. For the left EAI valve:
      1) Open P310 panel EAI CTRL L circuit breaker.
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Deactivate the EAI valve in the open position.
   A. On the associated engine, disconnect, cap and stow the torque motor electrical connector DM30211 or DM30211A from the EAI valve controller, M30211.

B. Install a protective cover over the electrical connector on the valve controller.

4. Activate the thrust reverser (AMM 78-31-00/201).
5. Activate the associated EAI valve controller by closing the associated circuit breaker.
6. Verify the EAI valve is open when the associated engine is running.
   A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
   B. Start the associated engine (71-00-00/201).
   C. Confirm the EAI indication (green EAI) is displayed above the N1 indication on the EICAS display for the associated engine (indicates the EAI valve is open).

      Note: The EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

   D. Shut down the associated engine (71-00-00/201).

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

	Takeoff & Landing	Enroute Climb
-200	9,117 kg	9,798 kg
-200ER	12,020 kg	9,798 kg
-300	9,979 kg	10,659 kg

   Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5%.
3. For ETOPS flight planning:
   A. Increase the ETOPS engine inoperative Critical Fuel Reserves by 0.9%.
4. Verify the EAI valve is open when the associated engine is running before each departure.
   A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
   B. After the associated engine has been started:
      1) Confirm the associated EAI indication (green EAI) is displayed above the N1 indication.

Notes: 1. If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

2. On the Air synoptic, the EAI valve will indicate failed open because the EAI selector is OFF and the green flow bar will be displayed.

5. Position associated ENGINE ANTI-ICE selector ON.

Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

2. Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

6. For the inoperative EAI valve:

A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:

1) Do not accomplish the initial one minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01 Engine Anti-Ice Systems

30-21-01-02 GE

TKK to TKR, TKU to TKZ

30-21-01-02A OAT 38 Degrees C or Below, With Deactivation Kit Installed

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

For operations at ambient temperature 38 degrees C or below, one may be inoperative provided:

a. Valve is deactivated open using deactivation kit.

b. Engine fan case overheat detection system operates normally.

c. Turbine case cooling air flow systems operate normally.

d. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate the associated EAI valve by installing the EAI valve lock-open kit, P/N K28703 (AMM 30-00-00/901).

1. Remove inoperative EAI valve (AMM 30-21-02/401).
2. Modify valve with lock-open kit (AMM 30-00-00/901).
3. Re-install modified valve (AMM 30-21-02/401).
4. Visually inspect the area near the Cowl Thermal Anti-Ice duct for signs of leaks and the fan cowl in general for flammable fluid leaks. Dispatch is not allowed if any of the duct clamps or supports are not secure or any air leaks from the EAI duct are present, or if significant flammable fluid leakage is present.

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

Takeoff & Landing	Enroute Climb
4,717 kg	5,353 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 1.0% for an inoperative EAI Valve or EAI Pressure Sensor, or by 1.3% for an inoperative EAI Card.
3. For ETOPS flight planning:
   A. Increase engine inoperative Critical Fuel Reserves by 1.8%.
4. Position ENGINE ANTI-ICE selector(s) as follows:
   A. For EAI Valve or EAI Pressure Sensor inoperative:
      1) Position associated EAI selector ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.
         2. In flight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

   B. For EAI Card inoperative:
      1) Position both EAI selectors ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

2. The associated ANTI-ICE ENG L or R advisory message will be displayed, the EAI indication will not be displayed on EICAS, and the associated EAI valve will be displayed as invalid (low intensity white) and the green flow bar will not be displayed on the Air synoptic.

5. For the inoperative EAI valve:
   A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:
      1) Do not accomplish the two minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01 Engine Anti-Ice Systems

30-21-01-02 GE

TKK to TKR, TKU to TKZ

30-21-01-02B OAT 38 Degrees C or Below, Without Deactivation Kit Installed

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

For operations at ambient temperature 38 degrees C or below, one may be inoperative provided:

a. Valve is electrically disconnected and verified open.
b. Engine fan case overheat detection system operates normally.
c. Associated EAI pressure sensor system operates normally.
d. Associated EAI card operates normally.
e. Turbine case cooling air flow systems operate normally.
f. Appropriate performance adjustments are applied.

MAINTENANCE (M)

For EAI VALVE L or R status message displayed, deactivate the EAI valve by disconnecting the electrical connector and verify EAI valve is open when the associated engine is running (AMM 30-00-00/901).

1. Deactivate the associated EAI valve controller.
   A. For the right EAI valve:
      1) Open P210 panel EAI CTRL R circuit breaker.
   B. For the left EAI valve:

1) Open P310 panel EAI CTRL L circuit breaker.

2. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
3. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
4. Deactivate the EAI valve in the open position.
   A. On the associated engine, disconnect, cap and stow the torque motor electrical connector DM30211 or DM30211A from the EAI valve controller, M30211.
   B. Install a protective cover over the electrical connector on the valve controller.
   C. Visually inspect the area near the Cowl Thermal Anti-Ice duct for signs of leaks and the fan cowl in general for flammable fluid leaks. Dispatch is not allowed if any of the duct clamps or supports are not secure or any air leaks from the EAI duct are present, or if significant flammable fluid leakage is present.
5. Activate the thrust reverser (AMM 78-31-00/201).
6. Activate the leading edge slats (AMM 27-81-00/201).
7. Activate the associated EAI valve controller by closing the associated circuit breaker.
8. Verify the EAI valve is open when the associated engine is running.
   A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
   B. Start the associated engine (71-00-00/201).
   C. Confirm the EAI indication (green EAI) is displayed above the N1 indication on the EICAS display for the associated engine (indicates the EAI valve is open).

      Note: If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

   D. Shut down the associated engine (71-00-00/201).

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

Takeoff & Landing	Enroute Climb
4,717 kg	5,353 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 1.0%.
3. For ETOPS flight planning:
   A. Increase engine inoperative Critical Fuel Reserves by 1.8%.
4. Verify the EAI valve is open when the associated engine is running before each departure.
   A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
   B. After the associated engine has been started:
      1) Confirm the associated EAI indication (green EAI) is displayed above the N1 indication.

         Notes: 1. If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.
         2. On the Air synoptic, the EAI valve will indicate failed open because the EAI selector is OFF and the green flow bar will be displayed.
5. Position associated ENGINE ANTI-ICE selector ON.

   Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.
   2. Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.
6. For the inoperative EAI valve:
   A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:
      1) Do not accomplish the two minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01 Engine Anti-Ice Systems

TKK to TKR, TKU to TKZ

30-21-01-02 GE

30-21-01-02C OAT Above 38 Degrees C, With Deactivation Kit Installed

Interval	Installed	Required	Procedure
A	2	1	**(M) (O) (P) (MV)**

For operations at ambient temperature above 38 degrees C, one may be inoperative provided:

a. Valve is deactivated open using deactivation kit.
b. Engine fan case overheat detection system operates normally.
c. Turbine case cooling air flow systems operate normally.
d. Appropriate performance adjustments are applied.
e. Repairs are made within three flight days.

MAINTENANCE (M)

Deactivate the associated EAI valve by installing the EAI valve lock-open kit, P/N K28703 (AMM 30-00-00/901).

1. Remove inoperative EAI valve (AMM 30-21-02/401).
2. Modify valve with lock-open kit (AMM 30-00-00/901).
3. Re-install modified valve (AMM 30-21-02/401).
4. Visually inspect the area near the Cowl Thermal Anti-Ice duct for signs of leaks and the fan cowl in general for flammable fluid leaks. Dispatch is not allowed if any of the duct clamps or supports are not secure or any air leaks from the EAI duct are present, or if significant flammable fluid leakage is present.

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

Takeoff & Landing	Enroute Climb
4,717 kg	5,353 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 1.0% for an inoperative EAI Valve or EAI Pressure Sensor, or by 1.3% for an inoperative EAI Card.
3. For ETOPS flight planning:
   A. Increase engine inoperative Critical Fuel Reserves by 1.8%.
4. Position ENGINE ANTI-ICE selector(s) as follows:
   A. For EAI Valve or EAI Pressure Sensor inoperative:
      1) Position associated EAI selector ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

         2. Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

   B. For EAI Card inoperative:
      1) Position both EAI selectors ON.

         Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

         2. The associated ANTI-ICE ENG L or R advisory message will be displayed, the EAI indication will not be displayed on EICAS, and the associated EAI valve will be displayed as invalid (low intensity white) and the green flow bar will not be displayed on the Air synoptic.
5. For the inoperative EAI valve:
   A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:
      1) Do not accomplish the two minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01 Engine Anti-Ice Systems

TKK to TKR, TKU to TKZ

30-21-01-02 GE

30-21-01-02D OAT Above 38 Degrees C, Without Deactivation Kit Installed

Interval	Installed	Required	Procedure
A	2	1	**(M) (O) (P) (MV)**

For operations at ambient temperature above 38 degrees C, one may be inoperative provided:

a. Valve is electrically disconnected and verified open.
b. Engine fan case overheat detection system operates normally.
c. Associated EAI pressure sensor system operates normally.
d. Associated EAI card operates normally.
e. Turbine case cooling air flow systems operate normally.
f. Appropriate performance adjustments are applied.
g. Repairs are made within three flight days.

MAINTENANCE (M)

For EAI VALVE L or R status message displayed, deactivate the EAI valve by disconnecting the electrical connector and verify EAI valve is open when the associated engine is running (AMM 30-00-00/901).

1. Deactivate the associated EAI valve controller.
   A. For the right EAI valve:
      1) Open P210 panel EAI CTRL R circuit breaker.
   B. For the left EAI valve:
      1) Open P310 panel EAI CTRL L circuit breaker.
2. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
3. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
4. Deactivate the EAI valve in the open position.
   A. On the associated engine, disconnect, cap and stow the torque motor electrical connector DM30211 or DM30211A from the EAI valve controller, M30211.
   B. Install a protective cover over the electrical connector on the valve controller.

C. Visually inspect the area near the Cowl Thermal Anti-Ice duct for signs of leaks and the fan cowl in general for flammable fluid leaks. Dispatch is not allowed if any of the duct clamps or supports are not secure or any air leaks from the EAI duct are present, or if significant flammable fluid leakage is present.

5. Activate the thrust reverser (AMM 78-31-00/201).
6. Activate the leading edge slats (AMM 27-81-00/201).
7. Activate the associated EAI valve controller by closing the associated circuit breaker.
8. Verify the EAI valve is open when the associated engine is running.
   A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
   B. Start the associated engine (71-00-00/201).
   C. Confirm the EAI indication (green EAI) is displayed above the N1 indication on the EICAS display for the associated engine (indicates the EAI valve is open).

      Note: If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

   D. Shutdown the associated engine (71-00-00/201).

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments:

Takeoff & Landing	Enroute Climb
4,717 kg	5,353 kg

   Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 1.0%.
3. For ETOPS flight planning:
   A. Increase engine inoperative Critical Fuel Reserves by 1.8%.
4. Verify the EAI valve is open when the associated engine is running before each departure.
   A. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
   B. After the associated engine has been started:
      1) Confirm the associated EAI indication (green EAI) is displayed above the N1 indication.

Notes: 1. If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

2. On the Air synoptic, the EAI valve will indicate failed open because the EAI selector is OFF and the green flow bar will be displayed.

C. After the associated engine has been started, confirm the associated EAI indication (green EAI) is displayed above the N1 indication.

Notes: 1. If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

2. On the Air synoptic, the EAI valve will indicate failed open because the EAI selector is OFF and the green flow bar will be displayed.

5. Position associated ENGINE ANTI-ICE selector ON.

Notes: 1. When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

2. Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

6. For the inoperative EAI valve:

A. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed:

1) Do not accomplish the two minute delay associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-02 Engine Anti-Ice Indications (EAI)

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

30-31-01 Pitot Probe Heater Systems

30-31-01-01 Right Pitot Heater

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

May be inoperative provided:

a. Right pitot air data module is deactivated.
b. Left and center pitot air data modules operate normally.
c. Left and center pitot probe heater systems operate normally.
d. Left static air data module operates normally.
e. Standby airspeed indication operates normally.
f. Right AIR DATA/ATT instrument source switch operates normally.
g. Approach minimums do not require its use.
h. SAARU data is verified to be available to the right PFD before each departure.
i. Left and center pitot probes are inspected before each departure.

Note: Approaches are limited to CAT IIIA with decision height.

Note: The airplane must also be dispatched using MEL Item 34-21-04-01 and 34-21-06.

MAINTENANCE (M)

Note: The left, center and right Pitot and Static ADMs are interchangeable.

Deactivate the right Pitot Air Data Module (ADM), inspect the left and center Pitot Probes before each departure, and verify SAARU data is available to the right Primary Flight Display (PFD) before each departure (AMM 30-00-00/901).

1. Deactivate the right Pitot ADM.

   Notes: 1. The PITOT ADM R status message will be displayed.
   2. The AOA VANE R status message will be displayed.

   A. Gain access to the Right Flight Controls Power Supply Assembly (PSA) on Equipment Rack E5-1.

   B. Open and collar the Right Flight Controls Power Supply Assembly (PSA) front panel PITOT ADM circuit breaker.

2. Prior to each departure, visually examine the left and center pitot probe external installations for damage and unwanted material in the pitot probe's

opening. If damage or unwanted material is noted, perform Pitot Probe-Inspection/ Check (AMM 34-11-01/601).

3. Verify SAARU data is available to the right Primary Flight Display (PFD) before each departure.
   A. With the airplane powered, verify SAARU alignment.
   B. Position right AIR DATA/ATT switch to ALTN (non-normal position - switch in).
   C. Verify the Attitude Indication on the right PFD displays the sky/ground (blue over brown) shading and pitch scale.
   D. Position right AIR DATA/ATT switch off (normal position - switch out).

OPERATIONS NOTE

1. The autoland system is not fail-operational and the NO LAND 3 advisory message will be displayed.
2. If the Captain's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed will be flagged on the left PFD. This effect is normal for this dispatch condition.
3. An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid (if the center Pitot Heat is inoperative, data from the center Pitot ADM is not used in the voted airspeed determination). Lack of valid voted airspeed will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs.

   Note: For a right PFD airspeed flagged, selection of the First Officer's AIR DATA/ATT switch to ALTN will display the left PFD airspeed on the right PFD. This single airspeed condition will be indicated by the SGL SOURCE AIR DATA advisory message.

   The following display effects with regard to airspeed (A/S) are possible:

Pitot Heat Inop/Pitot ADM Deact. At Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Right	Left	In Error (plugged)	Correct	Flag (ADM deact.)
Right	Center	Correct	In Error (plugged)	Flag (ADM deact.)

30-31-01 Pitot Probe Heater Systems

30-31-01-02 Left Pitot Heater

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

May be inoperative provided:

a. Left pitot air data module is deactivated.
b. Right and center pitot air data modules operate normally.
c. Right and center pitot probe heater systems operate normally.
d. Right static air data module operates normally.
e. Standby airspeed indication operates normally.
f. Left AIR DATA/ATT instrument source switch operates normally.
g. Approach minimums do not require its use.
h. SAARU data is verified to be available to the left PFD before each departure.
i. Right and center pitot probes are inspected before each departure.

Note: Approaches are limited to CAT IIIA with decision height.

Note: The airplane must be dispatched using MEL Item 34-21-04-02, 34-21-06 and 34-46-01-02.

MAINTENANCE (M)

Note: The left, center and right Pitot and Static ADMs are interchangeable.

Deactivate the left Pitot Air Data Module (ADM), inspect the right and center Pitot Probes before each departure, and verify SAARU data is available to the left Primary Flight Display (PFD) before each departure.

1. Deactivate the left Pitot ADM (AMM 30-00-00/901).

Notes:
1. The PITOT ADM L status message will be displayed.
2. The AOA VANE L status message will be displayed.
3. The WINDSHEAR REAC status message will be displayed.
4. The SATCOM SYSTEM and SATCOM HI GAIN status messages may be displayed. For a SATCOM SYSTEM or SATCOM HI GAIN status message displayed, the airplane must also be dispatched using MEL Item 23-15-01.

A. Gain access to the Left Flight Controls Power Supply Assembly (PSA) on Equipment Rack E1-6.

B. Open and collar the Left Flight Controls Power Supply Assembly (PSA) front panel PITOT ADM circuit breaker.

2. Prior to each departure, visually examine the right and center pitot probe external installations for damage and unwanted material in the pitot probe's opening. If damage or unwanted material is noted, perform Pitot Probe-Inspection/ Check (AMM 34-11-01/601).

3. Verify SAARU data is available to the left Primary Flight Display (PFD) before each departure.

A. With the airplane powered, verify SAARU alignment.

B. Position left AIR DATA/ATT switch to ALTN (non-normal position - switch in).

C. Verify the Attitude Indication on the left PFD displays the sky/ground (blue over brown) shading and pitch scale.

D. Position left AIR DATA/ATT switch off (normal position - switch out).

OPERATIONS NOTE

1. The autoland system is not fail-operational and the NO LAND 3 advisory message will be displayed.

2. If the First Officer's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed will be flagged on the right PFD. This effect is normal for this dispatch condition.

3. The WINDSHEAR SYS advisory message will be displayed.

4. An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid (if the center Pitot Heat is inoperative, data from the center Pitot ADM is not used in the voted airspeed determination). Lack of valid voted airspeed will result in display of the NAV AIR DATA SYS advisory message or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs.

Note: For a left PFD airspeed flagged, selection of the Captain's AIR DATA/ ATT switch to ALTN will display the right PFD airspeed on the left PFD. This single airspeed condition will be indicated by the SGL SOURCE AIR DATAV advisory message.

The following display effects with regard to airspeed (A/S) are possible:

Pitot Heat Inop/Pitot ADM Deact. At Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/ S Display	Standby A/ S Display	R PFD A/ S Display
Left	Center	Flag (ADM deact.)	In Error (plugged)	Correct

Pitot Heat Inop/Pitot ADM Deact. At Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Left	Right	Flag (ADM deact.)	Correct	In Error (plugged)

30-31-01 Pitot Probe Heater Systems

30-31-01-03 Center Pitot Heater

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

May be inoperative provided:

a. Left and right pitot air data modules operate normally.
b. Left and right pitot probe heater systems operate normally.
c. Standby airspeed indication operates normally.
d. Approach minimums do not require its use.
e. Airplane is not operated in known or forecast icing conditions or visible moisture.
f. Left and right pitot probes are inspected before each departure.
g. Flight remains within 120 minutes of landing at a suitable airport.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Note: The left, center and right Pitot and Static ADMs are interchangeable.

1. Prior to each departure, visually examine the right and center pitot probe external installations for damage and unwanted material in the pitot probe's opening. If damage or unwanted material is noted, perform Pitot Probe-Inspection/ Check (AMM 34-11-01/601).

OPERATIONS NOTE

1. The autoland system is not fail-operational and the NO LAND 3 advisory message will be displayed.
2. Data from the center Pitot ADM will not be used in the voted airspeed determination. An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid Lack of valid voted airspeed will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution

message and single channel airspeed and altitude will be displayed on the PFDs.

The following display effects with regard to airspeed (A/S) are possible:

Pitot Heat Inoperative	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Center [a)]	Left	In Error (plugged)	Unheated [a)]	Correct
Center [a)]	Right	Correct	Unheated [a)]	In Error (plugged)

a) Restricted to non-icing conditions

30-33-01 Total Air Temperature (TAT) Probe Heater System

30-33-01-01 Single TAT System

Interval	Installed	Required	Procedure
C	1	0	**(P) (MV)**

May be inoperative provided:

a. The airplane is not operated in known or forecast icing conditions.

b. Flight remains within 120 minutes of landing at a suitable airport.

30-34-01 Engine PT2/TT2 Probe Heater Systems

30-34-01-02 RR

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

May be inoperative provided:

a. N2 indication on associated engine operates normally.
b. Both engines are operated in the alternate (ALTN) mode.
c. Appropriate performance adjustments are applied.

OPERATIONS (O)

1. Use MEL Item 73-21-02-03 Operations procedure.

30-41-01 Flight Deck Forward Window Primary Heater Systems

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Associated window backup heater operates normally.
b. Both left and right side (No. 2) window heaters operate normally.
c. Airplane is not operated in known or forecast icing conditions.
d. Associated switch remains OFF.
e. Flight remains within 120 minutes of landing at a suitable airport.

OPERATIONS NOTE

1. If cracks are observed in the associated window, notify maintenance to inspect the window per AMM 56-11-00/601.

30-41-02 Flight Deck Side (No. 2) Window Heater Systems

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

One may be inoperative provided:

a. Both forward window primary heaters operate normally.

b. Associated switch remains OFF.

30-41-03 Flight Deck Aft (No. 3) Window Heater Systems

Interval	Installed	Required	Procedure
D	2	0	**(P)**

30-41-04 WINDOW HEAT Switch Lights

30-41-04-01 INOP Lights

Interval	Installed	Required	Procedure
C	4	0	**(P)**

30-41-04 WINDOW HEAT Switch Lights

30-41-04-02 ON Lights

Interval	Installed	Required	Procedure
C	4	0	**(P)**

30-42-01 Windshield Wipers

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

May be inoperative provided:

a. Airplane is not operated in precipitation within 5 statute miles of the airport of departure or intended landing.

b. Approach minimums do not require its use.

30-42-01 Windshield Wipers

30-42-01-01 Low Speed Functions

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

May be inoperative provided:

a. Associated high speed function operates normally.

30-42-01 Windshield Wipers

30-42-01-02 High Speed Functions

30-42-01-02A One Inoperative

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

One may be inoperative provided:

a. Associated low speed function operates normally.

30-42-01 Windshield Wipers

30-42-01-02 High Speed Functions

30-42-01-02B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

May be inoperative provided:

a. Both low speed functions operate normally.

b. Airplane is not operated in known or forecast precipitation of moderate or greater intensity within 5 statute miles of the airport of departure or intended landing.

30-42-01 Windshield Wipers

30-42-01-03 Intermittent Functions

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

30-71-01 Drain Mast Heaters

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

May be inoperative provided:

a. Associated galley service and lavatory sinks are not used.

b. Associated galley and lavatory sink water supply shutoff valves are closed.

MAINTENANCE (M)

Shut off the water supplies associated with the inoperative drain mast heater (AMM 30-00-00/901).

-200,-200ER 1. For -200/-200ER:

A. For the forward drain mast heater inoperative:

1) Close the water supply shut off valves to the galley sinks, lavatory sinks and drinking fountains (if installed) forward of, but not including, the door 3 service area.

B. For the aft drain mast heater inoperative:

1) Close the water supply shut off valves to the galley sinks, lavatory sinks and drinking fountains (if installed) aft of, and including, the door 3 service area.

-300,-300ER 2. For -300/-300ER:

A. For the forward drain mast heater inoperative:

1) Close the water supply shut off valves to the galley sinks, lavatory sinks and drinking fountains (if installed) forward and including the door 3 service area, except outboard lavatories installed on the aft side of the door 3 service area.

B. For the aft drain mast heater inoperative:

1) Close the water supply shut off valves to the galley sinks, lavatory sinks and drinking fountains (if installed) aft of the door 3 service area including outboard lavatories installed on the aft side of the door 3 service area.

30-81-01 Ice Detectors

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

May be inoperative provided:

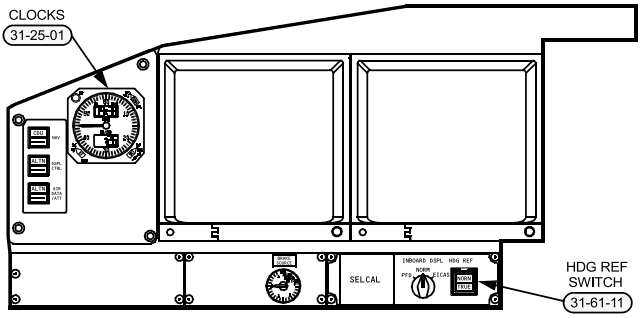
a. Engine and wing anti-ice systems are operated manually.

OPERATIONS (O)

1. If one or both ice detectors are inoperative:
   A. Operate the Wing and Engine Anti-Ice systems manually.

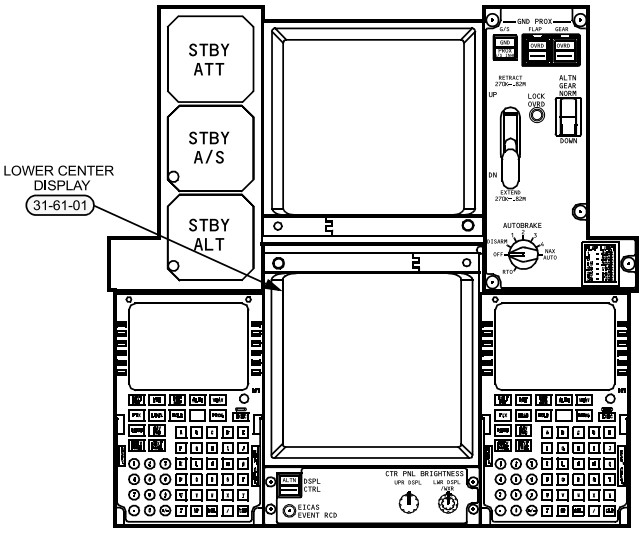
INDICATING/RECORDING SYSTEMS

General Locations

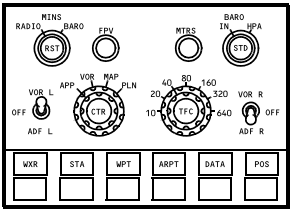


CAPTAINS MAIN INSTRUMENT PANEL (P1)

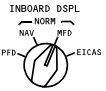
CENTER INSTRUMENT PANEL (P2)



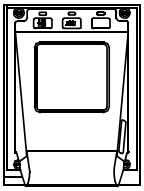
FORWARD ELECTRONICS PANEL (P9)



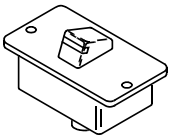
EFIS CONTROL PANEL
31-61-08



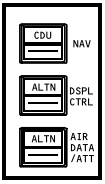
INBOARD DISPLAY SELECTOR
31-61-06



CURSOR CONTROL DEVICE
31-61-02



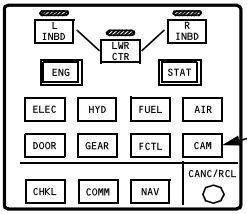
REMOTE LIGHT SENSOR
31-61-03



INSTRUMENT SOURCE SELECT PANEL
31-61-09

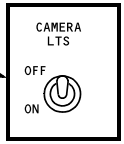
MASTER CAUTION LIGHT
31-51-02

MASTER WARNING LIGHT
31-51-01



DISPLAY SELECT PANEL
31-61-04

GROUND MANEUVER CAMERA SYSTEM (-300)
31-61-10



OVERHEAD PANEL

31-09-01 Systems Cardfile ARINC Signal Gateway (ASG) Cards

Interval	Installed	Required	Procedure
C	4	2	**(O) (P)**

Two ASG cards and/or the associated ARINC 629 couplers may be inoperative provided:

a. One inoperative ASG card and/or associated ARINC 629 coupler is in the left systems cardfile.

b. One inoperative ASG card and/or associated ARINC 629 coupler is in the right systems cardfile.

c. Left and right hydraulic demand pump ON and OFF selectors operate normally.

d. Left and right hydraulic demand pump selectors are ON for takeoff and landing.

e. Center system hydraulic demand pump C1 or C2 is ON for takeoff and landing.

OPERATIONS (O)

Note: The ENG IDLE DISAGREE advisory message may be displayed for an inoperative ASG card. For LSCF ASG CARD L and RSCF ASG CARD R status messages displayed, both engines will operate at approach idle in the air whenever idle thrust is selected.

1. Position Hydraulic Panel (P5) DEMAND L and R ELEC selectors ON for takeoff and landing.
2. Position Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector ON for takeoff and landing.

   Note: Do not position center system demand pump selector ON before engine start.

31-09-01 Systems Cardfile ARINC Signal Gateway (ASG) Cards

31-09-01-01 Left Systems Cardfile ASG Cards

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

One ASG card and/or the associated ARINC 629 coupler may be inoperative in the left systems cardfile provided:

a. Left hydraulic demand pump ON and OFF selector operates normally.
b. Left hydraulic demand pump selector is ON for takeoff and landing.
c. Both right systems cardfile ASG cards operate normally.

OPERATIONS (O)

1. Position Hydraulic Panel (P5) DEMAND L ELEC selector ON for takeoff and landing.

   Note: For LSCF ASG CARD L status message displayed, the ENG IDLE DISAGREE advisory message may be displayed.

31-09-01 Systems Cardfile ARINC Signal Gateway (ASG) Cards

31-09-01-02 Right Systems Cardfile ASG Cards

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

One ASG card and/or the associated ARINC 629 coupler may be inoperative in the right systems cardfile provided:

a. Right hydraulic demand pump ON and OFF selector operates normally.
b. Right hydraulic demand pump selector is ON for takeoff and landing.
c. Both left systems cardfile ASG cards operate normally.

OPERATIONS (O)

1. Position Hydraulic Panel (P5) DEMAND R ELEC selector ON for takeoff and landing.

   Note: For RSCF ASG CARD R status message displayed, the ENG IDLE DISAGREE advisory message may be displayed.

31-09-02 Systems Cardfile Power Supplies

31-09-02-01 Left Systems Cardfile (LSCF) Power Supplies

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

One power supply may be inoperative deactivated.

MAINTENANCE (M)

Deactivate the inoperative power supply (AMM 31-00-00/901).

Note: The power supply preregulator cards are interchangeable and the linear monitor cards are interchangeable.

1. For an inoperative left systems cardfile power supply 1, open and collar P310 panel LSCF PS 1 circuit breaker.
2. For an inoperative left systems cardfile power supply 2, open and collar P310 panel LSCF PS 2 circuit breaker.

OPERATIONS (O)

1. For the LSCF power supply 2 inoperative:
   A. Do not position the Battery switch OFF until the APU has spooled down. After initiating normal APU shutdown wait two minutes before positioning the Battery switch OFF.

31-09-02 Systems Cardfile Power Supplies

31-09-02-02 Right Systems Cardfile (RSCF) Power Supplies

31-09-02-02A Power Supply 2 Inoperative

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

Power supply 2 may be inoperative deactivated.

MAINTENANCE (M)

Deactivate the right systems cardfile power supply 2 (AMM 31-00-00/901).

Note: The power supply preregulator cards are interchangeable and the linear monitor cards are interchangeable.

1. Open and collar P210 panel RSCF PS 2 circuit breaker.

31-09-02 Systems Cardfile Power Supplies

31-09-02-02 Right Systems Cardfile (RSCF) Power Supplies

31-09-02-02B Power Supply 1 Inoperative

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

Power supply 1 may be inoperative deactivated provided:

a. Left air/ground system operates normally.

MAINTENANCE (M)

Deactivate the right systems cardfile power supply 1 (AMM 31-00-00/901).

Note: The power supply preregulator cards are interchangeable and the linear monitor cards are interchangeable.

1. Open and collar P310 panel RSCF PS 1 circuit breaker.

31-20-01 Countdown Timer

Interval	Installed	Required	Procedure
D	1	0	**(P)**

31-25-01 Clocks

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

31-25-02 Clock Switches

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

31-31-01 Flight Data Recorder (FDR) System

Interval	Installed	Required	Procedure
A	1	0	**(P)**

May be inoperative provided:

a. Cockpit Voice Recorder (CVR) operates normally.

b. Airplane is not dispatched from an airport where repairs or replacements can be made.

c. 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 airport where repair must be accomplished prior to dispatch.

d. Repairs are made within three flight days.

31-33-01 Airborne Printer (Flight Deck)

31-33-01B Procedures Do Not Require Use

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

MAINTENANCE NOTE

1. If desired, the Airborne Printer can be deactivated by opening and collaring the P210 panel FLT DECK PRINTER circuit breaker.

31-33-01 Airborne Printer (Flight Deck)

31-33-01-01 Miscellaneous Features

Interval	Installed	Required	Procedure
D	–	0	**(P)**

MAINTENANCE NOTE

1. Miscellaneous Features refer to those features, which when inoperative, do not affect the printer's primary functions. The paper cutter would be an example of a Miscellaneous Feature.

31-35-01 Quick Access Recorder

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

31-35-02 Airplane Condition Monitoring Function (ACMF)

Interval	Installed	Required	Procedure
D	1	0	**(P)**

TJR to TJW, TKK to TKR, TKU to TKZ

31-41-03 Airplane Information Management System (AIMS)

31-41-03-01 AIMS-2 Cabinet Bus

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

May be dispatched with AIMS CABINET BUS faults.

31-51-01 Master Warning Lights (Glareshield)

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

One may be inoperative provided:

a. The aural for the master warning system operates normally.

31-51-02 Master Caution Lights (Glareshield)

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

One may be inoperative provided:

a. The aural for the master caution system operates normally.

31-51-03 Aural Warning Speaker Systems

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Master warning and master caution lights operate normally.

Note: Approaches are limited to CAT IIIA with decision height.

31-51-04 Warning Electronics System (WES) Channels

31-51-04-01 Warning Electronics System (WES) Channels

31-51-04-01A Channel Not Deactivated

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

One may be inoperative provided:

a. Both stabilizer position indicators operate normally.

b. SPEED LIM flag is not displayed adjacent to the airspeed indication on either PFD.

MAINTENANCE NOTE

1. The stabilizer position indicator operates normally if the stabilizer position and green band are displayed on the indicator (indicators not blanked).

31-51-04 Warning Electronics System (WES) Channels

31-51-04-01 Warning Electronics System (WES) Channels

31-51-04-01B Channel Deactivated

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

One may be inoperative deactivated.

MAINTENANCE (M)

Note: The warning electronic system (WES) consists of four warning electronic unit (WEU) channels.

Deactivate the inoperative WEU channel (AMM 31-00-00/901).

1. For WEU CHANNEL L1:

   A. Open and collar ELMS P310 Panel WARNING ELECTRONIC - L1 circuit breaker.

      Note: STALL WARNING SYS L and WARNING SPEAKER L status messages will be displayed. The airplane must also be dispatched using MEL Items 27-32-01 and 31-51-03.

2. For WEU CHANNEL L2:

A. Open and collar ELMS P310 Panel WARNING ELECTRONIC - L2 circuit breaker.

Note: STALL WARNING SYS L status message will be displayed. The airplane must also be dispatched using MEL Item 27-32-01.

3. For WEU CHANNEL R1:

A. Open and collar ELMS P210 Panel WARNING ELECTRONIC - R1 circuit breaker.

Note: STALL WARNING SYS R and WARNING SPEAKER R status messages will be displayed. The airplane must also be dispatched using MEL Items 27-32-01 and 31-51-03.

4. For WEU CHANNEL R2:

A. Open and collar ELMS P210 Panel WARNING ELECTRONIC - R2 circuit breaker.

Note: STALL WARNING SYS R status message will be displayed. The airplane must also be dispatched using MEL Item 27-32-01.

31-51-05 Warning Electronic System (WES) Autopilot Disconnect Warning Function

Interval	Installed	Required	Procedure
B	1	0	**(O) (P) (MV)**

May be inoperative provided:

a. Autopilots are not used.
b. Approach minimums do not require use of the autopilots.
c. Number of flight segments and segment duration is acceptable to flight crew.
d. Flight crewmembers are limited to 5 flight hours per scheduled flight day.
e. Enroute operations do not require use of the autopilots.
f. Flight remains within 180 minutes of landing at a suitable airport.

OPERATIONS (O)

Do not use the autopilots and observe the following restrictions:

1. Approach minimums must not require autopilot use.
2. Flight crewmembers are limited to five (5) flight hours per scheduled flight day.
3. Enroute operations must not require autopilot use.
4. The flight must remain within 180 minutes of landing at a suitable airport.

31-51-05 Warning Electronic System (WES) Autopilot Disconnect Warning Function

31-51-05-01 WES Autopilot Interfaces

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

One may be inoperative provided:

a. The WES autopilot disconnect warning function is verified to operate normally.

OPERATIONS (O)

Verify the Warning Electronic System (WES) autopilot disconnect warning function operates normally.

1. Engage, then manually disengage the autopilots.
2. Confirm illumination of the master warning lights, activation of an aural indication and display of the AUTOPILOT DISC warning message.

31-61-01 Display Units (DU)

Interval	Installed	Required	Procedure
C	6	5	**(P)**

One may be inoperative in the lower center DU position.

MAINTENANCE NOTE

1. The six display units are interchangeable. If the inoperative display unit is in a location other than the lower center position, it can be replaced with the operative unit from the lower center position.
2. For a non-video capable display unit is installed in the left or right inboard or in the lower center display locations, ground maneuver camera video will not be available on that display.
3. Refer to AMM31-61-01/401 for DU removal and installation procedures.

31-61-02 Cursor Control Devices (CCD)

31-61-02A One Inoperative

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

31-61-02 Cursor Control Devices (CCD)

31-61-02B Both Inoperative

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

May be inoperative provided:

a. Paper checklist procedures are used.

OPERATIONS (O)

1. Paper checklist procedures must be used. Data communications functions such as ACARS are not accessible on an MFD.

31-61-02 Cursor Control Devices (CCD)

31-61-02-01 Cursor Location Lights

Interval	Installed	Required	Procedure
C	6	0	**(P)**

31-61-02 Cursor Control Devices (CCD)

31-61-02-02 Cursor Location Switch Lights

Interval	Installed	Required	Procedure
C	6	0	**(P)**

31-61-03 Remote Light Sensor (RLS) System

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

May be inoperative provided:

a. All manual display brightness controls operate normally.

31-61-04 Display Select Panel (DSP)

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

May be inoperative provided:

a. The left and right CDU DSP backup features are verified to operate normally.

MAINTENANCE (M)

1. Verify the left and right CDU DSP backup features operate normally (AMM 31-00-00/901).
   A. Press DSP CTL (Display Select Panel Control select key) on the main menu of the CDU to ON.
   B. Confirm that the DSP prompt is displayed on the main menu of the CDU beside the Display Select Panel page select key. This indicates display select control is available through the CDU.

OPERATIONS (O)

1. Use the CDU Display Select Panel (DSP) backup feature.

31-61-04 Display Select Panel (DSP)

31-61-04-01 Multifunction Display Lights

Interval	Installed	Required	Procedure
C	3	0	**(P)**

31-61-04 Display Select Panel (DSP)

31-61-04-02 Illuminated Switch Lights

31-61-04-02-01 -200/-200ER -200,-200ER

Interval	Installed	Required	Procedure
C	15	0	**(P)**

31-61-04 Display Select Panel (DSP)

31-61-04-02 Illuminated Switch Lights

-300,-300ER **31-61-04-02-02 -300/-300ER**

Interval	Installed	Required	Procedure
C	16	0	**(P)**

31-61-05 EICAS Status Messages

31-61-05A System(s) Used

Interval	Installed	Required	Procedure
C	–	0	**(M) (O) (P)**

May be inoperative provided:

a. An acceptable procedure is used before each flight to verify that associated equipment operates normally.

MAINTENANCE (M)

1. Verify the associated equipment operates normally before each flight (AMM 31-00-00/901).

   Note: There is no acceptable procedure available for verifying the Flight Control System operates normally when the FLIGHT CONTROL SYS status message is displayed.

OPERATIONS (O)

1. Verify the associated equipment operates normally before each flight.

31-61-05 EICAS Status Messages

31-61-05B System(s) Considered Inoperative

Interval	Installed	Required	Procedure
C	–	0	**(P)**

May be inoperative provided:

a. Associated equipment is considered inoperative.

31-61-06 Inboard Display Selector Positions (PFD, NAV, MFD, EICAS)

Interval	Installed	Required	Procedure
B	8	7	**(M) (O) (P)**

One may be inoperative provided:

a. Lower center display unit operates normally.

b. Remaining positions are verified to operate normally on associated selector.

MAINTENANCE (M)

Verify that the inboard display (INBOARD DSPL) selector with the inoperative position operates normally in the remaining positions (AMM 31-00-00/901).

1. Supply electrical power (AMM 24-22-00/201).
2. For verifying that the PFD position operates normally:
   A. Position the INBOARD DSPL selector with the inoperative position to PFD.
   B. Verify the associated side's inboard displays the PFD and the outboard display blanks.
   C. On the glareshield panel (P55), use the Display Select Panel (DSP) to select the inboard display unit associated with the inoperative INBOARD DSPL selector (L INBD or R INBD).
   D. On the DSP, verify that no other DSP selections will overwrite the PFD displayed on the inboard display.
3. For verifying that the MFD position operates normally:
   A. Position INBOARD DSPL selector with the inoperative position to MFD.
   B. On the glareshield panel (P55), use the Display Select Panel (DSP) to select the inboard display unit associated with the inoperative INBOARD DSPL selector (L INBD or R INBD).
   C. On the DSP, select the NAV position:
      1) Ensure the navigation display (ND) format appears on the associated inboard display unit.
      2) Use the EFIS Control Panel to adjust the range and modes on the ND to confirm the associated inboard display unit is properly responding to the EFIS CONTROL PANEL.
   D. On the DSP, one at a time, select the COMM and CHKL, and at least two synoptic formats. As each DSP selection is made, ensure the selected format appears on the associated inboard display unit.

4. For verifying that the NAV position operates normally:
   A. Position INBOARD DSPL selector with the inoperative position to NAV.
   B. Ensure the ND format appears on the associated inboard display unit.
   C. Use the EFIS Control Panel to adjust the range and modes on the ND to confirm the associated inboard display unit is properly responding to the EFIS CONTROL PANEL.
   D. On the DSP, select any format other than NAV and ensure that the associated inboard display unit remains in the ND format.
5. For verifying that the EICAS position operates normally:
   A. Position the INBOARD DSPL selector with the inoperative position to EICAS.
   B. Verify the associated side's inboard displays EICAS and the upper center display blanks.
   C. On the glareshield panel (P55), use the Display Select Panel (DSP) to select the inboard display unit associated with the inoperative INBOARD DSPL selector (L INBD or R INBD).
   D. Verify that display selections made from the DSP do not overwrite the EICAS, except ENG, FUEL and AIR displays.

OPERATIONS (O)

Note: AIMS display redundancy management will automatically provide PFD or EICAS formats to the proper display units when an associated outboard display unit failure or an upper center display unit failure is detected. Since the PFD and EICAS positions are not normally used, no alternate procedures are required when either or both positions are inoperative.

1. For an inoperative INBOARD DSPL selector in the NAV position:
   A. Select the MFD position and select the desired MFD format on the associated inboard display unit using the DSP.
2. For an inoperative INBOARD DSPL selector in the MFD position:
   A. select the NAV position and use lower center display and opposite-side inboard display units for displaying required MFD formats.

31-61-07 Electronic Checklist (ECL) System

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

May be inoperative provided:

a. Electronic checklist is deactivated and paper checklist procedures are used.

MAINTENANCE (M)

Deactivate the electronic checklist (AMM 31-00-00/901).

1. Display the Maintenance Task Maintenance page.
2. Toggle the Checklist Function ENABLE/DISABLE button to DISABLE.

OPERATIONS (O)

1. Use paper checklists.

   Note: The rectangular icon symbol that precedes some alert messages will not be displayed.

31-61-07 Electronic Checklist (ECL) System

31-61-07-01 ECL Closed Loop Switch Indications

Interval	Installed	Required	Procedure
C	–	0	**(O) (P)**

May be inoperative provided:

a. ECL line item override procedures are used when required to complete checklists.

OPERATIONS (O)

1. Use the Line Item Override (ITEM OVRD) Key as required.

31-61-08 EFIS Control Panels

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

One may be inoperative provided:

a. The associated CDU EFIS control panel backup feature is verified to operate normally.

MAINTENANCE (M)

Verify the associated (same side) CDU EFIS control backup feature operates normally (AMM 31-00-00/901).

1. Press the associated CDU Menu key.
2. Press EFIS Control Select key to ON.
3. Press the EFIS Page Select key to ON.
4. Verify the EFIS Control page is displayed.

OPERATIONS (O)

1. Use associated (same side) CDU to control the functions of the inoperative EFIS control panel.

31-61-08 EFIS Control Panels

31-61-08-01 Map Switch Lights

Interval	Installed	Required	Procedure
C	14	0	**(P)**

31-61-09 Instrument Source Switches

31-61-09-01 NAV and DSPL CTRL Switches

Interval	Installed	Required	Procedure
C	5	0	**(P)**

May be inoperative provided:

a. Associated switches are not moved in flight.

31-61-09 Instrument Source Switches

31-61-09-02 AIR DATA/ATT Switches

31-61-09-02A One Inoperative

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

One may be inoperative provided:

a. The associated switch is not moved in flight.

MAINTENANCE NOTE

1. For AIMS Input/Output Module (IOM) #4 in the left AIMS cabinet inoperative, selecting the left AIR DATA/ATT switch to the ALTN position will display failure flags on the left PFD for attitude, airspeed and altitude. For IOM #2 in the right AIMS cabinet inoperative, selecting the right AIR DATA/ATT switch to the ALTN position will display an attitude fail flag on the right PFD.

31-61-09 Instrument Source Switches

31-61-09-02 AIR DATA/ATT Switches

31-61-09-02B Both Inoperative

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

May be inoperative provided:

a. One AIR DATA/ATT switch is in the normal position.

b. Associated display units are verified to operate from selected sources.

c. Associated switches are not moved in flight.

MAINTENANCE (M)

Note: For AIMS Input/Output Module (IOM) #4 in the left AIMS cabinet inoperative, selecting the left AIR DATA/ATT switch to the ALTN position will display failure flags on the left PFD for attitude, airspeed and altitude. For IOM #2 in the right AIMS cabinet inoperative, selecting the right AIR DATA/ATT switch to the ALTN position will display an attitude fail flag on the right PFD.

Verify display units operate from selected sources (AMM 31-00-00/901).

1. Position both AIR DATA/ATT switches off (normal position - switch out).
2. Verify the ALTN ATTITUDE advisory message is not displayed.

TKA to TKF, TKK to TKR, TKU to TKZ

31-61-10 Ground Maneuver Camera System

Interval	Installed	Required	Procedure
D	1	0	**(P)**

OPERATIONS NOTE

1. Any operative portion of the camera system may be used.

31-61-11 Heading Reference (HDG REF) Switch

31-61-11-01 TRUE Function

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

May be inoperative provided:

a. Enroute procedures do not require its use.

OPERATIONS (O)

1. Operation is not allowed in routes where True North referencing is required.

31-61-11 Heading Reference (HDG REF) Switch

31-61-11-02 Switch Lights

31-61-11-02-01 TRUE Light

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

31-61-11 Heading Reference (HDG REF) Switch

31-61-11-02 Switch Lights

31-61-11-02-02 NORM Light

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

LANDING GEAR

32-00-01 Landing Gear Synoptic Display

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

OPERATIONS NOTE

1. If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) 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.

32-08-01 Proximity Sensor Electronic Unit (PSEU) Channels

32-08-01A One Inoperative

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

32-08-01 Proximity Sensor Electronic Unit (PSEU) Channels

32-08-01B Two Inoperative—PSEU 1 On Left System Bus, PSEU 2 On Right System Bus

Interval	Installed	Required	Procedure
C	4	2	**(M) (O) (P)**

One may be inoperative in each PSEU provided:

a. PSEU 1 transmission is verified on the left ARINC 629 systems bus.
b. PSEU 2 transmission is verified on the right ARINC 629 systems bus.

MAINTENANCE (M)

Verify PSEU 1 transmission is on the left ARINC 629 systems bus and PSEU 2 transmission is on the right ARINC 629 systems bus (AMM 32-00-00/901).

1. Verify PSEU 1 and PSEU 2 data is displayed on the Landing Gear ACTN/INDN maintenance page.
2. Open P110 panel PSEU 1 PRI PWR circuit breaker.
3. Verify PSEU 1 data is removed from the Landing Gear ACTN/INDN display. PSEU 1 is transmitting on the left ARINC 629 systems bus.
4. Open P310 panel PSEU 2 ALTN PWR circuit breaker.
5. Verify PSEU 2 data is removed from the Landing Gear ACTN/INDN display. PSEU 2 is transmitting on the right ARINC 629 systems bus.
6. Close the PSEU 1 PRI PWR and the PSEU 2 ALTN PWR circuit breakers.

OPERATIONS (O)

1. The autobrake selector may not automatically move from RTO to OFF after takeoff. If autobrake selector remains in RTO, manually move to OFF.

32-08-01 Proximity Sensor Electronic Unit (PSEU) Channels

32-08-01C Two Inoperative—PSEU 1 On Right System Bus, PSEU 2 On Left System Bus

Interval	Installed	Required	Procedure
C	4	2	**(M) (O) (P) (MV)**

One may be inoperative in each PSEU provided:

a. PSEU 1 transmission is verified on the right ARINC 629 systems bus.

b. PSEU 2 transmission is verified on the left ARINC 629 systems bus.

c. After takeoff, gear remains down for two minutes before retraction.

d. Takeoff performance is based on landing gear extended.

MAINTENANCE (M)

Verify that PSEU 1 transmission is on the right ARINC 629 systems bus and PSEU 2 transmission is on the left ARINC 629 systems bus (AMM 32-00-00/901).

1. Verify PSEU 1 and PSEU 2 data is displayed on the Landing Gear ACTN/INDN maintenance page.
2. Open P310 panel PSEU 1 ALTN PWR circuit breaker.
3. Verify PSEU 1 data is removed from the Landing Gear ACTN/INDN display. PSEU 1 is transmitting on the right ARINC 629 bus.
4. Open P210 panel PSEU 2 PRI PWR circuit breaker.
5. Verify PSEU 2 data is removed from the Landing Gear ACTN/INDN display. PSEU 2 is transmitting on the left ARINC 629 systems bus.
6. Close the PSEU 1 ALTN PWR and PSEU 2 PRI PWR circuit breakers.

OPERATIONS (O)

1. The autobrake selector may not automatically move from RTO to OFF after takeoff. If autobrake selector remains in RTO, manually move to OFF.
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.
3. Base takeoff performance on landing gear extended. Takeoff performance for the landing gear extended is available in FCOM Performance Dispatch (PD) chapter.
4. Increase flight planning fuel by 861 kg.

32-08-01 Proximity Sensor Electronic Unit (PSEU) Channels

32-08-01D Two Inoperative—Gear Down Dispatch

Interval	Installed	Required	Procedure
C	4	2	**(M) (O) (P) (MV)**

One may be inoperative in each PSEU provided:

a. Landing gear are secured in the down position.

b. Airplane is dispatched in accordance with Gear Down data in FCOM Performance Dispatch (PD) chapter.

c. Revenue flight is not permitted.

MAINTENANCE (M)

Secure the landing gear in the down position (AMM 32-00-00/901).

1. Install landing gear downlock pins, including installation procedure steps for airplane flight with landing gear locked in the extended position (AMM 32-00-30/201).
2. Deactivate the lever lock solenoid for the landing gear control lever by opening and collaring the P210 panel LG LEVER LOCK circuit breaker.

OPERATIONS (O)

1. The autobrake selector may not automatically move from RTO to OFF after takeoff. If autobrake selector remains in RTO, manually move to OFF.
2. Observe Landing Gear Extended limitations and operational limits.
3. Base flight plan on landing gear extended. Refer to Gear Down Dispatch data in FCOM Performance Dispatch (PD) chapter.
4. Revenue flight is not permitted.

32-09-01 Air/Ground System—Weight on Wheels

32-09-01-01 Left System

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

May be inoperative provided:

a. Associated system is deactivated.
b. Right air/ground system operates normally.
c. Right system cardfile power supply 1 operates normally.

MAINTENANCE (M)

Deactivate the left Air/Ground System (AMM 32-00-00/901).

1. Open and collar the P11 panel AIR/GND 1 circuit breaker.

   Note: The WINDSHEAR SYS advisory message and WINDSHEAR PRED status message may be displayed. The airplane must also be dispatched using MEL Item 34-43-01-01.

2. Gain access to the P85 Left System Cardfile in the Main Equipment Center.
3. Set the power switch for the L Weight on Wheels card (P85 position A16) to the OFF position.

OPERATIONS NOTE

1. If available, select the right ATC transponder.

32-09-01 Air/Ground System—Weight on Wheels

32-09-01-02 Right System

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

May be inoperative provided:

a. Associated system is deactivated.
b. Left air/ground system operates normally.
c. All galley/lavatory water supply shutoff valves are closed.

MAINTENANCE (M)

Note: The forward and aft drain mast heaters and the gray water drain line heaters default to low heat. Low heat inflight is likely to result in ice plugging drain masts or lines which can cause overflowing sinks. The left and right WOW cards are interchangeable (AMM 20-10-01/401).

Deactivate the right Air/Ground System and shutoff the water supply to the galley sinks, lavatory sinks and if installed drinking fountains (AMM 32-00-00/901).

1. Open and collar the P11 panel AIR/GND 2 and AIR/GND 3 circuit breakers.

   Note: The WINDSHEAR SYS advisory message and WINDSHEAR PRED status message may be displayed. The airplane must also be dispatched using MEL item 34-43-01-01.

2. Gain access to the P84 Right System Cardfile in the Main Equipment Center.
3. Set the power switch for the R Weight-On-Wheels card (P84 position A16) to the OFF position.
4. Close the water supply shut off valves to the galley sinks, lavatory sinks and drinking fountains (if installed).

OPERATIONS NOTE

1. If available, select the left ATC transponder.
2. Water for the galley sinks, lavatory sinks and drinking fountains (if installed) will not be available.

32-11-01 Nose Landing Gear Strut Upper Air Chamber Indicator (-300ER)

-300ER

Interval	Installed	Required	Procedure
D	1	0	**(P)**

32-30-01 Landing Gear Actuation System

Interval	Installed	Required	Procedure
B	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Inoperative components are properly secured by an accepted procedure.

b. Landing gear is secured in the down position.

c. Airplane is dispatched in accordance with Gear Down Dispatch data in Performance Dispatch (PD) chapter.

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF

Note: Revenue flight is not permitted.

MAINTENANCE (M)

Secure the landing gear in the down position (AMM 32-00-00/901).

1. Install landing gear downlock pins, including installation procedure steps for airplane flight with landing gear locked in the extended position (AMM 32-00-30/201).

TKK to TKR, TKU to TKZ

2. Place Alternate Gear Down Dispatch switch (Main Equipment Center above the lower access door) to VMO position.

   Note: The Warning Electronics System (WES) will set VMO/MMO to 270 KIAS/.73 Mach and VMO GEAR DOWN memo message will be displayed.

3. Deactivate the lever lock solenoid for the landing gear control lever by opening and collaring the P210 panel LG LEVER LOCK circuit breaker.

OPERATIONS (O)

1. Observe Landing Gear Extended limitations and operational limits.

2. Base flight plan on landing gear extended.

TKK to TKR, TKU to TKZ

3. The Warning Electronics System (WES) will set VMO/MMO to 270 KIAS/.73 Mach and VMO GEAR DOWN memo message will be displayed.

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF

Note: Revenue flight is not permitted.

32-30-02 Semi-Lever Gear (SLG) System

-300ER

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. SLG system is deactivated.

b. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate the semi-lever gear system (AMM 32-00-00/901).

1. For the SEMI LEVER GEAR or SEMI LEVER GEAR SYS status message displayed:
   A. Open and collar the P110 panel SEMI-LEVER GEAR CONTROL, LEFT circuit breaker and the P210 panel SEMI-LEVER GEAR CONTROL, RIGHT circuit breaker.
2. For the SEMI LEVER GEAR LOCK status message displayed:
   A. Open and collar the P110 panelSEMI-LEVER GEAR CONTROL, LEFT circuit breaker and the P210 panel SEMI-LEVER GEAR CONTROL, RIGHT circuit breaker.

      Note: The SEMI LEVER GEAR SYS status message will be displayed during dispatch with the LEFT and RIGHT SEMI-LEVER GEAR CONTROL circuit breakers open.

   B. Clear the airplane sufficiently to accommodate possible downward vertical motion. For a lightly loaded airplane, vertical downward motion may be as much as 2 inches at either main gear and at the tail, and as much as 6 inches at the wing tips. No vertical downward motion is expected for an airplane heavier than 226,796 kgs.
   C. Pressurize the center hydraulic system (AMM 29-11-00/201).
   D. On Landing Gear Actuation/Indication Maintenance page, confirm both SLG sensors indicate FAR.
   E. Remove power from the center hydraulic system (AMM 29-11-00/201).

OPERATIONS (O)

1. Dispatch with appropriate performance adjustments applied. Performance is available using the Boeing Takeoff Module (BTM). Contact OU for assistance.

   Note: The SEMI LEVER GEAR SYS status message will remain displayed with the L and R SLG circuit breakers open.

32-31-01 Landing Gear Lever Lock Solenoid

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

May be inoperative provided:

a. Solenoid is in the locked position.

OPERATIONS (O)

For gear retraction use the following procedure:

1. Push and hold landing gear Lever LOCK OVRD switch.
2. Position Landing Gear Lever to UP.

32-31-02 Landing Gear Selector Valve Electrical Control Circuits

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

One UP/DOWN electrical control circuit may be inoperative provided:

a. The remaining UP/DOWN circuit is verified to operate normally each flight day.

MAINTENANCE (M)

Verify that one of the electrical control circuits operates normally each flight day (AMM 32-00-00/901).

Note: During this test the GEAR DOOR advisory and GEAR DISAGREE caution messages may be displayed. These messages will not be displayed when this test is completed.

1. Install the landing gear downlock pins (AMM 32-00-30/201).
2. Ensure the landing gear lever is in the DN position.
3. Supply electrical power (AMM 24-22-00/201).
4. Ensure the following circuit breakers are closed:

   Note: If the circuit breaker cannot be closed, disconnect, cap and stow the electrical connector on the affected selector/bypass valve.

   – P11 panel LDG GEAR EXTD/RETR 1
   – P11 panel LDG GEAR EXTD/RETR 2.
5. Pressurize the center hydraulic system (AMM 29-11-00/201).
6. Ensure the downlock pins are installed in all the landing gear before moving the control lever.
7. Push and hold the landing gear lever LOCK OVRD switch and simultaneously move the landing gear control lever to UP.
8. Ensure all landing gear doors open
9. Move the landing gear lever to DN.
10. Ensure all landing gear doors close.
11. Remove power from the center hydraulic system (AMM 29-11-00/201).
12. Remove the landing gear downlock pins (AMM 32-00-30/201).

OPERATIONS NOTE

1. False TOO LOW GEAR aural alerts may occur. Confirm landing gear configuration. The aural caution may be inhibited by positioning the Ground Proximity Gear Override switch to OVRD.

32-32-01 Main Gear Door Uplock Spring Assemblies

Interval	Installed	Required	Procedure
B	4	2	**(M) (O) (P)**

One spring on each door uplock mechanism may be missing and gear retraction allowed provided:

a. 270 KIAS/.82 Mach is not exceeded during flight.

MAINTENANCE (M)

1. Remove any pieces of broken spring (AMM 32-00-00/901).

OPERATIONS (O)

1. Observe the landing gear EXTEND placard (270K - .82M) speed limit during all phases of flight.

32-32-01 Main Gear Door Uplock Spring Assemblies

32-32-01-01 Spring Retention Cords

Interval	Installed	Required	Procedure
C	4	0	**(P)**

32-32-02 Main Gear Uplock Springs

Interval	Installed	Required	Procedure
B	4	3	**(M) (O) (P)**

One spring on one main gear uplock mechanism may be missing and gear retraction allowed provided:

a. 270 KIAS/.82 Mach is not exceeded during flight.

MAINTENANCE (M)

1. Remove any pieces of broken spring (AMM 32-00-00/901).

OPERATIONS (O)

1. Observe the landing gear EXTEND placard (270K - .82M) speed limit during all phases of flight.

32-32-03 Main Gear Side Brace Springs

TJA,B

Interval	Installed	Required	Procedure
B	4	3	**(M) (O) (P)**

One main gear side brace spring may be missing provided:

a. Airspeed is limited to 250 knots when extending landing gear using alternate gear extend system.

Note: This MEL item is applicable to airplanes with side brace downlock actuator Boeing part number 293W3152-1 installed.

MAINTENANCE (M)

1. For coil type springs, remove the broken spring using one of the following two methods:
   A. Remove broken spring. Cut the end fittings on each end of the spring in the necked down area, leaving the remaining portion of the end fitting to act as a spacer on the shaft.
   B. Remove broken spring per AMM 32-32-06/401 and install suitable spacers (BACB28Z10-065 or equivalent) on shafts.
2. For cartridge style springs:
   A. Remove broken spring per AMM 32-32-06/401 and install suitable spacers (BACB28Z10-065 or equivalent) on shafts.

OPERATIONS (O)

1. When using the alternate landing gear extension system, observe the speed limit of 250 KIAS.

32-35-01 Landing Gear Alternate Extend System

Interval	Installed	Required	Procedure
B	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Landing gear are secured in the down position.

b. Alternate extend system is deactivated.

c. Airplane is dispatched in accordance with the Gear Down Dispatch data in Performance Dispatch (PD) chapter.

d. Revenue flight is not permitted.

MAINTENANCE (M)

Deactivate alternate extend system and secure the landing gear in the down position (AMM 32-00-00/901).

1. Install landing gear downlock pins, including installation procedure steps for airplane flight with landing gear locked in the extended position (AMM 32-00-30/201).
2. Open and collar the following P11 panel circuit breakers to deactivate the alternate extend system:
   - LDG GEAR ALTN EXT MOTOR
   - LDG GEAR ALTN EXT CTRL.
3. Deactivate the lever lock solenoid for the landing gear control lever by opening and collaring the P210 panel LG LEVER LOCK circuit breaker.

OPERATIONS (O)

1. Observe Landing Gear Extended limitations and operational limits.
2. Base flight plan on landing gear extended.
3. Revenue flight is not permitted.

32-35-01 Landing Gear Alternate Extend System

32-35-01-01 Alternate Extend Hydraulic Pressure Switch

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

May be inoperative open provided:

a. Landing gear doors are verified to open using the alternate extend system.

MAINTENANCE (M)

Verify the landing gear doors open using the alternate extend system (AMM 32-00-00/901).

1. Install landing gear downlock pins (AMM 32-00-30/201).
2. Make sure the following P11 panel circuit breakers are closed:
   – LDG GEAR ALTN EXT MOTOR
   – LDG GEAR ALTN EXT CTRL.
3. On the flight deck, use the Glareshield panel (P55) Display Select Panel (DSP) to select the Landing Gear (GEAR) synoptic on to a Multi-Function Display (MFD).
4. Position Landing Gear Panel (P2-2) Alternate Gear (ALTN GEAR) switch DOWN and hold (maximum 45 seconds) until all landing gear doors are open, indicated by in-transit (three cross-hatched boxes) on the GEAR synoptic.

   Note: GEAR DOOR advisory message will be displayed.
5. Close the landing gear doors (AMM 32-00-40/201).

   Note: The Ground Door Release function which closes the landing gear doors must be operative.
6. Remove landing gear downlock pins when maintenance activities are complete (AMM 32-00-30/201).

   Note: For maintenance ground operations, the landing gear doors must be opened by placing the ALTN GEAR switch DOWN and holding (45 seconds maximum) until all gear doors are open, indicated by in-transit (three cross-hatched boxes) on the GEAR synoptic.

OPERATIONS NOTE

1. For Non-Normal Checklists that use the alternate gear extend system, the gear should indicate in-transit within approximately 16 seconds.

32-35-02 Ground Door Release Control System

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

May be inoperative provided:

a. Both door open control switches are verified to be open.

b. Landing gear doors are verified to open using the alternate extend system.

c. Landing gear doors are closed before each departure.

MAINTENANCE (M)

Verify both door open control switches are open (not inoperative closed) and the landing gear doors will open using the alternate extend switch on the flight deck (AMM 32-00-00/901).

1. Make sure the following P11 panel circuit breakers are closed:
   – LDG GEAR ALTN EXT MOTOR
   – LDG GEAR ALTN EXT CTRL.
2. Install landing gear downlock pins (AMM 32-00-30/201).
3. Verify both door open control switches are open (not inoperative closed).
   A. Ensure the Main Wheel Well Electric Service Panel (P56) Arm Doors switch and All Doors Open/Main Landing Gear Doors Close switches are positioned OFF.
   B. Position Arm Doors switch ARM DOORS and hold. Wait 5 seconds, and then release the switch and ensure it returns to OFF.
   C. Visually ensure none of the gear doors open.

      Note: If the gear doors open, a door open control switch is inoperative closed. The airplane may be dispatched using MEL Item 32-35-02-01.

   D. Position All Doors Open/Main Landing Gear Doors Close switch ALL DOORS OPEN and hold. Wait 5 seconds, and then release the switch and ensure it returns to OFF.
   E. Visually ensure none of the gear doors open.

      Note: If the gear doors open, a door open control switch is inoperative closed. The airplane may be dispatched using MEL Item 32-35-02-01.
4. Verify the nose and main landing gear doors open using the alternate extend system.

A. Use Glareshield panel (P55) Display Select Panel (DSP) to select the Landing Gear (GEAR) synoptic on to a Multi-Function Display (MFD).

B. Momentarily position Landing Gear Panel (P2-2) ALTN GEAR switch DOWN. All landing gear doors should open, indicated by in-transit (three cross-hatched boxes) on the GEAR synoptic.

Note: If landing gear doors do not open, the airplane may be dispatched using MEL Item 32-35-01.

C. Close the landing gear doors (AMM 32-00-40/201).

Note: The Ground Door Release function which closes the landing gear doors must be operative.

D. Remove landing gear downlock pins when all maintenance activities are complete (AMM 32-00-30/201).

32-35-02 Ground Door Release Control System

32-35-02-01 Door Open Control Switches

Interval	Installed	Required	Procedure
B	2	0	**(M) (O) (P) (MV)**

May be inoperative closed provided:

a. Landing gear are secured in the down position.

b. Landing gear alternate extend system is deactivated.

c. Airplane is dispatched in accordance with the Gear Down Dispatch data in Performance Dispatch (PD) chapter.

d. Revenue flight is not permitted.

MAINTENANCE (M)

Deactivate the gear alternate extend system and secure the landing gear down (AMM 32-00-00/901).

1. Install landing gear downlock pins, including installation procedure steps for airplane flight with landing gear locked in the extended position (AMM 32-00-30/201).
2. Open and collar the following P11 panel circuit breakers to deactivate the alternate extend system:
   – LDG GEAR ALTN EXT MOTOR
   – LDG GEAR ALTN EXT CTRL.
3. Deactivate the lever lock solenoid for the landing gear control lever by opening and collaring the P210 panel LG LEVER LOCK circuit breaker.

OPERATIONS (O)

1. Observe Landing Gear Extended limitations and operational limits.
2. Base flight plan on landing gear extended.
3. Revenue flight is not permitted.

32-41-01 Brake Accumulator Pressure Indicator (Wheel Well)

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Flight deck brake accumulator pressure indicator operates normally.

32-41-02 Brake Accumulator Pressure Indicator (Flight Deck)

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

May be inoperative provided:

a. Brake accumulator charge is verified normal once each flight day.

MAINTENANCE (M)

1. Verify brake accumulator precharge pressure once each flight day (AMM 12-15-04/301) .

32-41-03 BRAKE SOURCE Indication System

Interval	Installed	Required	Procedure
A	1	0	**(M) (O) (P)**

May be inoperative provided:

a. Flight deck brake accumulator pressure indicator operates normally.
b. Normal and alternate brake systems are verified to operate normally.
c. Brake accumulator isolation valve is verified to operate normally.
d. Repairs are made within three flight days.

MAINTENANCE (M)

Verify normal and alternate brake systems, and brake accumulator isolation valve operate normally (AMM 32-00-00/901) .

1. During towing and taxi operations:
   A. Monitor the brake accumulator pressure indicator.
   B. If the brake accumulator pressure is less than 2800 psi for longer than three seconds, discontinue operations.
2. Verify normal and alternate brake systems, and brake accumulator isolation valve operate normally.
   A. Install the landing gear door safety pins (AMM 32-00-15/201).
   B. Install the nose and main landing gear downlock pins (AMM 32-00-30/201).
   C. Supply electrical power on the airplane (AMM 24-22-00/201).
   D. Pressurize the right and center hydraulic systems (AMM 29-11-00/201).
   E. Ensure the brake accumulator pressure is between 2,800 and 3,000 psi.

      Note: Brake accumulator pressure is available on two different gages, either of which may be used. One gage is in the right main landing gear wheel well below the brake accumulator. The other gage is on the flight deck on the main instrument panel (P1) labeled BRAKE ACCUM.

   F. Quickly apply the captain's brake pedals full down. There should be a momentary decrease in brake accumulator pressure.
   G. Release the captain's brake pedals.
   H. Fully push and hold the captain's brake pedals.

      Note: The parking brake can be set to hold the pedals.

I. Examine each brake's pistons to make sure that all brakes operated.

J. On Landing Gear Brakes/Steering Maintenance page:

1) Confirm left and right BRAKE METERED PRESS for the NORMAL brake hydraulic system is approximately 3,000 psi

K. Release the captain's brake pedals (or parking brake).

L. Examine each brake's pistons to make sure that all brakes are released.

M. Remove power and depressurize the right hydraulic system (AMM 29-11-00/201).

1) Position Hydraulic Panel (P5) right system hydraulic pumps off.

2) Position Overhead Maintenance Panel (P61) C TAIL FLT CONTROL HYD POWER switch SHUTOFF.

3) Position Overhead Maintenance Panel (P61) R TAIL FLT CONTROL HYD POWER switch NORM.

4) Operate the pitch trim with the alternate pitch trim lever to decrease the pressure in the right hydraulic system to zero.

N. Ensure the brake accumulator pressure is between 2,800 and 3,000 psi.

O. Quickly apply the captain's brake pedals full down. There should be no momentary decrease in brake accumulator pressure.

Note: Steady pressure when the captain's brakes are applied indicates the accumulator isolation valve is in the secondary position, which isolates the accumulator.

P. Release the captain's brake pedals.

Q. Fully push and hold the captain's brake pedals.

Note: The parking brake can be set to hold the pedals.

R. Examine each brake's pistons to make sure that all brakes operated.

S. On Landing Gear Brake/Steering Maintenance page:

1) Confirm left and right BRAKE METERED PRESS for the ALTN brake hydraulic system is approximately 3,000 psi.

T. Release the captain's brake pedals (or parking brake).

U. Examine each brake's pistons to make sure that all brakes are released.

V. Remove power from the center hydraulic system (AMM 29-11-00/201).

W. Position Overhead Maintenance Panel (P61) C TAIL FLT CONTROL HYD POWER switch NORM.

X. Remove the nose and main landing gear downlock pins (AMM 32-00-30/201).

Y. Remove the landing gear door safety pins (AMM 32-00-15/201).

OPERATIONS (O)

1. During taxi and landing operations:
   A. Monitor the brake accumulator pressure indicator.
2. If the brake accumulator pressure is less than 2800 psi for longer than three seconds:
   A. Accomplish the BRAKE SOURCE Non-Normal Checklist.

32-41-03 BRAKE SOURCE Indication System

32-41-03-01 BRAKE SOURCE Light

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

May be inoperative provided:

a. The BRAKE SOURCE alerting message operates normally.

MAINTENANCE NOTE

1. The BRAKE SOURCE advisory message will not operate for towing operations conducted without AC electrical power applied to the airplane.

32-42-01 Normal Antiskid Valves

32-42-01A Deactivation Tool Used

Interval	Installed	Required	Procedure
C	12	10	**(M) (O) (P) (MV)**

One valve per each six wheel truck may be inoperative provided:

a. Associated brake is deactivated using the deactivation assembly.

b. Performance decrements for brake(s) deactivated are applied.

MAINTENANCE (M)

1. Deactivate the brake associated with inoperative antiskid valve using MEL Item 32-45-01A (M) procedures.

OPERATIONS (O)

1. Dispatch with takeoff and landing performance based on one or two brakes deactivated.

32-42-01 Normal Antiskid Valves

32-42-01B Brake Line Capped

Interval	Installed	Required	Procedure
C	12	10	**(M) (O) (P) (MV)**

One valve per each six wheel truck may be inoperative provided:

a. Associated brake is deactivated by capping the brake line.

b. After takeoff, gear remains down for two minutes before retraction.

c. Performance decrements for brake(s) deactivated are applied.

d. Takeoff performance is based on landing gear extended.

MAINTENANCE (M)

1. Deactivate the brake associated with inoperative antiskid valve using MEL Item 32-45-01B (M) procedures.

OPERATIONS (O)

1. After takeoff:

   A. Leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.

2. Base takeoff performance on landing gear extended. Takeoff performance for the landing gear extended is available using Gear Down Dispatch data in Performance Dispatch (PD) chapter.
3. Dispatch with takeoff and landing performance also based on one or two brakes deactivated.
4. Increase flight planning fuel by 861 kg.

32-42-02 Antiskid Wheelspeed Transducers

Interval	Installed	Required	Procedure
C	12	10	**(O) (P) (MV)**

One transducer per each six wheel truck may be inoperative provided:

a. Performance decrements for brake(s) deactivated are applied.

b. No other brakes are deactivated on that truck.

MAINTENANCE NOTE

1. Brakes associated with inoperative transducers are not required to be deactivated.

OPERATIONS (O)

1. Dispatch with takeoff and landing performance based on one or two brakes deactivated.

32-42-03 Alternate Antiskid Valves

Interval	Installed	Required	Procedure
C	8	0	**(M) (P)**

May be inoperative provided:

a. Manual braking capability on the alternate brake system is verified to operate normally.

MAINTENANCE (M)

Verify that pedal braking capability operates normally (AMM 32-00-00/901) .

1. Pressurize the center hydraulic system (AMM 29-11-00/201).
2. Remove power on the right hydraulic system (AMM 29-11-00/201).
3. Depress and release the brake pedals. Observe brake piston movement on each brake to check that brakes apply and release.
4. Make sure that all 12 brakes are set.
5. Release the brake pedals.
6. Remove power on the center hydraulic system (AMM 29-11-00/201).

32-42-04 Autobrake System (Including Autobrakes Solenoid Valve)

32-42-04A Solenoid Verified Closed

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

May be inoperative provided:

a. Autobrake solenoid valve is verified closed.

b. Autobrake selector remains in the OFF position.

MAINTENANCE (M)

Verify that the autobrake solenoid valve is closed and for Brake System Control Unit II (BSCU II) installed, check the program pin configuration (AMM 32-00-00/901) .

1. Supply electrical power (AMM 24-22-00/201).
2. Chock the wheels.
3. Release the parking brake.
4. Place the autobrake selector to the OFF position.
5. Pressurize the right hydraulic system (AMM 29-11-00/201).
6. For AUTOBRAKE SOL VALVE status message not displayed:
   A. The autobrake solenoid valve is closed.
7. For AUTOBRAKE SOL VALVE status message displayed:
   A. Perform the following:
      1) Remove power on the right and center hydraulic systems (AMM 29-11-00/201).
      2) Fully push the brake pedals 12 times to remove pressure from brake accumulator.
      3) Confirm AUTOBRAKE SOL VALVE status message remains displayed (autobrake solenoid valve is closed).
8. For a BSCU II (P/N S294W401-series) installed:
   A. Use the Antiskid/Autobrake Control System configuration page of the MAT to confirm the pin program configuration of the BSCU primary and secondary channel.

      Note: The presence of maintenance message 32-30701 or 32-30702, indicates that the BSCU pin programming selection may be faulted.

1) Confirm pin program configuration is 0001. -300ER

2) Confirm pin program configuration is 0000. -200,-200ER, -300

32-42-04 Autobrake System (Including Autobrakes Solenoid Valve)

32-42-04B Control Module Deactivated

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

May be inoperative provided:

a. Autobrake hydraulic control module is deactivated.

b. Autobrake selector remains in the OFF position.

MAINTENANCE (M)

Deactivate the autobrake hydraulic control module and for Brake System Control Unit II (BSCU II) installed, check the program pin configuration (AMM 32-00-00/901) .

1. Remove Autobrake Valve Module (AMM 32-42-09/401). The autobrake valve module is installed in the right hand wheel well on the forward end of the center panel.
2. Cap and stow the electrical connectors (DM32018).
3. Plug and stow the hydraulic tubes. Use two high pressure steel plugs for the hydraulic pressure tubes (MS21913J10, AS5231J10, BACP20AU10J or equivalent) and an aluminum plug for the return tube (MS21913W8, AS5231W08, BACP20AU8D or equivalent).
4. Pressurize the right hydraulic system and check for leaks (AMM 29-11-00/201).
5. Remove power from the right hydraulic system (AMM 29-11-00/201).
6. For a BSCU II (P/N S294W401-series) installed:

   A. Use the Antiskid/Autobrake Control System configuration page of the MATto confirm the pin program configuration of the BSCU primary and secondary channel.

      Note: The presence of maintenance message 32-30701 or 32-30702, indicates that the BSCU pin programming selection may be faulted.

      1) Confirm pin program configuration is 0001. -300ER

      2) Confirm pin program configuration is 0000. -200,-200ER, -300

32-44-01 Brake Status Lights (On Nose Gear)

32-44-01A Required By Procedures

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

MAINTENANCE (M)

1. Use flight interphone for communications with flight crew to verify the status of the brakes.

OPERATIONS (O)

1. Use flight interphone for communications with ground crew to verify the status of the brakes.

32-44-01 Brake Status Lights (On Nose Gear)

32-44-01B Pocedures Do Not Require Use

Interval	Installed	Required	Procedure
D	3	0	**(P)**

May be inoperative provided:

a. Procedures do not require their use.

32-44-02 Gear Retraction Braking System

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

May be inoperative provided:

a. After takeoff, gear remains down for two minutes before retraction.

b. Takeoff performance is based on landing gear extended.

OPERATIONS (O)

1. After takeoff:
   A. Leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.
2. Base takeoff performance on landing gear extended. Takeoff performance for the landing gear extended is available using Gear Down Dispatch data in Performance Dispatch (PD) chapter.
3. Increase flight planning fuel by 861 kg.

32-44-03 Parking Brake Set Indication System (Flight Deck)

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

May be inoperative provided:

a. Parking brake valve is verified to operate normally once each flight day.

b. Parking brake and brake antiskid interface indication is verified to operate normally once each flight day.

c. Parking brake takeoff configuration warning system is verified to operate normally.

MAINTENANCE (M)

Note: This MEL item is for PARKING BRAKE SET memo message not displayed when the parking brake lever is set.

Verify the parking brake takeoff configuration warning operates normally and verify once each flight day the parking brake valve, the parking brake and the brake antiskid interface indication operate normally (AMM 32-00-00/901) .

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Install chocks around the tires.
3. Install downlock pins in the nose and main landing gear (AMM 32-00-30/201).
4. Pressurize the right hydraulic system (AMM 29-11-00/201).
5. Release the parking brake.
6. For verifying the parking brake valve operates normally once each flight day:
   A. Gain access to parking brake valve by opening the right inboard fixed trailing edge panel 651DB. The parking brake valve is on the right main landing gear trunnion, outboard and aft of the normal antiskid shuttle valve module.
   B. Verify that the parking brake valve manual override lever indicates the valve is open.
   C. Set the parking brake.
   D. Verify the parking brake valve manual override lever indicates the valve is fully closed.
   E. Close the right inboard fixed trailing edge panel 651DB.
7. For verifying the parking brake and brake antiskid interface indication operates normally once each flight day:
   A. Open P11 panel LDG GEAR PARKING BRAKE VALVE circuit breaker.

B. Release the parking brake.

C. Verify the ANTISKID advisory message is displayed.

D. Close P11 panel LDG GEAR PARKING BRAKE VALVE circuit breaker.

E. Verify the ANTISKID advisory message is not displayed.

8. For verifying the parking brake takeoff configuration warning system operates normally:

   A. Set the parking brake.

   B. Perform the Warning Electronic System (WES) Takeoff Configuration Test (AMM 31-51-00/501).

   C. During the test, verify the CONFIG PARKING BRAKE warning message is displayed, the master warning light illuminates and the siren sounds.

   D. Release the parking brake.

   E. Perform the Warning Electronic System (WES) Takeoff Configuration Test (AMM 32-51-00/501).

   F. During the test, verify the CONFIG PARKING BRAKE warning message is not displayed.

   G. Ensure that when the test is completed that PASSED shows adjacent to TEST CONDITION.

9. Remove power from the right hydraulic system (AMM 29-11-00/201).

10. Remove downlock pins in the nose and main landing gear (AMM 32-00-30/201).

OPERATIONS (O)

1. Use communication with ground crew to verify the status of the parking brake by brake status lights on the nose gear.

2. Maintain awareness of external cues during taxi operations when relying on the parking brake.

32-45-01 Wheel Brakes

32-45-01A Deactivation Tool Used

Interval	Installed	Required	Procedure
C	12	10	**(M) (O) (P) (MV)**

One per each six wheel truck may be inoperative provided:

a. Associated brake is deactivated with a deactivation assembly.

b. Performance decrements for brakes deactivated are applied.

MAINTENANCE (M)

Deactivate associated brake using the Deactivation Assembly (AMM 32-00-00/901) .

1. Supply electrical power (AMM 24-22-00/201).
2. Install landing gear downlock pins (AMM 32-00-30/201).
3. Remove power on the right and center hydraulic systems (AMM 29-11-00/201).
4. Install chocks around the tires.
5. Release the parking brake.
6. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.
7. Use the MAT to disable the ANTISKID advisory message for the associated brake.

   Note: The ANTISKID advisory message may reappear if airplane power is cycled or if power to AIMS is cycled. If this happens, repeat the deactivation procedure on the MAT.
8. Remove the brake deactivation assembly from its location on the Antiskid Shuttle Valve Module. The assembly is referred to as the Flight Dispatch Disconnect (specification number S294W121-51) vendor part number 80389.
9. Remove the cover from the applicable shuttle valve and install the deactivation assembly in place of the valve cover.
10. Pressurize the right hydraulic system (AMM 29-11-00/201).
11. Fully press the brake pedals. Make sure the applicable brake does not operate by observing brake piston movement.
12. Remove power from the right hydraulic system (AMM 29-11-00/201).
13. Remove landing gear downlock pins when maintenance and servicing actions are complete (AMM 32-00-30/201).

OPERATIONS (O)

1. Dispatch with takeoff and landing performance based on one or two brakes deactivated.

32-45-01 Wheel Brakes

32-45-01B Brake Line Capped

Interval	Installed	Required	Procedure
C	12	10	**(M) (O) (P) (MV)**

One per each six wheel truck may be inoperative provided:

a. Associated brake is deactivated by capping the brake line.
b. After takeoff, gear remains down for two minutes before retraction.
c. Performance decrements for brakes deactivated are applied.
d. Takeoff performance is based on landing gear extended.

MAINTENANCE (M)

Deactivate inoperative brake by capping the associated brake line (AMM 32-00-00/901) .

1. Supply electrical power (AMM 24-22-00/201).
2. Install landing gear downlock pins (AMM 32-00-30/201).
3. Remove power on the right and center hydraulic systems (AMM 29-11-00/201).
4. Install chocks around the tires.
5. Release the parking brake.
6. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.
7. Use the MAT to disable the ANTISKID advisory message for the associated brake.

   Note: The ANTISKID advisory message may reappear if airplane power is cycled or if power to AIMS is cycled. If this happens, repeat the deactivation procedure on the MAT.

8. Uncouple the Brake Disconnect - Brake Hose Half and attach the hose to the landing gear truck using P/N BACS38K3D.

   Notes: 1. The part of the Brake Disconnect that is attached to the hose is called the Brake Disconnect - Brake Hose Half. The part of the Brake Disconnect that is attached to the brake is called the Brake Disconnect - Coupling.

2. The brake lines are self sealing, thus disconnecting the brake line and stowing represents capping.

9. Pressurize the right hydraulic system (AMM 29-11-00/201).
10. Apply brake pressure and check for leaks.
11. Make sure the applicable brake does not operate by observing brake piston movement.
12. Remove power from the right hydraulic system (AMM 29-11-00/201).
13. Remove landing gear downlock pins when maintenance and servicing actions are complete (AMM 32-00-30/201).

OPERATIONS (O)

1. After takeoff
   A. Leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.
2. Base takeoff performance on landing gear extended. Takeoff performance for the landing gear extended is available using Gear Down Dispatch data in Performance Dispatch (PD) chapter.
3. Dispatch with takeoff and landing performance also based on one or two brakes deactivated.
4. Increase flight planning fuel by 861 kg.

32-45-01 Wheel Brakes

32-45-01C Center Axle Brake Removed

Interval	Installed	Required	Procedure
C	12	10	**(M) (O) (P) (MV)**

One per each six wheel truck may be removed from the center axle only provided:

a. Associated brake line is capped.
b. After takeoff, gear remains down for two minutes before retraction.
c. Performance decrements for brakes deactivated are applied.
d. Takeoff performance is based on landing gear extended.

MAINTENANCE (M)

Remove inoperative brake and cap the associated brake line (AMM 32-00-00/901) .

1. Use the MAT to disable the ANTISKID advisory message for the associated brake.

   Note: The ANTISKID advisory message may reappear if airplane power is cycled or if power to AIMS is cycled. If this happens, repeat the deactivation procedure on the MAT.

2. Remove the applicable brake (AMM 32-45-07/401).
3. Attach the brake hose to the gear truck. This will ensure that the hose will not interfere with brake rotation when the gear is retracted.
4. Cap and stow the electrical wiring for the brake temperature sensor.

   Note: Ensure the brake sleeve is installed on the axle before the tire and wheel assembly are installed.

5. Install the tire and wheel assembly (AMM 32-45-01/401).
6. Pressurize the right hydraulic system (AMM 29-11-00/201).
7. Apply brake pressure and check for leaks.
8. Remove power from the right hydraulic system (AMM 29-11-00/201).
9. Remove landing gear downlock pins when maintenance and servicing actions are complete (AMM 32-00-30/201).

OPERATIONS (O)

1. After takeoff:
   A. Leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.
2. Base takeoff performance on landing gear extended. Takeoff performance for the landing gear extended is available using Gear Down Dispatch data in Performance Dispatch (PD) chapter.
3. Dispatch with takeoff and landing performance also based on one or two brakes deactivated.
4. Increase flight planning fuel by 861 kg.

32-45-02 Wheel Tie Bolts

Interval	Installed	Required	Procedure
A	–	–	**(M) (P)**

One per wheel may be broken or missing provided:

a. Affected wheel is removed, checked for broken parts or damage, and replaced if broken parts or damage is found.

b. Associated brake is checked for broken parts or damage, and is replaced or deactivated if broken parts or damage is found.

c. After each landing, wheel is inspected for additional broken or missing tie bolts.

d. Operations are limited to five departures before repairs are made.

MAINTENANCE (M)

Remove the wheel and tire assembly, and inspect the wheel and brake assemblies for broken parts or damage. Inspect the wheel after each landing and replace the affected wheel after five departures (AMM 32-00-00/901).

1. On the main landing gear, deflate affected wheel to 40 psig or less. A defective wheel and tire can burst if the tire is not deflated before removal of the assembly (AMM 32-45-01/401).
2. On main landing gear, remove each wheel with a broken, loose or missing tiebolt (AMM 32-45-01/401).
3. Inspect the wheel for broken or missing parts or damage. On nose landing gear wheels, use a mirror to fully view the inboard side of the wheel (AMM 32-45-03/601).
4. If other bolts are broken:
   A. Loose or missing, or if other areas of the wheel have been damaged, the affected wheel is to be replaced.
5. On main landing gear, inspect the brake for broken or missing parts or damage (AMM 32-45-07/601).
6. On main landing gear re-install the affected wheel (AMM 32-45-01/401).
7. Inflate tire to correct pressure (AMM 12-15-03/301).

   Note: Do not move the airplane while the tire is deflated. If the airplane is moved, the deflated tire and associated wheel, and the wheel and tire on the opposite side of the axle must be replaced.

8. After each landing (up to 5 maximum):

A. Inspect remaining tiebolts on the affected wheel (wheel removal not required) to ensure no other bolts are broken, loose or missing (AMM 32-45-03/601).

9. Replace the affected wheel after a maximum of 5 subsequent landings.

32-45-04 Nose Gear Spin Brake

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

May be inoperative or missin provided:

a. After takeoff, gear remains down for two minutes before retraction.

Note: In the event of engine failure after V1, retract landing gear after takeoff.

OPERATIONS (O)

Note: It is not necessary to apply landing gear extended takeoff performance adjustments.

1. Increase flight planning fuel by 861 kg.
2. After takeoff, leave the landing gear extended for a minimum of two minutes prior to gear retraction.
3. In case of engine failure after V1, landing gear should be retracted after takeoff.

32-46-01 Brake Temperature Indication System

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

May be inoperative provided:

a. Maximum Quick Turnaround Weight limitations are observed.

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

OPERATIONS (O)

1. Observe Maximum Quick Turnaround Weight limitation in Performance Dispatch (PD) chapter.

32-49-01 Tire Pressure Indication System (TPIS)

32-49-01A Required By Procedure

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

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

MAINTENANCE (M)

1. Use an alternate means to measure tire pressure (AMM 12-15-03/301).
2. If desired, Tire Pressure Indication System may be deactivated by opening and collaring P110 panel LG TIRE PRESSURE INDICATOR circuit breaker.
3. If desired, the tire pressure indication channel for the affected wheel may be deactivated when a wheel with incompatible tire pressure indication hardware is installed. For wheels with compatible hardware no action is suggested.
   A. For the Messier-Bugatti shipside system without sensor holder installed in the wheel:
      1) Remove the tire pressure sensor (AMM 32-49-03/000-801) .
      2) Reinstall hubcap (AMM 32-45-08/420-801).
   B. For the Crane shipside system without integral tire fill valve/tire pressure sensor installed in the wheel:
      1) Remove hubcap with integral relay transformer (AMM 32-45-08/020-801).
      2) For main wheel:
         a. Install TPIS Deactivation hubcap to restore antiskid wheel speed drive function (AMM 32-45-08/420-801).

-300ER
i) Use Boeing P/N 294W5140-17, or -19.

-200,-200ER, -300
ii) Use Boeing P/N 294W5140-16, or -18.

32-53-01 Main Gear Steering System (Including Indication)

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

May be inoperative provided:

a. Main gear steering actuators are verified locked in the center position.

b. Main gear steering system is deactivated.

MAINTENANCE (M)

Verify that both main gear steering actuators are locked in the center position and deactivate the main gear steering system (AMM 32-00-00/901) .

1. Verify left and right main gear steering Power Control Actuators (PCA) are locked in the centered position.
   A. Look through the lock indication window on each PCA and if you cannot see the metal pin on the PCA, the PCA is locked.
   B. If you can see the metal pin on either PCA, it is not locked. Use the Push Back method (preferred) or the Check Valve Bleeding method to move the unlocked PCA into the locked position.
      1) Push Back Method:
         a. Connect a tow vehicle to the nose landing gear or forward tow fitting on the affected main landing gear (AMM 09-11-00/201).
         b. Move the towing lever, on the forward side of the nose landing gear, to the TOW position.
         c. Release the parking brake.
         d. Move the manual shutoff valve handle on the unlocked PCA to the OFF position to isolate the PCA.
         e. Remove all chocks from around the nose landing gear tires and the main landing gear tires.
         f. Put a chock behind the aft axle tire that is nearest the unlocked PCA (wheel #10 on the left gear, wheel #12 on the right gear).

            Note: Do not put a chock behind the other aft axle tire (wheel #9 on the left gear, wheel #11 on the right gear).

         g. Use the tow vehicle to slowly push the airplane rearwards onto the chock. Stop airplane movement if the airplane tire moves onto the chock, the PCA locks, or the chock moves.

h. Look through the lock indication window on the PCA and if you can not see the metal pin on a PCA, the PCA is locked.

i. If a PCA remains unlocked, place a chock behind the aft axle tire that is farthest from the unlocked PCA, but on the same truck (wheel #9 on the left gear, wheel #11 on the right gear).

Note: Do not place a chock behind the other aft axle tire (wheel #10 on the left gear, wheel #12 on the right gear).

j. Use the tow vehicle to slowly push the airplane rearwards onto the chock. Stop airplane movement if the airplane tire moves onto the chock, the PCA locks, or the chock moves.

k. Look through the lock indication window on the PCA and if you can not see the metal pin on the PCA, the PCA is locked.

2) Check Valve Bleeding Method:

Note: This method loosens the check valve on the unlocked PCA. If you do this, you may void the warranty with the supplier Parker/Abex/NWL. It is recommended that this method be used only after you have tried the Push Back Method. Use caution. The hydraulic fluid trapped in the PCA is under pressure, even when the center hydraulic system is depressurized.

a. Make sure the parking brake is set.

b. Lift the aft axle of the main landing gear with the unlocked PCA until the aft tires do not touch the ground (AMM 07-11-03/201).

Note: Make sure you use the jack pad that is part of the pivot pin for the aft axle.

c. Depressurize the center hydraulic system including the reservoir (AMM 29-11-00/201).

d. Move the manual shutoff valve handle on the unlocked PCA to the OFF position to isolate the PCA.

e. Use cleaner, TEC 86-2 (or equivalent) to clean the area around the check valve (anti-cavitation check valve) on the unlocked PCA.

f. Remove the sealant and the lockwire from the check valve on the unlocked PCA.

g. Put a rag around the unlocked PCA valve to catch the leak of fluid from the valve.

h. Slowly turn the check valve 1 to 2 turns counter-clockwise until hydraulic fluid starts to leak from under the head of the check valve.

Note: Do not remove the check valve from the PCA.

i. Wait until the hydraulic fluid does not leak from under the check valve.

j. Push on the right aft tire (wheel #10 on the left gear, wheel #12 on the right gear) in the forward direction to apply a compressive force on the unlocked PCA. You can use a lever between tires #5 and #9 on the left gear and #7 and #11 on the right gear to help apply the force on the PCA.

Note: It may be necessary to apply the force for 30 to 60 seconds. Hydraulic fluid may leak from under the head of the check valve when you apply the force.

k. Look through the lock indication window on the PCA and if you can not see the metal pin on the PCA, the PCA is locked.

l. If the PCA is not locked, wait approximately 5 minutes and then reapply the force.

m. Look through the lock indication window on the PCA and if you can not see the metal pin on the PCA, the PCA is locked.

n. Tighten the check valve to 175-200 pound-inches.

o. Move the manual shutoff valve handle on the PCA to the STEER position to activate the PCA.

p. Pressurize the center hydraulic system (AMM 29-11-00/201).

q. Ensure there is no hydraulic leakage from under the head of the check valve. If the check valve leaks, replace the seals on the check valve.

r. Lower the aft axle and remove the jack.

s. Install lockwire on the check valve.

t. Apply sealant, MIL-A-46146 around the interface between the check valve and the PCA manifold and allow to cure.

Note: Application of sealant may be temporarily deferred.

2. Deactivate the main gear steering system.

A. Shutoff hydraulic power to both PCAs.

1) Pull the ball-lock pin, on the handle for the manual shutoff valve, aft.

2) Move the handle for the manual shutoff valve to the OFF position.

3) Release the ball-lock pin to hold the handle in the OFF position.

B. Open and collar P110 panel LG MAIN GEAR STEERING circuit breaker.

Note: Removing power from the Main Gear Steering Control Unit (MGSCU) will replace correlated maintenance messages with correlation to maintenance message 32-68840.

OPERATIONS NOTE

1. There is negligible change in U-turn widths if the Flight Crew Training Manual Pivot Turn Technique is used.
2. Minimum radius turns will result in the following effects:
   A. Substantially increased tire scuffing.
   B. Increased thrust required for the turn.
   C. Somewhat rougher cabin ride, particularly in the area above the main gear.

TJA,B,C,D,G,H,R,S,T, TKA to TKF*

   D. Increased risk of damage to Main Landing Gear Hydraulic Line Forward Support Link Assembly.

32-61-01 Landing Gear Position Indication Systems

Interval	Installed	Required	Procedure
B	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Landing gear are secured in the down position.
b. Airplane is dispatched in accordance with Gear Down Dispatch data in Performance Dispatch (PD) chapter.
c. Revenue flight is not permitted.

MAINTENANCE (M)

Secure the landing gear in the down position (AMM 32-00-00/901) .

1. Install landing gear downlock pins, including installation procedure steps for airplane flight with landing gear locked in the extended position (AMM 32-00-30/201).
2. Deactivate the lever lock solenoid for the landing gear control lever by opening and collaring the P210 panel LG LEVER LOCK circuit breaker.

OPERATIONS (O)

1. Observe Landing Gear Extended limitations and operational limits.
2. Base flight plan on landing gear extended.
3. Revenue flight is not permitted.

32-61-01 Landing Gear Position Indication Systems

32-61-01-01 Truck Tilt Sensors

Interval	Installed	Required	Procedure
C	4	0	**(M) (O) (P)**

May be inoperative provided:

a. The nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors are verified to operate normally each flight day.

Note: The airplane must also be dispatched using MEL Item 27-62-01.

MAINTENANCE (M)

Note: An inoperative truck tilt sensor will also result in the AUTO SPEEDBRAKE advisory and status messages being displayed. The AUTO SPEEDBRAKE messages may not display until all three hydraulic systems are pressurized.

Verify the nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors operate normally each flight day (AMM 32-00-00/901) .

1. On Landing Gear Actuation Maintenance page:
   A. Confirm both Nose Gear Lock sensors are NEAR.
   B. Confirm both Nose Gear Gear Down sensors are NEAR.
   C. Confirm all four Main Gear Side Brace sensors are NEAR.
   D. Confirm all four Main Gear Drag Brace sensors are NEAR.

OPERATIONS (O)

Note: An inoperative truck tilt sensor will also result in the AUTO SPEEDBRAKE advisory and status messages being displayed. The AUTO SPEEDBRAKE messages may not display until all three hydraulic systems are pressurized.

1. After takeoff manually move the autobrake selector from RTO to OFF.

32-61-01 Landing Gear Position Indication Systems

32-61-01-02 Nose Gear Not-Compressed Sensors

32-61-01-02-01 PSEU-1

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

May be inoperative provided:

a. Nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors are verified to operate normally each flight day.

b. PSEU-2 operates normally.

MAINTENANCE (M)

Verify the nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors operate normally each flight day (AMM 32-00-00/901) .

1. On Landing Gear Actuation Maintenance page:
   A. Confirm both Nose Gear Lock sensors are NEAR.
   B. Confirm both Nose Gear Gear Down sensors are NEAR.

C. Confirm all four Main Gear Side Brace sensors are NEAR.

D. Confirm all four Main Gear Drag Brace sensors are NEAR.

32-61-01 Landing Gear Position Indication Systems

32-61-01-02 Nose Gear Not-Compressed Sensors

32-61-01-02-02 PSEU-2

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

May be inoperative provided:

a. Nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors are verified to operate normally each flight day.

b. Left equipment cooling controller operates normally.

c. PSEU-1 operates normally.

MAINTENANCE (M)

Verify the nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors operate normally each flight day (AMM 32-00-00/901) .

1. On Landing Gear Actuation Maintenance page:

   A. Confirm both Nose Gear Lock sensors are NEAR.

   B. Confirm both Nose Gear Gear Down sensors are NEAR.

   C. Confirm all four Main Gear Side Brace sensors are NEAR.

   D. Confirm all four Main Gear Drag Brace sensors are NEAR.

32-61-02 Landing Gear Door Position Sensors

Interval	Installed	Required	Procedure
C	6	3	**(M) (P)**

One per gear (nose, left main, right main) may be inoperative provided:

a. Sensor is failed in the door not closed position.

MAINTENANCE (M)

Confirm inoperative sensors are not indicating the closed position (AMM 32-00-00/901) .

1. Display the Landing Gear Actuation maintenance page and confirm the associated sensor is target FAR or blank.
2. If the associated sensor is target NEAR:
   A. Disconnect, cap and stow the connector from the associated door sensor.

32-61-03 Landing Gear Uplock Position Sensors

Interval	Installed	Required	Procedure
C	6	3	**(M) (P)**

One per gear may be inoperative provided:

a. The sensor is failed in the unlocked position and the associated landing gear door position sensors operate normally.

MAINTENANCE (M)

Confirm inoperative sensors are not indicating the locked position (AMM 32-00-00/901) .

1. Display the Landing Gear Actuation maintenance page and confirm the associated uplock sensor is target FAR or blank.
2. If the associated sensor is target NEAR:
   A. Disconnect, cap and stow the connector from the associated gear uplock sensor.

DELETION

32-71-01 Tail Strike Detector Channels

32-71-01-01 One Inoperative

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

32-71-01 Tail Strike Detector Channels

32-71-01-02 Both Inoperative

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

May be inoperative provided:

a. Tail section is visually inspected for damage before each departure.
b. Alternate tail strike detection procedures are established and used.
c. TAIL STRIKE caution message is disabled.

MAINTENANCE (M)

Before each departure, visually inspect the tail section of the aircraft for damage from a tail strike.

Disable the TAIL STRIKE caution message (AMM 32-00-00/901).

1. Remove the Tail Strike Assembly (TSA).
2. Disconnect TSA electrical connector.
3. Fabricate a 4-6 inch long jumper using 20 gauge wire.
4. Install the jumper wire between the ship side sockets 4 and 11.
5. Verify the following EICAS messages:
   A. TAIL STRIKE caution is not displayed.
   B. TAIL STRIKE CHANNEL 1 status is displayed.
   C. TAIL STRIKE CHANNEL 2 status is not displayed.
6. Secure jumper wire using a bundle strap and bag and stow TSA connector.
7. Install the Tail Strike Assembly (TSA).

OPERATIONS (O)

Note: The TAIL STRIKE caution message is not available.

1. During takeoff and flare, flight crew and cabin crew should be alert for a potential tail strike. If a tail strike is perceived by the flight crew or reported from the cabin during takeoff, do the Tail Strike Non-Normal Checklist.

32-72-01 Tail Skid (-300/-300ER)

-300 **32-72-01-01 -300**

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Tail skid is secured in the extended position.

b. Water supplies associated with aft drain mast are secured off.

c. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Secure tail skid in the fully extended position and secure water supplies associated with the aft drain mast off (AMM 32-00-00/901) .

1. Open stabilizer compartment service access door 311BL.
2. If the tail skid is not fully extended:
   A. Clear tail skid area and fully extend the tail skid.
      1) Manually unlock tail skid lock links and move mechanism over center.

         Note: The extension speed of the tail skid may be increased by cracking open the bleed valve, if desired.

      2) When tail skid is fully extended, close the bleed valve.
3. Install tail skid downlock pin (AMM 32-00-30).
4. Check tail skid actuator and hydraulic lines for leaks.
5. Close stabilizer compartment service access door 311BL.
6. Close water supply valves to the galley sinks, lavatory sinks and drinking fountains that drain through the aft drain mast.

   Note: Refer to AMM or SSM for associated water supply valve.

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
680 kg	1,588 kg

   A. The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 1.0%.

32-72-01 Tail Skid (-300/-300ER)

32-72-01-02 -300ER With Tail Skid TKK to TKR

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Tail skid is secured in the extended position.
b. Water supplies associated with aft drain mast are secured off.
c. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Secure tail skid in the fully extended position and secure water supplies associated with the aft drain mast off (AMM 32-00-00/901) .

1. Open stabilizer compartment service access door 311BL.
2. If the tail skid is not fully extended:
   A. Clear tail skid area and fully extend the tail skid.
      1) Manually unlock tail skid lock links and move mechanism over center.

         Note: The extension speed of the tail skid may be increased by cracking open the bleed valve, if desired.

      2) When tail skid is fully extended, close the bleed valve.
3. Install tail skid downlock pin (AMM 32-00-30).
4. Check tail skid actuator and hydraulic lines for leaks.
5. Close stabilizer compartment service access door 311BL.
6. Close water supply valves to the galley sinks, lavatory sinks and drinking fountains that drain through the aft drain mast.

   Note: Refer to AMM or SSM for associated water supply valve.

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
680 kg	1,588 kg

A. The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 1.0%.

32-72-02 Tail Skid Position Sensing System (-300/-300ER)

32-72-02-01 -300 -300

32-72-02-01A Tail Skid Operative

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

May be inoperative provided:

a. Tail skid extend/retract function is verified to operate normally once each flight day.

MAINTENANCE (M)

Verify the tail skid extend/retract function operates normally each flight day (AMM 32-00-00/901) .

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Install nose and main landing gear downlock pins (AMM 32-00-30/201).
3. Pressurize the center hydraulic system (AMM 29-11-00/201).
4. Position Landing Gear Panel (P2-2) GND PROX GEAR switch OVRD.

   Note: Selecting OVRD on the GND PROX GEAR switch inhibits the warning siren from sounding when the landing gear handle is positioned to UP. The Master Warning Light will illuminate and the CONFIG GEAR warning message will be displayed when the land gear handle is positioned UP.
5. Move the landing gear control lever to the UP position while simultaneously pressing the landing gear lever LOCK OVRD switch adjacent to the landing gear control lever.
6. Verify visually that the tail skid retracts.
7. Move the landing gear control lever to the DOWN position.
8. Verify visually that the tail skid extends.
9. Position Landing Gear Panel (P2-2) GND PROX GEAR switch off (OVRD not visible).
10. Remove power from the center hydraulic system (AMM 29-11-00/201).
11. Remove landing gear downlock pins (AMM 32-00-30/201).

32-72-02 Tail Skid Position Sensing System (-300/-300ER)

-300 **32-72-02-01 -300**

32-72-02-01B Tail Skid Inoperative

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Tail skid is secured in the extended position.

b. Water supplies associated with aft drain mast are secured off.

c. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Secure the tail skid in the extended position and secure water supplies associated with the aft drain mast off (AMM 32-00-00/901) .

1. Use MEL Item 32-72-01 (M) procedure to secure the tail skid in the extended position and to secure water supplies associated with the aft drain mast off.

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
680 kg	1,588 kg

   A. The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 1.0%.

32-72-02 Tail Skid Position Sensing System (-300/-300ER)

32-72-02-02 -300ER With Tail Skid TKK to TKR

32-72-02-02A Tail Skid Operative

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

May be inoperative provided:

a. Tail skid extend/retract function is verified to operate normally once each flight day.

MAINTENANCE (M)

Verify the tail skid extend/retract function operates normally each flight day (AMM 32-00-00/901).

1. Supply electrical power on the airplane (AMM 24-22-00/201).
2. Install nose and main landing gear downlock pins (AMM 32-00-30/201).
3. Pressurize the center hydraulic system (AMM 29-11-00/201).
4. Position Landing Gear Panel (P2-2) GND PROX GEAR switch OVRD.

   Note: Selecting OVRD on the GND PROX GEAR switch inhibits the warning siren from sounding when the landing gear handle is positioned to UP. The Master Warning Light will illuminate and the CONFIG GEAR warning message will be displayed when the land gear handle is positioned UP.
5. Move the landing gear control lever to the UP position while simultaneously pressing the landing gear lever LOCK OVRD switch adjacent to the landing gear control lever.
6. Verify visually that the tail skid retracts.
7. Move the landing gear control lever to the DOWN position.
8. Verify visually that the tail skid extends.
9. Position Landing Gear Panel (P2-2) GND PROX GEAR switch off (OVRD not visible).
10. Remove power from the center hydraulic system (AMM 29-11-00/201).
11. Remove landing gear downlock pins (AMM 32-00-30/201).

32-72-02 Tail Skid Position Sensing System (-300/-300ER)

TKK to TKR **32-72-02-02 -300ER With Tail Skid**

32-72-02-02B Tail Skid Inoperative

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Tail skid is secured in the extended position.

b. Water supplies associated with aft drain mast are secured off.

c. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Secure the tail skid in the extended position and secure water supplies associated with the aft drain mast off (AMM 32-00-00/901) .

1. Use MEL Item 32-72-01 (M) procedure to secure the tail skid in the extended position and to secure water supplies associated with the aft drain mast off.

OPERATIONS (O)

1. Reduce performance limited weights by the appropriate adjustments.

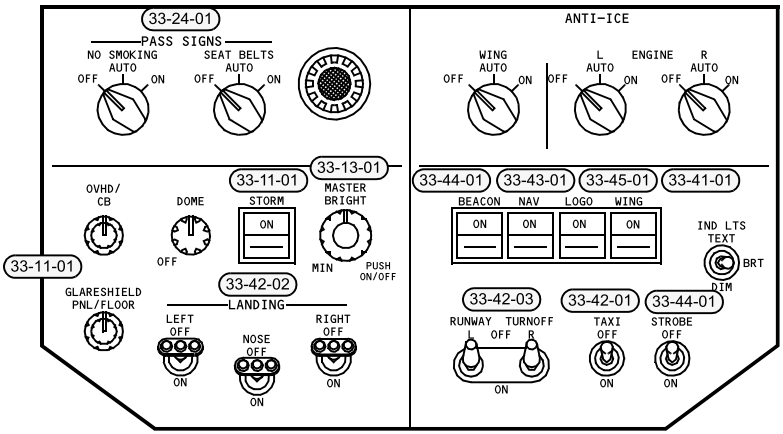
Takeoff & Landing	Enroute Climb
680 kg	1,588 kg

   A. The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

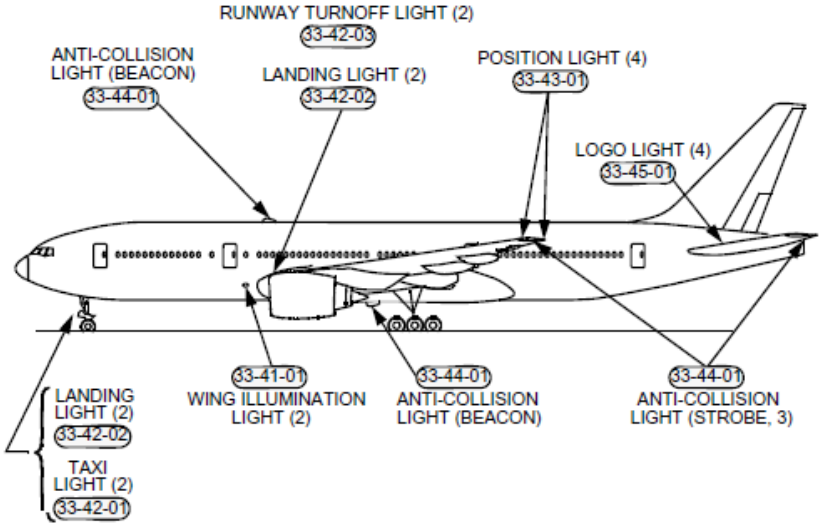
2. Increase flight planning fuel by 1.0%.

LIGHTS

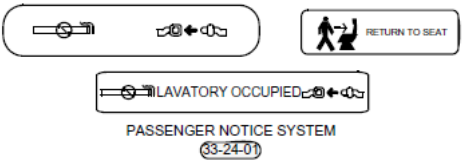
General Locations



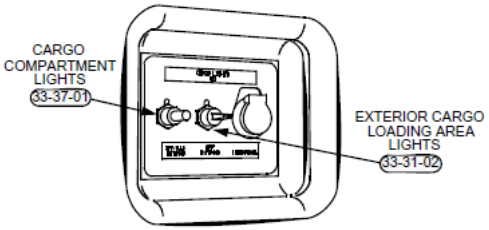
LIGHTING CONTROL PANEL (P5)



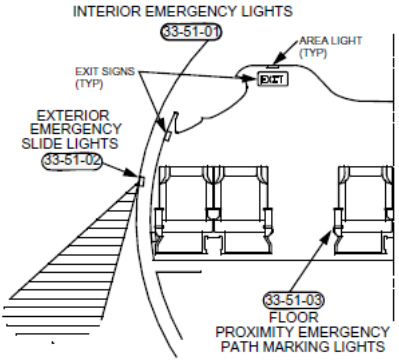
EXTERIOR LIGHTING



PASSENGER NOTICE SYSTEM
33-24-01



CARGO COMPARTMENT LIGHT CONTROLS



PASSENGER COMPARTMENT (RIGHT SIDE)

33-11-01 Flight Compartment and Instrument Lighting System

Interval	Installed	Required	Procedure
C	–	–	**(P)**

Individual lights or light controls may be inoperative provided:

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 crew eyes.

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

d. Captain's emergency dome light operates normally.

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

33-11-01 Flight Compartment and Instrument Lighting System

33-11-01-01 STORM Switch ON Light

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

33-13-01 Master Brightness Control

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

May be inoperative provided:

a. The master brightness control switch is selected off.

33-16-01 Master Dim and Test System

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

Dim function may be inoperative provided:

a. TEST and BRT functions operate normally.

b. Light intensity is acceptable to the flight crew.

OPERATIONS NOTE

1. Only a portion of the flight deck annunciator lights may be affected. The light intensity must be deemed acceptable by each flight crew.

33-21-01 Cabin Interior Illumination

33-21-01-01 Cabin Interior Illumination

33-21-01-01-01 With Powered Floor Proximity Emergency Escape Path Lighting System

Interval	Installed	Required	Procedure
C	–	–	**(P)**

Individual lights may be inoperative provided:

a. Sufficient lighting remains for crew members/cargo couriers to perform their duties.

b. For night operations beyond 60 minutes of landing at a suitable airport, at least 75% of the standby lights operate normally.

Note: Standby lights are embedded in direct ceiling and galley light assemblies at the following locations:

	Number of standby lights						
	DR1L FWD ceiling	DR1R FWD galley	DR2R FWD galley	DR4 galley	DR5 galley	DR5 lowered ceiling	Total
TJA,B,C,D,G, H,TJR to TJW TKA to TKF	1	1	1	1	0	0	4
	1	1	1	2	0	1	6
TKK to TKR, TKU to TKZ	1	1	1	1	1	0	5

33-24-01 Passenger Information Signs

33-24-01A PA System Inoperative

Interval	Installed	Required	Procedure
C	–	–	**(M) (P) (MV)**

May be inoperative provided:

a. Associated passenger seat, or lavatory is not occupied from which a Passenger Information sign is not readily legible.

b. Associated seat or lavatory must be blocked and placarded - INOPERATIVE PLEASE DO NOT USE.

Note: These provisions 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 (AMM 33-00-00/901).

1. Tapes or ropes of conspicuous contrasting colors must be installed to block access to unusable seats prior to boarding of passengers.
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:
   A. Close and lock the lavatory door.

33-24-01 Passenger Information Signs

33-24-01B PA System Operative

Interval	Installed	Required	Procedure
C	–	–	**(O) (P) (MV)**

May be inoperative and the associated passenger seat or lavatory may be occupied provided:

a. PA system operates normally and can be clearly heard throughout the cabin during flight.

b. PA system is used to alert the cabin crew and to notify passengers when seat belts should be fastened, when smoking is prohibited, and when passengers should return to seats.

OPERATIONS (O)

1. Use PA system to alert the cabin crew and to notify passengers when seat belts should be fastened, when smoking is prohibited, and when passengers should return to their seats.

33-24-01 Passenger Information Signs

33-24-01C No Passenger Carried

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

May be inoperative provided:

a. No passengers are carried.
b. A maximum of 19 persons are carried.

OPERATIONS (O)

1. No passengers may be carried.
2. A maximum of 19 persons may be carried.
3. Use PA to notify occupants when seat belts must be used.

33-24-01 Passenger Information Signs

33-24-01-01 Flight Deck Automatic Function

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

May be inoperative provided:

a. Manual control function operates normally.

OPERATIONS (O)

1. Flight crew must notify passengers when seat belts should be fastened and smoking prohibited.

Notes: 1. The No Smoking signs automatic function illuminates the NO SMOKING signs when landing gear not up and locked, or cabin altitude above 10,000 feet, or passenger oxygen on.

2. The Fasten Seat Belt signs automatic function illuminates the FASTEN SEAT BELT signs when landing gear not up and locked, or flap lever not up, or airplane altitude below 10,300 feet, or cabin altitude above 10,000 feet, or passenger oxygen on.

33-24-01 Passenger Information Signs

33-24-01-02 Crew/Attendant Rest Areas

TJR to TJW, TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
C	–	0	**(O) (P)**

OPERATIONS (O)

1. Use PA system to alert the cabin crew and to notify passengers when seat belts should be fastened, when smoking is prohibited, and when passengers should return to their seats.

33-24-01 Passenger Information Signs

33-24-01-03 Aural Tone Function

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

OPERATIONS (O)

1. Use PA system to alert the cabin crew and to notify passengers when seat belts should be fastened, when smoking is prohibited, and when passengers should return to their seats.

33-31-01 Main Wheel Well and Nose Wheel Well Service Area Lights

33-31-01A All Opereations

Interval	Installed	Required	Procedure
C	6	0	

Note: Relief for the Air Conditioning Compartment, APU Compartment, Stabilizer Compartment and Electrical Equipment Center Service Area Lights moved to MEL Item 25-20-01.

33-31-01 Main Wheel Well and Nose Wheel Well Service Area Lights

33-31-01B Day Operations

Interval	Installed	Required	Procedure
D	6	0	

May be inoperative provided:

a. Operations are not conducted at night.

Note: Relief for the Air Conditioning Compartment, APU Compartment, Stabilizer Compartment and Electrical Equipment Center Service Area Lights moved to MEL Item 25-20-01.

33-31-02 Cargo Loading Area Lights

33-31-02-01 Cargo Loading Area Lights

Interval	Installed	Required	Procedure
D	11	0	**(P)**

33-37-01 Cargo Compartment Lights

Interval	Installed	Required	Procedure
C	–	–	**(P)**

Individual lights may be inoperative provided:

a. Sufficient lighting remains for ground personnel to perform their duties.

33-41-01 Wing Illumination Lights

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

May be inoperative provided:

a. Ground de-icing procedures are not performed.

33-41-01 Wing Illumination Lights

33-41-01-01 WING Switch ON Light

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

33-42-01 Taxi Lights

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

33-42-02 Landing Lights

33-42-02A All Operations

Interval	Installed	Required	Procedure
B	4	2	**(P)**

Two may be inoperative for night operations.

33-42-02 Landing Lights

33-42-02B Day Operations

Interval	Installed	Required	Procedure
C	4	0	**(P)**

May be inoperative provided:

a. Operations are not conducted at night.

33-42-02 Landing Lights

33-42-02-01 Dim Function

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

33-42-03 Runway Turnoff Lights

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

33-43-01 Position Lights

33-43-01A All Operations

Interval	Installed	Required	Procedure
C	8	4	**(P)**

For night operations, all except the following minimum may be inoperative:

a. One stationary red wing tip bulb.
b. One stationary green wing tip bulb.
c. One stationary white bulb per wing tip.

33-43-01 Position Lights

33-43-01B Day Operations

Interval	Installed	Required	Procedure
C	8	0	**(P)**

May be inoperative between sunrise and sunset.

33-43-01 Position Lights

33-43-01-01 NAV Switch ON Light

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

TJG,H, TJR to TJW, TKA to TKF, TKK to TKR, TKU to TKZ

33-43-02 Tail Lights

Interval	Installed	Required	Procedure
D	2	0	**(P)**

DELETION

33-44-01 Anti-Collision Lights
33-44-01-01 Red Upper and Lower Fuselage Beacon Lights
33-44-01-01A One Inoperative

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

May be inoperative provided:

a. White tail and wing tip strobe lights operate normally.

33-44-01 Anti-Collision Lights
33-44-01-01 Red Upper and Lower Fuselage Beacon Lights
33-44-01-01B Both Inoperative

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

May be inoperative provided:

a. At least one white tail or wing tip strobe lights operate normally.
b. Operations are not conducted at night.

OPERATIONS NOTE

1. The three white strobe lights form one system and the two red strobe lights form another system. If some but not all lights are inoperative in a system, the remaining operative lights may be used by selecting the associated switch ON.

33-44-01 Anti-Collision Lights
33-44-01-02 White Tail and Wing Tip Strobe Lights
33-44-01-02A Both Red Fuselage Beacon Lights Operative

Interval	Installed	Required	Procedure
C	3	0	**(P)**

May be inoperative provided:

a. Red upper and lower fuselage beacon lights operate normally.

33-44-01 Anti-Collision Lights
33-44-01-02 White Tail and Wing Tip Strobe Lights
33-44-01-02B One Red Fuselage Beacon Light Operative

Interval	Installed	Required	Procedure
C	3	0	**(P)**

May be inoperative provided:

a. At least one red fuselage beacon light operates normally.
b. Operations are not conducted at night.

33-44-01 Anti-Collision Lights
33-44-01-03 BEACON Switch ON Light

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

33-45-01 LOGO Lights

Interval	Installed	Required	Procedure
D	4	0	**(P)**

33-45-01 LOGO Lights

33-45-01-01 LOGO Switch ON Light

Interval	Installed	Required	Procedure
D	1	0	**(P)**

33-51-01 Interior Emergency Lights

Interval	Installed	Required	Procedure
C	–	–	**(P)**

A random 25% of lights/signs may be inoperative provided:

a. Inoperative area illumination lights are not adjacent.

b. Not more than one overhead area light or exit sign at each door is inoperative.

c. Cross-aisle exit signs operate normally.

d. Flight deck emergency dome light operates normally.

Note: Lights associated with an inoperative door or slide/raft are not required.

OPERATIONS NOTE

1. The following are the minimum dispatch requirements for an exit sign to be considered operative:
   A. Horizontal exit signs - At least 9 of 12 lamps must be operative.
   B. Vertical exit signs - At least 3 of 5 lamps must be operative.

33-51-02 Exterior Emergency Slide Lights

Interval	Installed	Required	Procedure
B	–	0	**(P)**

May be inoperative provided:

a. Operations are not conducted at night.

33-51-02 Exterior Emergency Slide Lights

33-51-02-01 -200/-200ER -200,-200ER

Interval	Installed	Required	Procedure
A	8	7	**(P) (MV)**

One may be inoperative provided:

a. Associated passenger entry door is considered inoperative.
b. Repairs are made within one flight day.

OPERATIONS NOTE

1. The airplane must also be dispatched using MEL Item 52-11-01.

33-51-02 Exterior Emergency Slide Lights

33-51-02-02 -300/-300ER -300,-300ER

33-51-02-02-01 Doors 1L, 1R, 2L, 2R, 4L, 4R, 5L and 5R

Interval	Installed	Required	Procedure
A	8	7	**(P) (MV)**

One may be inoperative provided:

a. Associated passenger entry door is considered inoperative.
b. Exterior emergency slide lights for doors 3L and 3R operate normally.
c. Repairs are made within one flight day.

OPERATIONS NOTE

1. The airplane must also be dispatched using MEL Item 52-11-01.

33-51-02 Exterior Emergency Slide Lights

-300,-300ER **33-51-02-02 -300/-300ER**

33-51-02-02-02 Doors 3L and 3R

Interval	Installed	Required	Procedure
A	6	3	**(P) (MV)**

Lights associated with one door may be inoperative provided:

a. Associated passenger entry door is considered inoperative.
b. All remaining door exterior emergency slide lights operate normally.
c. Repairs are made within one flight day.

OPERATIONS NOTE

1. The airplane must also be dispatched using MEL Item 52-11-01.

33-51-03 Floor Proximity Emergency Lighting Systems

33-51-03-01 Powered Escape Path Lighting System

Interval	Installed	Required	Procedure
B	–	–	**(P)**

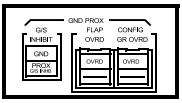
A random 25% of lights may be inoperative provided:

a. Inoperative floor proximity lights are not adjacent.

Note: Lights associated with an inoperative door slide/raft are not required.

NAVIGATION

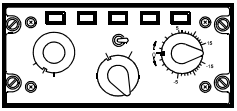
General Locations



GROUND PROXIMITY WARNING MODULE

GROUND PROXIMITY WARNING SYSTEM

34-46-01



WEATHER RADAR CONTROL PANEL

WEATHER RADAR SYSTEM

34-43-01

34-12-01 Mach Indications

34-12-01A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	**(O) (P) (MV)**

One may be inoperative provided:

a. Flight descends to FL 290 or below if failure of the second indication occurs in flight.

OPERATIONS (O)

1. If remaining Mach indication fails inflight, descend to FL 290 or below.

34-12-01 Mach Indications

34-12-01B Both Inoperative

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

May be inoperative provided:

a. Flight remains at or below FL 290.

OPERATIONS (O)

1. Flight must remain at or below FL 290.

34-12-02 True Airspeed Indications

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

34-16-01 Altitude Alerting System

Interval	Installed	Required	Procedure
A	1	0	**(O) (P) (MV)**

May be inoperative provided:

a. Autopilot with altitude hold and altitude capture operates normally.

b. Enroute operations 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.

OPERATIONS (O)

1. Enroute operations that require RVSM may not be conducted.
2. Use the autopilot and altitude hold for all operations for which it is appropriate.
3. Cross-check the MCP ALTITUDE window with altitude indications on captain's and first officer's PFDs upon reaching and departing an assigned altitude. Periodically cross-check altitude indications when maintaining an assigned altitude.
4. Pilot monitoring should call out approaching and departing assigned altitudes.
5. Flight crew must be aware that the usual alerts for altitude deviations will not occur.

34-16-01 Altitude Alerting System

34-16-01-01 Aural Alert

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

May be inoperative provided:

a. Visual alert operates normally.

b. Autopilot with altitude hold and altitude capture operates normally.

34-16-01 Altitude Alerting System

34-16-01-02 Visual Alert

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

May be inoperative provided:

a. Aural alert operates normally.

b. Autopilot with altitude hold and altitude capture operates normally.

34-21-02 Static Air Temperature (SAT) Indication

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

34-21-03 Air Data Inertial Reference Unit (ADIRU)

34-21-03-01 ADIRU Faults

34-21-03-01A Ground NAV Available

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

May be dispatched with faults indicated by ADIRU status message provided:

a. Adequate ground navigation facilities are available.
b. Non-stabilized magnetic compass operates normally.
c. Approach minimums do not require use of triple channel autoland.
d. SAARU data is verified available to both PFDs before each departure.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Verify that SAARU data is available to both PFDs before each departure (AMM 34-00-00/901).

1. With the airplane powered, check SAARU alignment.
2. Position both AIR DATA/ATT switches ALTN (non-normal position—switch in).
3. Verify that ALTN ATTITUDE advisory message is displayed.
4. Verify that the Attitude Indication on the both Primary Flight Displays (PFD) display the sky/ground (blue over brown) shading and pitch scale. No airspeed or altitude failure flags should be displayed on either PFD.
5. Position both AIR DATA/ATT switches off (normal position—switch out).
6. Verify that ALTN ATTITUDE advisory message is not displayed.

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.

34-21-03 Air Data Inertial Reference Unit (ADIRU)

34-21-03-01 ADIRU Faults

34-21-03-01B Ground NAV Not Available

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

May be dispatched with faults indicated by ADIRU status message provided:

a. Both GPS receivers operate normally.
b. Both FMCs operate normally.
c. Non-stabilized magnetic compass operates normally.
d. Approach minimums do not require use of triple channel autoland.
e. SAARU data is verified available to both PFDs before each departure.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Verify that SAARU data is available to both PFDs before each departure (AMM 34-00-00/901).

1. With the airplane powered, check SAARU alignment.
2. Position both AIR DATA/ATT switches ALTN (non-normal position—switch in).
3. Verify that ALTN ATTITUDE advisory message is displayed.
4. Verify that the Attitude Indication on the both Primary Flight Displays (PFD) display the sky/ground (blue over brown) shading and pitch scale. No airspeed or altitude failure flags should be displayed on either PFD.
5. Position both AIR DATA/ATT switches off (normal position—switch out).
6. Verify that ALTN ATTITUDE advisory message is not displayed.

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.

34-21-03 Air Data Inertial Reference Unit (ADIRU)

34-21-03-02 ON BAT Light

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

34-21-03 Air Data Inertial Reference Unit (ADIRU)

34-21-03-03 ADIRU Switch Lights

34-21-03-03-01 OFF Light

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

34-21-03 Air Data Inertial Reference Unit (ADIRU)

34-21-03-03 ADIRU Switch Lights

34-21-03-03-02 ON Light

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

34-21-04 Pitot Air Data Modules (Primary—ARINC 629)

34-21-04-01 Right Pitot Air Data Module

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

May be inoperative provided:

a. Left and center pitot probe heater systems operate normally.
b. Left and center pitot air data modules operate normally.
c. Left static air data module operates normally.
d. Standby airspeed indication operates normally.
e. Right AIR DATA/ATT instrument source switch operates normally.
f. SAARU data is verified to be available to the right PFD before each departure.
g. Left and center pitot probes are inspected before each departure.
h. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Notes: 1. The left, center and right Pitot and Static ADMs are interchangeable.

2. An inoperative right Pitot ADM may also result in the AOA VANE R status message. For AOA VANE R status message displayed, the airplane must also be dispatched using MEL Item 34-21-06.

Inspect the left and center pitot probes and verify SAARU is available to the right PFD before each departure (AMM 34-00-00/901).

1. Prior to each departure, visually examine the left and center pitot probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe—Inspection/Check (AMM 34-11-01/601).
2. Verify SAARU data is available to the right Primary Flight Display (PFD) before each departure.
   A. With the airplane powered, verify SAARU alignment.
   B. Position right AIR DATA/ATT switch ALTN (non-normal position—switch in).
   C. Verify the Attitude Indication on the right PFD displays the sky/ground (blue over brown) shading and pitch scale.
   D. Position right AIR DATA/ATT switch off (normal position—switch out).

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.
2. If the Captain's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed may be flagged inoperative,or airspeed and altitude may be in error on the left PFD. This effect is normal for this dispatch condition.
3. An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid. Lack of valid voted airspeed will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs. Additionally, the right PFD airspeed may be flagged inoperative, or airspeed and altitude may be in error.

   Note: For a right PFD airspeed flagged, selection of the First Officer's AIR DATA/ATT switch to ALTN will display the left PFD airspeed on the right PFD. This single airspeed condition will be indicated by the SGL SOURCE AIR DATA advisory message.

   The following display effects with regard to airspeed (A/S) are possible:

Pitot ADM Inop At Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Right	Left	In Error (plugged)	Correct	Flag (ADM failed) or In Error (ADM inop)
Right	Center	Correct	In Error (plugged)	Flag (ADM failed) or In Error (ADM inop)

34-21-04 Pitot Air Data Modules (Primary—ARINC 629)

34-21-04-02 Left Pitot Air Data Module

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

May be inoperative provided:

a. Right and center pitot probe heater systems operate normally.
b. Right and center pitot air data modules operate normally.
c. Right static air data module operates normally.

d. Standby airspeed indication operates normally.

e. Left AIR DATA/ATT instrument source switch operates normally.

f. SAARU data is verified to be available to the left PFD before each departure.

g. Right and center pitot probes are inspected before each departure.

h. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Notes: 1. The left, center and right Pitot and Static ADMs are interchangeable.

2. An inoperative left Pitot ADM may also result in the AOA VANE L status message. For AOA VANE L status message displayed, the airplane must also be dispatched using MEL Item 34-21-06.

3. The WINDSHEAR REAC status message and WINDSHEAR SYS advisory message may also be displayed. For a WINDSHEAR REAC status message or WINDSHEAR SYS advisory message displayed, the airplane must also be dispatched using MEL Item 34-46-01-02.

4. The SATCOM SYSTEM and SATCOM HI GAIN status messages may also be displayed. For a SATCOM SYSTEM or SATCOM HI GAIN status message displayed, the airplane must also be dispatched using MEL Item 23-15-01.

Inspect the right and center pitot probes and verify SAARU is available to the left PFD before each departure (AMM 34-00-00/901).

1. Prior to each departure, visually examine the right and centre pitot probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe—Inspection/Check (AMM 34-11-01/601).
2. Verify SAARU data is available to the left Primary Flight Display (PFD) before each departure.
   A. With the airplane powered, verify SAARU alignment.
   B. Position left AIR DATA/ATT switch ALTN (non-normal position—switch in).
   C. Verify the Attitude Indication on the left PFD displays the sky/ground (blue over brown) shading and pitch scale.
   D. Position left AIR DATA/ATT switch off (normal position—switch out).

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.

2. If the First Officer's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed may be flagged inoperative, or airspeed and altitude may be in error on the right PFD. This effect is normal for this dispatch condition.
3. The WINDSHEAR SYS advisory message may also be displayed.
4. An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid. Lack of valid voted airspeed will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs. Additionally, the left PFD airspeed may be flagged inoperative, or airspeed and altitude may be in error.

   Note: For a left PFD airspeed flagged, selection of the Captain's AIR DATA/ATT switch to ALTN will display the right PFD airspeed on the left PFD. This single airspeed condition will be indicated by the SGL SOURCE AIR DATA advisory message.

   The following display effects with regard to airspeed (A/S) are possible:

Pitot ADM Inop At Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Left	Center	Flag (ADM failed) or In error (ADM inop)	In Error (plugged)	Correct
Left	Right	Flag (ADM failed) or In error (ADM inop)	Correct	In Error (plugged)

34-21-04 Pitot Air Data Modules (Primary—ARINC 629)

34-21-04-03 Center Pitot Air Data Module

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

May be inoperative provided:

a. Left and right pitot probe heater systems operate normally.
b. Left and right pitot air data modules operate normally.
c. Left and right static air data modules operate normally.
d. Standby airspeed indication operates normally.

e. Both AIR DATA/ATT instrument source switches operate normally.

f. SAARU data is verified to be available to both PFDs before each departure.

g. Left and right pitot probes are inspected before each departure.

h. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Note: The left, center and right Pitot and Static ADMs are interchangeable.

Inspect the left and right pitot probes before each departure and verify SAARU is available to both PFDs (AMM 34-00-00/901).

1. Prior to each departure, visually examine the left and right pitot probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe—Inspection/Check (AMM 34-11-01/601).
2. Verify SAARU data is available to both Primary Flight Displays (PFD) before each departure.
   A. With the airplane powered, verify SAARU alignment.
   B. Verify SAARU data is available to the left PFD.
      1) Position left AIR DATA/ATT switch ALTN (non-normal position—switch in).
      2) Verify the Attitude Indication on the left PFD displays the sky/ground (blue over brown) shading and pitch scale.
      3) Position left AIR DATA/ATT switch off (normal position—switch out).
   C. Verify SAARU data is available to the right PFD.
      1) Position right AIR DATA/ATT Selector ALTN (non-normal position —switch in).
      2) Verify the Attitude Indication on the right PFD displays the sky/ground (blue over brown) shading and pitch scale.
      3) Position right AIR DATA/ATT switch off (normal position—switch out).

OPERATIONS NOTE

1. The autoland system is not fail-operational and the NO LAND 3 advisory message will be displayed.
2. An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid. Lack of valid voted airspeed will result in display of the NAV

AIR DATA SYS advisory or AIR DATA SYS caution message and single channel airspeed and altitude will be displayed on the PFDs.

The following display effects with regard to airspeed (A/S) are possible:

Pitot ADM Inop At Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Center	Left	In Error (plugged)	Correct	Correct
Center	Right	Correct	Correct	In Error (plugged)

34-21-05 Static Air Data Modules (Primary—ARINC 629)

34-21-05-01 Right Static Air Data Module

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

May be inoperative provided:

a. Left and center static air data modules operate normally.
b. Left pitot air data module operates normally.
c. Right AIR DATA/ATT instrument source switch operates normally.
d. Standby airspeed indication operates normally.
e. SAARU data is verified to be available to the right PFD before each departure.
f. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Note: The left, center and right Pitot and Static ADMs are interchangeable.

Verify SAARU data is available to the right Primary Flight Display (PFD) (AMM 34-00-00/901).

1. With the airplane powered, verify SAARU alignment.
2. Position right AIR DATA/ATT switch ALTN (non-normal position—switch in).
3. Verify the Attitude Indication on the right PFD displays the sky/ground (blue over brown) shading and pitch scale.
4. Position right AIR DATA/ATT switch off (normal position—switch out).

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.
2. If the Captain's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed and altitude may be flagged inoperative or may be in error on the left PFD. This effect is normal for this dispatch condition.
3. An additional failure, such as a plugged or disconnected static source, may result in the two remaining static sources miscomparing and voted airspeed and altitude being declared invalid. Lack of valid voted airspeed and altitude will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs. Additionally, the right PFD airspeed and altitude may be flagged inoperative or may be in error.

Note: For a right PFD airspeed and altitude flagged, selection of the First Officer's AIR DATA/ATT switch to ALTN will display the left PFD airspeed and altitude on the right PFD. This single air data condition will be indicated by the SGL SOURCE AIR DATA advisory message.

The following display effects with regard to airspeed (A/S) and altitude (ALT) are possible:

Static ADM Inop At Dispatch	Static Source Plugged, Disconnected, etc.	L PFD A/S & ALT Display	Standby A/S & ALT Display	R PFD A/S & ALT Display
Right	Left	In Error (plugged)	Both Correct	Flags (ADM failed) or In Error (ADM inop)
Right	Center	Both Correct	In Error (plugged)	Flags (ADM failed) or In Error (ADM inop)

34-21-05 Static Air Data Modules (Primary—ARINC 629)

34-21-05-02 Left Static Air Data Module

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

May be inoperative provided:

a. Right and center static air data modules operate normally.
b. Right pitot air data module operates normally.
c. Left AIR DATA/ATT instrument source switch operates normally.
d. Standby airspeed indication operates normally.
e. SAARU data is verified to be available to the left PFD before each departure.
f. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Notes: 1. The left, center and right Pitot and Static ADMs are interchangeable.

2. Certain faults of the left static ADM may cause the WINDSHEAR REAC status message and WINDSHEAR SYS advisory message to be displayed. For a WINDSHEAR REAC status message or WINDSHEAR SYS advisory message displayed, the airplane must also be dispatched using MEL Item 34-46-01-02.
3. Certain faults of the Left Static ADM may cause the SATCOM SYSTEM and SATCOM HI GAIN status messages to be displayed. For a SATCOM SYSTEM or SATCOM HI GAIN status message displayed, the airplane must also be dispatched using MEL Item 23-15-01.

Verify SAARU data is available to the left Primary Flight Display (PFD) (AMM 34-00-00/901).

1. With the airplane powered, verify SAARU alignment.
2. Position left AIR DATA/ATT switch ALTN (non-normal position—switch in).
3. Verify the Attitude Indication on the left PFD displays the sky/ground (blue over brown) shading and pitch scale.
4. Position left AIR DATA/ATT switch off (normal position—switch out).

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.
2. If the First Officer's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed and altitude may be flagged inoperative or may be in error on the right PFD.This effect is normal for this dispatch condition.
3. Certain faults of the Left Static ADM may cause the WINDSHEAR SYS advisory message to be displayed.
4. An additional failure, such as a plugged or disconnected static source, may result in the two remaining static sources miscomparing and voted airspeed and altitude being declared invalid. Lack of valid voted airspeed and altitude will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs. Additionally, the left PFD airspeed and altitude may be flagged inoperative or may be in error.

   Note: For a left PFD airspeed and altitude flagged, selection of the Captain's AIR DATA/ATT switch to ALTN will display the right PFD airspeed and altitude on the left PFD. This single air data condition will be indicated by the SGL SOURCE AIR DATA advisory message.

   The following display effects with regard to airspeed (A/S) and altitude (ALT) are possible:

Static ADM Inop At Dispatch	Static Source Plugged, Disconnected, etc.	L PFD A/S & ALT Display	Standby A/S & ALT Display	R PFD A/S & ALT Display
Left	Center	Flags (ADM failed) or In Error (ADM inop)	In Error (plugged)	Both Correct
Left	Right	Flags (ADM failed) or In Error (ADM inop)	Both Correct	In Error (plugged)

34-21-05 Static Air Data Modules (Primary—ARINC 629)

34-21-05-03 Center Static Air Data Module

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

May be inoperative provided:

a. Left and right static air data modules operate normally.
b. Left and right pitot air data modules operate normally.
c. Both AIR DATA/ATT instrument source switches operate normally.
d. SAARU data is verified to be available to both PFDs before each departure.
e. Standby airspeed indication operates normally.
f. Approach minimums do not require its use.

Note: Approaches are limited to CAT IIIA with decision height.

MAINTENANCE (M)

Note: The left, center and right Pitot and Static ADMs are interchangeable.

Verify SAARU data is available to both Primary Flight Displays (PFD).

1. With the airplane powered, verify SAARU alignment.
2. Verify SAARU data is available to the left PFD.
   A. Position left AIR DATA/ATT switch ALTN (non-normal position—switch in).
   B. Verify the Attitude Indication on the left PFD displays the sky/ground (blue over brown) shading and pitch scale.

C. Position left AIR DATA/ATT switch off (normal position—switch out).

3. Verify the SAARU data is available to the right PFD.
   A. Position right AIR DATA/ATT switch to ALTN (non-normal position—switch in).
   B. Verify the Attitude Indication on the right PFD displays the sky/ground (blue over brown) shading and pitch scale.
   C. Position right AIR DATA/ATT switch off (normal position—switch out).

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.
2. An additional failure, such as a plugged or disconnected static source, may result in the two remaining static sources miscomparing and voted airspeed and altitude being declared invalid. Lack of valid voted airspeed and altitude will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs.

   The following display effects with regard to airspeed (A/S) and altitude (ALT) are possible:

Static ADM Inop At Dispatch	Static Source Plugged, Disconnected, etc.	L PFD A/S & ALT Display	Standby A/S & ALT Display	R PFD A/S & ALT Display
Center	Left	In Error (plugged)	Both Correct	Both Correct
Center	Right	Both Correct	Both Correct	In Error (plugged)

34-21-06 Angle of Attack (AOA) Vane Systems

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

OPERATIONS NOTE

1. If an error greater than four degrees (nose up) occurs on the remaining operational AOA vane, then the stick shaker may activate when stall conditions do not actually exist. In addition, the maximum and minimum speed indications on the PFD may come together. In general, this error will be detected within 20 seconds by the ADIRS and the remaining AOA vane rendered inoperative. The stall warning function will then resume normal operation using other signals within the ADIRS.

34-21-07 Secondary Attitude Air Data Reference Unit (SAARU)

34-21-07-02 With Integrated Standby Flight Display (ISFD) Installed

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

May be inoperative provided:

a. Approach minimums do not require the use of the SAARU.
b. ADIRU operates normally.
c. Left, right and center pitot air data modules operate normally.
d. Left, right and center static air data modules operate normally.
e. ISFD operates normally.
f. One GPS receiver operates normally.
g. Non-stabilized magnetic compass operates normally.

Note: Approaches are limited to CAT IIIA with decision height.

Note: For ENG EEC MODE L or R status or advisory messages displayed, the airplane must also be dispatched using MEL Item 73-21-02-02. TKK to TKR, TKU to TKZ

MAINTENANCE NOTE TKK to TKR, TKU to TKZ

1. Some SAARU faults may cause the EEC's to revert to ALTN mode after engine start. To determine if this condition exists prior to engine start, set either Overhead Maintenance Panel (P61) EEC MAINT switch to the TEST position and check EICAS for ENG EEC MODE L or R status or advisory messages displayed. Return the Overhead Maintenance Panel (P61) EEC MAINT switch to the NORM position.

OPERATIONS (O)

Notes: 1. If the Captain's AIR DATA/ATT instrument source switch is positioned to ALTN, attitude will be flagged inoperative and airspeed and altitude may be flagged inoperative on the Captain's PFD. If the First Officer's AIR DATA/ATT instrument source switch is positioned to ALTN, attitude will be flagged inoperative on the First Officer's PFD.

2. For ATC transponder panel with ALT SOURCE selection, selecting ALTN altitude source will result in no altitude reporting.

3. For ATC transponder panel without ALT SOURCE selection, selecting RIGHT transponder will result in no altitude reporting.

1. The NO LAND 3 advisory message will be displayed.

34-21-08 Integrated Standby Flight Display (ISFD)

34-21-08-01 Attitude Indication

Interval	Installed	Required	Procedure
B	1	0	**(P) (MV)**

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.

34-21-08 Integrated Standby Flight Display (ISFD)

34-21-08-02 Airspeed Indication

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

May be inoperative provided:

a. All ARINC 629 pitot air data modules operate normally.

b. All ARINC 629 static air data modules operate normally.

c. All Pitot Probe heater systems operate normally.

d. Both AIR DATA/ATT instrument source switches operate normally.

e. SAARU data is verified available to both PFDs before each departure.

MAINTENANCE (M)

Verify that SAARU data is available to both PFDs before each departure (AMM 34-00-00/901).

1. With the airplane powered (including ADIRU ON), check SAARU alignment.
   A. Position both AIR DATA/ATT switches ALTN (non-normal position—switch in).
   B. Verify ALTN ATTITUDE advisory message is displayed.
   C. Verify that the Attitude Indication on the both Primary Flight Displays (PFD) display the sky/ground (blue over brown) shading and pitch scale. No airspeed or altitude failure flags should be displayed on either PFD.
   D. Position both AIR DATA/ATT switches off (normal position—switch out).

E. Verify ALTN ATTITUDE advisory message is not displayed.

OPERATIONS NOTE

1. Altitude differences may be noted between the ISFD altimeter indication and the primary displays, particularly at higher speeds and altitudes. The ISFD altimeter defaults to a fixed static source error correction when the ISFD airspeed indication is inoperative.

34-21-08 Integrated Standby Flight Display (ISFD)

34-21-08-03 Approach Mode

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

34-21-08 Integrated Standby Flight Display (ISFD)

34-21-08-04 Heading Display

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

34-21-08 Integrated Standby Flight Display (ISFD)

34-21-08-05 Switch Lights

Interval	Installed	Required	Procedure
C	5	0	**(P)**

34-23-01 Non-Stabilized Magnetic Compass (Standby)

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

May be inoperative provided ADIRU operates normally.

MAINTENANCE NOTE

The ADIRU is operating normally if the ADIRU status message is not displayed.

34-31-01 Instrument Landing System (ILS)

34-31-01A One Inoperative

Interval	Installed	Required	Procedure
B	3	2	**(P) (MV)**

One may be inoperative provided:

a. Approach minimums do not require their use.

Note: Approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.
2. For left ILS inoperative, the Ground Proximity Warning System Mode 5 (Glideslope Deviation) will be inoperative and the airplane must also be dispatched using MEL 34-46-01-02.

34-31-01 Instrument Landing System (ILS)

34-31-01B More Than One Inoperative

Interval	Installed	Required	Procedure
B	3	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require their use.

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

Note: Approaches are limited to CAT I.

OPERATIONS NOTE

1. The NO AUTOLAND advisory message will be displayed.
2. For left ILS inoperative, the Ground Proximity Warning System Mode 5 (Glideslope Deviation) will be inoperative and the airplane must also be dispatched using MEL 34-46-01-02.

34-31-02 Glideslope Antenna Switching

34-31-02A One Inoperative

Interval	Installed	Required	Procedure
D	3	2	**(P) (MV)**

One may be inoperative provided:

a. Approach minimums do not require use of the associated ILS receiver.

Note: Approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.

34-31-02 Glideslope Antenna Switching

34-31-02B More Than One Inoperative

Interval	Installed	Required	Procedure
C	3	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require use of the associated ILS receiver.

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

Note: Approaches are limited to CAT I.

OPERATIONS NOTE

1. The NO AUTOLAND advisory message will be displayed.

34-31-03 Localizer Antenna Switching

34-31-03A One Inoperative

Interval	Installed	Required	Procedure
D	3	2	**(P) (MV)**

One may be inoperative provided:

a. Approach minimums do not require use of the assoicated ILS receiver.

Note: Approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed.

34-31-03 Localizer Antenna Switching

34-31-03B More Than One Inoperative

Interval	Installed	Required	Procedure
C	3	0	**(P) (MV)**

May be inoperative provided:

a. Approach minimums do not require use of the associated ILS receiver.

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

Note: Approaches are limited to CAT I.

OPERATIONS NOTE

1. The NO AUTOLAND advisory message will be displayed.

34-32-01 Marker Beacon System

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

May be inoperative provided:

a. Approach minimums do not require its use.

MAINTENANCE NOTE

1. The Marker Beacon and VOR receivers are contained in the same LRU. If the VOR system fails because of the Marker Beacon, the specific CMC fail message will indicate the Marker Beacon failure.

34-33-01 Radio Altimeter Systems

Interval	Installed	Required	Procedure
B	3	2	**(P) (MV)**

One may be inoperative provided:

a. Approach minimums or operating procedures do not require its use.

Note: If the NO LAND 3 advisory message is displayed, approaches are limited to CAT IIIA with decision height.

OPERATIONS NOTE

1. The NO LAND 3 advisory message will be displayed for a fault indicated by a RADIO ALT X status message and may be displayed for a fault indicated by a RADIO ALT MONITOR X status message.

34-43-01 Weather Radar System

34-43-01A Reactive Windshear Operative

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

May be inoperative provided:

DELETION

a. Reactive windshear alert (GPWS Mode 7) operates normally.

b. Weather reports do not indicate thuderstorms or other potentially hazardous weather conditions.

MAINTENANCE NOTE

1. The WINDSHEAR PRED status message is not displayed if the WXR SYS status message is displayed.

OPERATIONS (O)

1. Refer to FCOM Supplementary Procedures SP.16 for windshear avoidance and recovery.

   Note: The WINDSHEAR SYS advisory message will be displayed.

34-43-01 Weather Radar System

34-43-01B Reactive Windshear Inoperative

Interval	Installed	Required	Procedure
B	2	0	**(O) (P) (MV)**

May be inoperative provided:

DELETION

a. Weather reports do not indicate thuderstorms or other potentially hazardous weather conditions.

MAINTENANCE NOTE

1. The WINDSHEAR PRED status message is not displayed if the WXR SYS status message is displayed.

OPERATIONS (O)

1. Refer to FCOM Supplementary Procedures SP.16 for windshear avoidance and recovery.

   Note: The WINDSHEAR SYS advisory message will be displayed.

34-43-01 Weather Radar System

34-43-01C One Operative

Interval	Installed	Required	Procedure
D	2	1	**(P)**

34-43-01 Weather Radar System

34-43-01-01 Predictive Windshear Function

34-43-01-01A Reactive Windshear Operative

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

May be inoperative provided:

DELETION

a. Reactive windshear alert (GPWS Mode 7) operates normally.

b. Weather reports do not indicate thuderstorms or other potentially hazardous weather conditions.

OPERATIONS (O)

1. Refer to FCOM Supplementary Procedures SP.16 for windshear avoidance and recovery.

   Note: The WINDSHEAR SYS advisory message will be displayed.

34-43-01 Weather Radar System

34-43-01-01 Predictive Windshear Function

34-43-01-01B Reactive Windshear Inoperative

Interval	Installed	Required	Procedure
B	2	0	**(O) (P)**

May be inoperative provided:

DELETION

a. Weather reports do not indicate thuderstorms or other potentially hazardous weather conditions.

OPERATIONS (O)

1. Refer to FCOM Supplementary Procedures SP.16 for windshear avoidance and recovery.

   Note: The WINDSHEAR SYS advisory message will be displayed.

34-43-01 Weather Radar System

TJR to TJW, TKK to TKR, TKU to TKZ*

34-43-01-02 Auto Tilt Function

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

May be inoperative provided:

a. Manual tilt function operates normally.

OPERATIONS NOTE

1. Manual TILT adjustments may be necessary to optimize weather display.

34-45-01 Traffic Collision and Avoidance System (TCAS)

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

May be inoperative provided:

a. System is deactivated and secured.

b. Enroute or approach procedures do not require its use.

c. Flight is not departed from BKK for international flights.

Note: Minimum requirements for a TCAS system to be considered operative are at least one TA visual display and audio function are operative, or one RA visual display and audio function are operative.

MAINTENANCE (M)

1. Deactivate and secure the system by opening and collaring the P11 panel TCAS circuit breaker (AMM 34-00-00/901).

34-45-01 Traffic Collision and Avoidance System (TCAS)

34-45-01-01 Resolution Advisory (RA) Display Systems

34-45-01-01A One Inoperative

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

One may be inoperative on the non-flying pilot side.

OPERATIONS (O)

1. Observe operative indications and advisories. Respond as appropriate.

34-45-01 Traffic Collision and Avoidance System (TCAS)

34-45-01-01 Resolution Advisory (RA) Display Systems

34-45-01-01B Both Inoperative

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

May be inoperative provided:

a. Traffic Alert (TA) visual display and audio functions operate normally.
b. TA only mode is selected by the crew.
c. Enroute or approach procedures do not require its use.

OPERATIONS (O)

1. Select TA mode. Observe operative indications and advisories. Respond as appropriate.

34-45-01 Traffic Collision and Avoidance System (TCAS)

34-45-01-02 Traffic Alert (TA) Display Systems

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

May be inoperative provided:

a. RA visual display and audio functions operate normally.
b. Enroute or approach procedures do not require its use.

OPERATIONS (O)

1. Observe operative indications and advisories. Respond as appropriate.

34-45-01 Traffic Collision and Avoidance System (TCAS)

34-45-01-03 Audio Functions

Interval	Installed	Required	Procedure
B	1	0	**(P) (MV)**

May be inoperative provided:

a. Enroute or approach procedures do not require use of TCAS.

Note: The airplane must also be dispatched using MEL Item 34-45-01.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-01 GPWS Function

Interval	Installed	Required	Procedure
A	1	0	**(O) (P)**

May be inoperative provided:

a. Repairs are made within two flight days.

TJR to TJW, TKK to TKR, TKU to TKZ

Note: The airplane must also be dispatched using MEL Item 34-43-01-02.

OPERATIONS (O)

1. Maintain flight crew awareness of airplane altitude and flight path. They may include flight crew use of all systems available (autopilot, autoland, ILS and FMCS) and approach altitude callouts.

   Notes: 1. The GPWS provides the aural signal for the automatic V1 callout and the Engine Fail alert. These aural signals may not be available.

   2. The GND PROX SYS advisory message will be displayed.

TJR to TJW, TKK to TKR, TKU to TKZ

   3. AUTOTILT FAIL will be annunciated on the ND.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-01 GPWS Function

34-46-01-01-01 Modes 1-4

Interval	Installed	Required	Procedure
A	4	0	**(O) (P)**

May be inoperative provided:

a. Repairs are made within two flight days.

OPERATIONS (O)

1. Flight crew must maintain awareness of airplane altitude and flight path. Use all systems available (autopilot, autoland, ILS and FMCS) and approach altitude callouts.

   Note: The GPWS provides the aural signal for the automatic V1 callout and the Engine Fail alert. These aural signals may not be available.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-01 GPWS Function

34-46-01-01-02 Glideslope Deviation (Mode 5)

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

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-01 GPWS Function

34-46-01-01-03 Advisory Callouts (Mode 6)

Interval	Installed	Required	Procedure
B	–	0	**(O) (P)**

OPERATIONS (O)

1. Flight crew must maintain awareness of airplane altitude and flight path. Use all systems available (autopilot, autoland, ILS and FMCS) and approach altitude callouts.

   Note: The GPWS provides the aural signal for the automatic V1 callout and the Engine Fail alert. These aural signals may not be available.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-02 Windshear Alert Mode Function (Reactive) (Mode 7)

34-46-01-02A Predictive Windshear Operative

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

May be inoperative provided:

a. Predictive windshear operates normally.

OPERATIONS (O)

1. Flight crew should turn on the weather radar system before takeoff and during landing when weather reports indicate thunderstorms or other potentially hazardous weather conditions.

   Note: The WINDSHEAR SYS advisory message will be displayed.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-02 Windshear Alert Mode Function (Reactive) (Mode 7)

34-46-01-02B Predictive Windshear Inoperative

Interval	Installed	Required	Procedure
B	1	0	**(O) (P)**

May be inoperative provided:

a. Flight crew review windshear avoidance and windshear recovery procedures.

OPERATIONS (O)

1. Flight crew must review windshear avoidance and windshear recovery procedures.

   Note: The WINDSHEAR SYS advisory message will be displayed.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-03 Terrain Awareness Function

Interval	Installed	Required	Procedure
B	1	0	**(O) (P)**

OPERATIONS (O)

1. Flight crew must maintain awareness of airplane altitude and flight path. Use all systems available (autopilot, autoland, ILS and FMCS) and approach altitude callouts.

   Notes: 1. The GND PROX SYS advisory message will be displayed.

TJR to TJW, TKK to TKR, TKU to TKZ

2. AUTOTILT FAIL will be annunciated on the ND. The airplane must also be dispatched using MEL Item 34-43-01-02.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-03 Terrain Awareness Function

34-46-01-03-01 Terrain Display Functions

34-46-01-03-01A One Inoperative

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

OPERATIONS NOTE

1. The GND PROX SYS advisory message may be displayed.

34-46-01 Ground Proximity Warning System (GPWS)

34-46-01-03 Terrain Awareness Function

34-46-01-03-01 Terrain Display Functions

34-46-01-03-01B Both Inoperative

Interval	Installed	Required	Procedure
B	2	0	**(P)**

OPERATIONS NOTE

1. The GND PROX SYS advisory message may be displayed.
2. AUTOTILT FAIL will be annunciated on the ND. The airplane must also be dispatched using MEL Item 34-43-01-02.

TJR to TJW, TKK to TKR, TKU to TKZ

34-51-01 VOR Navigation Systems

34-51-01A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative.

34-51-01 VOR Navigation Systems

34-51-01B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

Both may be inoperative provided:

a. Operations do not require VOR for position update.

34-53-01 ATC Transponder/Automatic Altitude Reporting Systems

34-53-01A One Inoperative

Interval	Installed	Required	Procedure
D	2	1	**(P)**

One may be inoperative.

34-53-01 ATC Transponder/Automatic Altitude Reporting Systems

34-53-01B Both Inoperative

Interval	Installed	Required	Procedure
B	2	0	**(P) (MV)**

Both may be inoperative provided:

a. Enroute operations do not require its use.

b. Flight is not dispatched for RVSM operations.

c. Prior to flight, approval is obtained from ATC facilities having jurisdiction over the planned route of flight.

34-53-01 ATC Transponder/Automatic Altitude Reporting Systems

34-53-01-02 ADS-B Squitter Transmissions

34-53-01-02-01 Enroute Operations Require Use

34-53-01-02-01A One Inoperative

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

One may be inoperative provided:

a. Transponder on the operative side is selected.

OPERATIONS (O)

1. Select transponder to the operative side.

34-53-01 **ATC Transponder/Automatic Altitude Reporting Systems**

34-53-01-02 **ADS-B Squitter Transmissions**

34-53-01-02-01 **Enroute Operations Require Use**

34-53-01-02-01B **Both Inoperative**

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

Both may be inoperative provided:

a. ATC in concerned FIR is notified before flight.

b. Voice or datalink communication is used for position reporting.

Notes: 1. Flight may be limited to FL290.

2. Additional horizontal aircraft separations may be imposed.

OPERATIONS (O)

1. Use voice or datalink communication for position reporting.

34-53-01 **ATC Transponder/Automatic Altitude Reporting Systems**

34-53-01-02 **ADS-B Squitter Transmissions**

34-53-01-02-02 **Enroute Operations Do Not Require Use**

Interval	Installed	Required	Procedure
D	2	0	**(P)**

May be inoperative provided:

a. Enroute operations do not require its use.

34-55-01 Distance Measuring Equipment (DME)

34-55-01A One Inoperative

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative.

34-55-01 Distance Measuring Equipment (DME)

34-55-01B Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

Both may be inoperative provided:

a. Operations do not require DME for position update.

b. For dispatching for RNAV 5, RNAV 2 or RNAV 1 operations, one GPS and one FMCS operate normally.

34-57-01 ADF Systems

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

Both may be inoperative provided:

a. Operations do not require use.

34-58-01 Global Positioning Systems

34-58-01A Both Inoperative

Interval	Installed	Required	Procedure
C	2	0	**(P) (MV)**

Both may be inoperative provided:

a. SAARU operates normally.

b. For dispatching for RNAV 5 operations, one DME operates normally.

c. For dispatching for RNAV 2 or RNAV 1 operations, one DME operates normally and DME/DME position update is allowed in the concerned airspace.

d. Flight is not dispatched for RNP 4, RNP 2, RNP 1 and RNP APCH operations.

Note: The airplane must also be dispatched using MEL Item 34-53-01-02.

MAINTENANCE NOTE

1. For both GPS inoperative and AIMS power is interrupted, UTC is lost and the AIMS time function will reset to midnight.

OPERATIONS NOTE

1. For RNAV 10 operations, flight time is limited to the greater of:
   A. 18 hours from ADIRU ground alignment.
   B. 5.7 hours from last FMC position update.
2. The NAV UNABLE RNP advisory message may be displayed during lengthy ground operations and flight crew should accomplish the associated Non-Normal Checklist.
3. The TERR POS advisory message will be displayed.
4. The RWY/POS update on the FMC-CDU TAKEOFF REF page will be active.
5. The ADS-B Out data will be inoperative.

34-58-01 Global Positioning Systems

34-58-01B One Inoperative

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Flight is not dispatched for RNP 4, RNP 2, RNP 1 and RNP APCH operations.

Note: The airplane must also be dispatched using MEL Item 34-53-01-02.

OPERATIONS NOTE

1. The associated ADS-B Out data will be inoperative.

34-61-01 Flight Management Computing Systems (FMCS)

34-61-01-01 With AIMS-1

TJA,B,C,D,G,H,TKA to TKF

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

One may be inoperative provided

a. Remaining FMC is verified to operate normally.

b. Flight is not dispatched for RNP 4, RNP 2, RNP 1 and RNP APCH operations.

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

MAINTENANCE (M)

1. Verify remaining FMC is operating normally by positioning the FMC selector to AUTO and verifying the FMC status and advisory messages are not displayed (AMM 34-00-00/901).

OPERATIONS NOTE

1. Flight must remain within 180 minutes of landing at a suitable airport.

34-61-01 Flight Management Computing Systems (FMCS)

34-61-01-02 With AIMS-2

TJR to TJW,TKK to TKR,TKU to TKZ

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

One may be inoperative provided

a. Remaining FMC is verified to operate normally.

b. Flight is not dispatched for RNP 4, RNP 2, RNP 1 and RNP APCH operations.

MAINTENANCE (M)

1. Verify remaining FMC is operating normally by positioning the FMC selector to AUTO and verifying the FMC status and advisory messages are not displayed (AMM 34-00-00/901).

34-61-01 Flight Management Computing Systems (FMCS)

34-61-01-03 Navigation Databases

Interval	Installed	Required	Procedure
A	2	0	**(O) (P) (MV)**

May be inoperative provided:

a. Operations do not require its use.

b. Procedures are established and used to verify status and suitability of navigation facilities used to define route of flight.

c. The ICAO Flight Plan is updated (as required) to notify ATC of the navigation equipment status of the aircraft.

d. Repair is made within 10 flight days.

e. Flight is not dispatched for any RNAV or RNP operations.

Note: There is no dispatch relief for out-of-currency or out-of-date navigation database.

OPERATIONS (O)

1. Verify navigation fixes prior to dispatch with current aeronautical charts.
2. Verify status and suitability of navigation facilities used to define route of flight using current aeronautical charts.
3. Verify approach navigation radios to be properly tuned and identified.

34-61-02 FMC Selector

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

34-61-03 Control Display Units (CDU)

34-61-03-01 Control Display Units (CDU)

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

Center CDU may be inoperative.

Note: Any function that operates normally may be used.

MAINTENANCE NOTE

1. The left, center and right CDUs are fully interchangeable.

OPERATIONS (O)

1. The center CDU is the only CDU that provides access to the Cabin Interphone System. Use the flight deck handset to access the Cabin Interphone System.

34-61-03 Control Display Units (CDU)

34-61-03-01 Control Display Units (CDU)

34-61-03-01-01 DSPY, MSG, OFST and EXEC Lights

Interval	Installed	Required	Procedure
C	12	0	**(P)**

34-61-03 Control Display Units (CDU)

34-61-03-01 Control Display Units (CDU)

34-61-03-01-02 Line Select Lights, Function Lights, Execute Lights, Alpha/Numeric Lights and Miscellaneous Key Lights

Interval	Installed	Required	Procedure
C	–	0	**(P)**

OXYGEN

35-11-01 Crew Oxygen System

35-11-01-01 Crew Oxygen Pressure Indication System

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

May be inoperative provided:

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

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

MAINTENANCE (M)

Verify sufficient crew oxygen supply and oxygen shutoff valve(s) open (AMM 35-00-00/901) .

1. Gain access to the area outboard and above the nose landing gear wheel well, on the left side of the airplane in the Main Equipment Center.
2. Verify that the crew oxygen pressure shown on the gauge of the crew oxygen cylinder(s) is above the minimum required for dispatch.
3. Verify that the crew oxygen cylinder shutoff valve(s) is open.

35-11-01 Crew Oxygen System

35-11-01-01 Crew Oxygen Pressure Indication System

35-11-01-01-01 Overboard Discharge Indicator Disc

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

May be damage or missing.

35-11-01 Crew Oxygen System

35-11-01-02 Crew Oxygen Solenoid Bleed Valve

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

May be inoperative provided:

a. Solenoid bleed valve is deactivated closed.

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

MAINTENANCE (M)

Deactivate the solenoid bleed valve closed and verify that the crew oxygen shutoff valve(s) is open (AMM 35-00-00/901) .

1. Deactivate the solenoid valve in the closed position.
   A. Open the OXY PRESS IND circuit breaker on the P210 panel.
   B. Disconnect, cap and stow the electrical connector DM 35445 from the solenoid bleed valve. The valve is located on the lower left side of the Main Equipment Center, below and forward of the third step of the walkway.
   C. Close the OXY PRESS IND circuit breaker.
   D. Verify solenoid bleed valve is in the closed position and crew oxygen cylinder shutoff valve(s) is open.
      1) Position the Reset/Test slide lever on a crew oxygen mask to TEST.
      2) Push the Emergency/Test selector (red button) on the crew oxygen mask for 10 seconds.
      3) Observe that the crew oxygen pressure displayed on the status page does not decrease.

35-21-01 Passenger Oxygen System (Chemical or Gaseous)

Interval	Installed	Required	Procedure
B	1	0	**(O) (P) (MV)**

May be inoperative provided:

a. Flight is not conducted where the minimum enroute altitude is above 13,000 ft MSL.

b. Flight remains at or below FL 250.

c. Portable oxygen units are available for 10% of the passengers.

d. Both packs operate normally.

e. Pressurization system operates normally.

f. Both engine bleed systems operate normally.

g. Passengers are appropriately briefed.

MAINTENANCE NOTE

1. For a pack to be operating normally, certain items associated with that pack system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For the pressurization system to be operating normally, the following items associated with the pressurization system must be operative:

MEL Item	Associated Status Message
21-31-01	CABIN ALT AUTO L or R
21-31-02	None
21-31-03	OUTFLOW VALVE FWD or AFT
21-31-04	CPCS REMOTE SENSOR
21-31-05	None
21-31-06	None
21-31-07	None
21-31-08	None
21-32-01	None

3. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL item 36-00-01 for a lising of those items.

OPERATIONS (O)

1. Do not conduct flight where the minimum enroute altitude is above 13,000 feet MSL.
2. Maintain altitude at or below FL 250.

35-21-02 Passenger Oxygen Service Units (Passenger)

35-21-02A Seats Are Blocked

Interval	Installed	Required	Procedure
B	–	0	**(M) (P) (MV)**

May be inoperative provided:

a. Associated seats are blocked and placarded to prevent occupancy.

b. Associated flight attendant seat is considered inoperative.

c. Associated lavatory door is locked closed and placarded, INOPERATIVE - DO NOT ENTER.

Note: This provision is not intended to prohibit lavatory inspections by crewmembers.

Note: For flight attendant seat affected by the inoperative PSU, the airplane must also be dispatched using MEL Item 25-25-01.

MAINTENANCE (M)

Configure the airplane (AMM 35-00-00/901).

1. If required, tapes or ropes of conspicuous contrasting colors must be installed to block access to unusable seats prior to boarding of passengers.
2. Conspicuous signs or placards shall be placed in appropriate locations to indicate seats which are not to be occupied by passengers or flight attendants.
3. For inoperative lavatory oxygen PSU, close, lock and placard associated lavatory to prevent occupancy.

35-21-02 Passenger Oxygen Service Units (Passenger)

35-21-02B Altitude Restrictions Are Applied

Interval	Installed	Required	Procedure
B	–	0	**(O) (P) (MV)**

May be inoperative provided:

a. Flight is not conducted where the minimum enroute altitude is above 13,000 ft MSL.

b. Flight remains at or below FL 250.

c. Portable oxygen units are available for 10% of the passengers.

d. Both packs operate normally.
e. Pressurization system operates normally.
f. Both engine bleed systems operate normally.
g. Passengers are appropriately briefed.

MAINTENANCE NOTE

1. For a pack to be operating normally:
   A. Certain items associated with that pack system must be operative. See MEL Item 21-51-01 for a listing of those items.
2. For the pressurization system to be operating normally:
   A. The following items associated with the pressurization system must be operative:

MEL Item	Associated Status Message
21-31-01	CABIN ALT AUTO L or R
21-31-02	None
21-31-03	OUTFLOW VALVE FWD or AFT
21-31-04	CPCS REMOTE SENSOR
21-31-05	None
21-31-06	None
21-31-07	None
21-31-08	None
21-32-01	None

3. For an engine bleed system to be operating normally:
   A. Certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

OPERATIONS (O)

1. Do not conduct flight where the minimum altitude enroute is above 13,000 feet MSL.
2. Maintain altitude at or below FL 250.

35-21-03 Passenger Oxygen Automatic Presentation System

Interval	Installed	Required	Procedure
B	1	0	**(O) (P) (MV)**

May be inoperative provided:

a. Manual deployment system operates normally.

b. Flight remains at or below FL 300.

OPERATIONS (O)

1. Flight altitude is limited to FL 300.

TJA,B,C,D,G, H,TKA to TKF

35-21-04 Passenger Oxygen ON Light

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

35-21-05 Crew/Attendant Rest Oxygen Modules TJR to TJW, TKK to TKR, TKU to TKZ

35-21-05-01 Seat Modules

Interval	Installed	Required	Procedure
B	2	0	**(M) (P) (MV)**

May be inoperative provided:

a. Associated seat is blocked and placarded to prevent occupancy.

MAINTENANCE (M)

1. Conspicuous signs or placards shall be placed in appropriate locations to indicate seat(s) which are not to be occupied by cabin crew (AMM 35-00-00/901).

35-21-05 Crew/Attendant Rest Oxygen Modules TJR to TJW, TKK to TKR, TKU to TKZ

35-21-05-02 Bunk Modules

35-21-05-02-01 Cabin Version 77E1 TJR to TJW

Interval	Installed	Required	Procedure
B	9	–	**(M) (P) (MV)**

May be inoperative provided:

a. A conspicuous barrier strap or rope is placed across the associated bunk with a placard attached stating the bunk is not to be used.

MAINTENANCE (M)

1. Conspicuous signs or placards shall be placed in appropriate locations to indicate bunk(s) which are not to be occupied by cabin crew (AMM 35-00-00/901).

TJR to TJW, TKK to TKR, TKU to TKZ **35-21-05 Crew/Attendant Rest Oxygen Modules**

35-21-05-02 Bunk Modules

TKK to TKR, TKU to TKZ **35-21-05-02-02 Cabin Version 77B1**

Interval	Installed	Required	Procedure
B	10	–	**(M) (P) (MV)**

May be inoperative provided:

a. A conspicuous barrier strap or rope is placed across the associated bunk with a placard attached stating the bunk is not to be used.

MAINTENANCE (M)

1. Conspicuous signs or placards shall be placed in appropriate locations to indicate bunk(s) which are not to be occupied by cabin crew (AMM 35-00-00/901).

35-22-01 Passenger Oxygen Pressure Indication System (Gaseous)

TJR to TJW, TKK to TKR, TKU to TKZ

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

May be inoperative provided:

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

b. Passenger oxygen shutoff valves are verified open before each departure.

MAINTENANCE (M)

Verify there is sufficient passenger oxygen supply and that the oxygen shutoff valves are open before each departure (AMM 35-00-00/901) .

1. Gain access to the passenger oxygen cylinders located in the aft cargo compartment in the right sidewall area forward of the aft cargo door.
2. Verify that the Passenger Oxygen System average pressure reading based on the direct reading gauge on each passenger oxygen cylinder, meets the minimum required for the flight.
3. Verify that the passenger oxygen cylinder shutoff valves are open.

35-22-01 Passenger Oxygen Pressure Indication System (Gaseous)

TJR to TJW, TKK to TKR, TKU to TKZ

35-22-01-01 Overboard Discharge Indicator Disc

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

May be damaged or missing.

35-31-01 Portable Oxygen Dispensing Units (or Equivalent) (Bottle and Mask)

TJA,B,C,D,G,H

35-31-01-01 Cabin Version 7724

Interval	Installed	Required	Procedure
C	20	13	**(M) (P)**

May be unserviceable or missing provided:

a. Required distribution of serviceable bottles is maintained throughout the airplane.

b. Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility.

c. Location placarding for the associated inoperative bottle is removed or obscured.

MAINTENANCE (M)

1. Ensure required distribution of serviceable units is maintained throughout the airplane (AMM 35-00-00/901).
2. Until inoperative units are removed from the airplane at the next available maintenance base, the inoperative units are obscured or properly stowed in a location where they will not be used by mistake.

35-31-01 Portable Oxygen Dispensing Units (or Equivalent) (Bottle and Mask)

TJR to TJW

35-31-01-02 Cabin Version 77E1

Interval	Installed	Required	Procedure
C	20	12	**(M) (P)**

May be unserviceable or missing provided:

a. Required distribution of serviceable bottles is maintained throughout the airplane.

b. Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility.

c. Location placarding for the associated inoperative bottle is removed or obscured.

MAINTENANCE (M)

1. Ensure required distribution of serviceable units is maintained throughout the airplane (AMM 35-00-00/901).
2. Until inoperative units are removed from the airplane at the next available maintenance base, the inoperative units are obscured or properly stowed in a location where they will not be used by mistake.

35-31-01 Portable Oxygen Dispensing Units (or Equivalent) (Bottle and Mask)

35-31-01-03 Cabin Version 7732 TKA to TKF

Interval	Installed	Required	Procedure
C	21	15	**(M) (P)**

May be unserviceable or missing provided:

a. Required distribution of serviceable bottles is maintained throughout the airplane.

b. Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility.

c. Location placarding for the associated inoperative bottle is removed or obscured.

MAINTENANCE (M)

1. Ensure required distribution of serviceable units is maintained throughout the airplane (AMM 35-00-00/901).
2. Until inoperative units are removed from the airplane at the next available maintenance base, the inoperative units are obscured or properly stowed in a location where they will not be used by mistake.

35-31-01 Portable Oxygen Dispensing Units (or Equivalent) (Bottle and Mask)

35-31-01-04 Cabin Version 77B1 TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
C	18	14	**(M) (P)**

May be unserviceable or missing provided:

a. Required distribution of serviceable bottles is maintained throughout the airplane.

b. Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility.

c. Location placarding for the associated inoperative bottle is removed or obscured.

MAINTENANCE (M)

1. Ensure required distribution of serviceable units is maintained throughout the airplane (AMM 35-00-00/901).
2. Until inoperative units are removed from the airplane at the next available maintenance base, the inoperative units are obscured or properly stowed in a location where they will not be used by mistake.

35-31-02 Protective Breathing Equipment (PBE)

35-31-02-01 Protective Breathing Equipment (PBE) TJA,B,C,D,G,H

Interval	Installed	Required	Procedure
D	7	5	**(P)**

One may be inoperative or removed provided:

a. One is available in flight deck.
b. One PBE is available at each location for Halon extinguisher.
c. One in the stowage RH side aft of aft cabin.

35-31-02 Protective Breathing Equipment (PBE)

35-31-02-02 Protective Breathing Equipment (PBE) TJR to TJW

Interval	Installed	Required	Procedure
D	16	8	**(P)**

May be inoperative or removed provided:

a. One is available in flight deck.
b. One PBE is available at each location for Halon extinguisher.
c. One PBE is in the stowage RH side fwd of door 4R.
d. One PBE is available in OFCR.
e. One PBE is available in OFAR.

35-31-02 Protective Breathing Equipment (PBE)

35-31-02-03 Protective Breathing Equipment (PBE) TKA to TKF

Interval	Installed	Required	Procedure
D	7	6	**(P)**

One may be inoperative or removed provided:

a. One is available in flight deck.
b. One PBE is available at each location for Halon extinguisher.

c. One is located next to water extinguisher in the stowage RH side aft of fwd cabin (station 2R) or in the stowage RH side aft of mid-aft cabin (station 4R).

35-31-02 Protective Breathing Equipment (PBE)

TKK to TKR, TKU to TKZ

35-31-02-04 Protective Breathing Equipment (PBE)

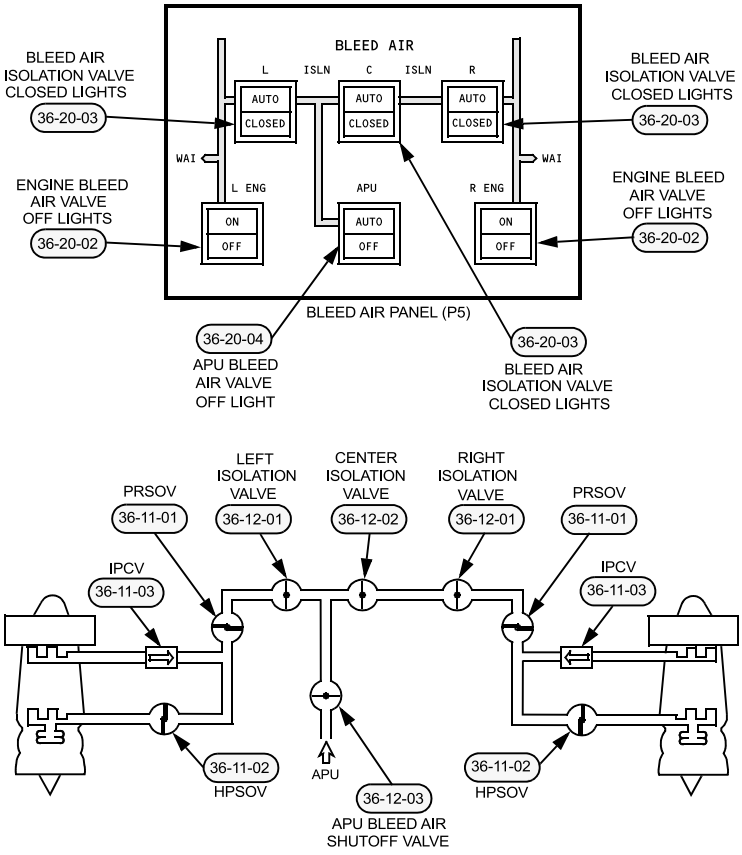
Interval	Installed	Required	Procedure
C	15	10	**(P)**

One may be inoperative or removed provided:

a. one is available in flight deck.
b. One PBE is available at each location for Halon extinguisher.
c. One PBE is available in OFCR.
d. One PBE is available in OFAR.

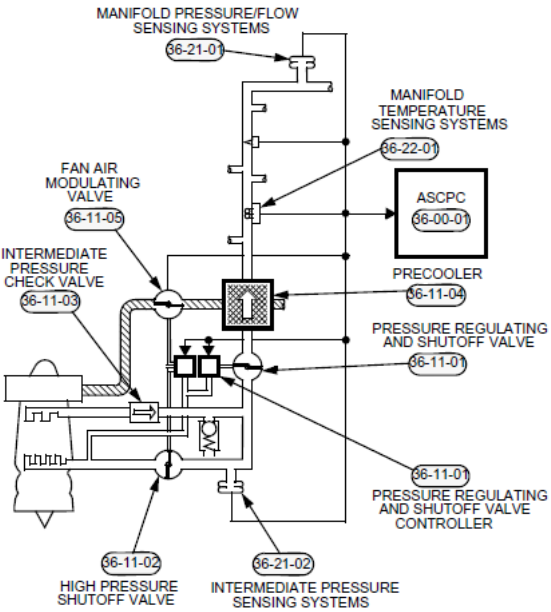
PNEUMATIC

General Locations



AIR SUPPLY SYSTEM

ENGINE AIR SUPPLY SYSTEM



AIR SYNOPTIC DISPLAY
36-20-01

36-00-01 Air Supply and Cabin Pressure Controllers (ASCPC)

36-00-01-01 Primary (Digital) Controllers

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

Right Primary ASCPC may be inoperative deactivated provided:

a. Both ASCPC backup (analog) controllers are verified to operate normally.

b. Both right CTC channels are verified to operate normally once each flight day.

c. Left engine bleed system operates normally.

d. Center system hydraulic demand pump on left side operates normally.

e. Right isolation valve indications are considered inoperative.

f. APU bleed air shutoff valve indications are considered inoperative.

g. Appropriate performance adjustments are applied.

Note: 1. The airplane must also be dispatched using MEL Item 73-21-01.

2. The airplane must also be dispatched using MEL Item 36-12-01.

3. The airplane must also be dispatched using MEL Item 36-12-03.

4. The airplane must also be dispatched using MEL Item 21-31-01.

MAINTENANCE (M)

Notes: 1. The left and right ASCPCs are interchangeable.

2. For an engine bleed system to be operating normally, the following items associated with that system must be operative.

MEL Item	Associated Status Message
36-00-01	ASCP PRIMARY CTRL L or R
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-11-04	None
36-11-05	BLEED FAMV L or R
36-21-01	MAN PRESS SENSOR L or R
36-21-02	BLEED PRESS SENSOR L or R
36-22-01	BLEED TEMP SENSOR L or R

Verify both ASCPC backup controllers operate normally, and verify both associated Cabin Temperature Controllers (CTC) channels operate normally once each flight day (AMM 36-00-00/901).

1. Verify (one at a time) that both ASCPC backup (analog) controllers operate normally.
   A. Verify the L ASCPC backup (analog) controller:
      1) Start left engine (AMM 71-00-00/201).
      2) Shutdown the APU if running or disconnect ground air cart if connected.
      3) Open the P310 panel AIR SPLY L PRI and AIR SPLY L SOL circuit breakers.
      4) Verify normal operation of the L ASCPC backup (analog) controller.
         a. Position the BLEED AIR Panel (P5) L ENG Bleed switch OFF and confirm that the L PACK OFF light illuminates.
         b. Position the BLEED AIR Panel (P5) L ENG Bleed switch ON and confirm that the L PACK OFF light extinguishes.
      5) Shut down left engine (AMM 71-00-00/201).
      6) Close the P310 panel AIR SPLY L PRI and AIR SPLY L SOL circuit breakers.
   B. Verify the R ASCPC backup (analog) controller:
      1) Start right engine (AMM 71-00-00/201).
      2) Shutdown the APU if running or disconnect ground cart if connected.
      3) Open the P210 panel AIR SPLY R PRI and AIR SPLY R SOL circuit breakers.
      4) Open the P310 panel AIR SPLY R SEC circuit breaker.
      5) Verify normal operation of the R ASCPC backup (analog) controller.
         a. Position the BLEED AIR Panel (P5) R ENG Bleed switch OFF and confirm that the R PACK OFF light illuminates.
         b. Position the BLEED AIR Panel (P5) R ENG Bleed switch ON and confirm that the R PACK OFF light extinguishes.
      6) Shut down right engine (AMM 71-00-00/201).
      7) Close the P210 panel AIR SPLY R PRI and AIR SPLY R SOL circuit breakers.
      8) Close the P310 panel AIR SPLY R SEC circuit breaker.
2. Deactivate the R ASCPC primary controller.

DELETION

A. Open and collar the P210 panel AIR SPLY R PRI and AIR SPLY R SOL circuit breakers.

B. Open and collar the P310 panel AIR SPLY R SEC circuit breaker.

Note: The CABIN ALT AUTO R status message will be displayed.

3. Verify that both associated CTC channels operate normally once each flight day.

Note: If both channels of the associated CTC do not operate normally, the associated pack may be considered inoperative and the airplane dispatched using MEL Item 21-51-01.

A. Supply electrical power on the airplane (AMM 24-22-00/201).

B. Remove pneumatic power from the airplane (AMM 36-00-00/201).

C. Position associated Air Conditioning panel (P5) PACK switch OFF.

D. For the R ASCPC primary controller inoperative:

1) Verify the left CTC channel 1 operates normally.

a. Open the P110 panel L CTC CH 2 (AC) and L CTC CH 2 (DC) circuit breakers.

b. Wait ten (10) seconds.

c. Confirm CABIN TEMP CTRL L status message is not displayed.

d. Close the P110 panel L CTC CH 2 (AC) and L CTC CH 2 (DC) circuit breakers.

2) Verify the left CTC channel 2 operates normally.

a. Open the P110 panel L CTC CH 1 (AC) and L CTC CH 1 (DC) circuit breakers.

b. Wait ten (10) seconds.

c. Confirm CABIN TEMP CTRL R status message is not displayed.

d. Close the P110 panel L CTC CH 1 (AC) and L CTC CH 1 (DC) circuit breakers.

DELETION

E. Position associated PACK switch AUTO.

OPERATIONS (O)

Notes: 1. For APU-to-Pack takeoff function installed, the APU-to-Pack takeoff Supplementary Procedure is not allowed. TKK to TKR, TKU to TKZ

2. With the right ASCPC inoperative, indications for the APU bleed valve and the right isolation valve will be invalid.

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
1,497 kg	1,089 kg
2,313 kg	1,089 kg
1,497 kg	1,089 kg
4,854 kg	4,627 kg

-200
-200ER
-300
-300ER

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5%.
3. For ETOPS flight planning:
   A. Increase the ETOPS engine inoperative critical fuel reserves.

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF
TKK to TKR,
TKU to TKZ

      1) By 0.6%, or by 1.8% when dispatching into known or forecast icing conditions.
      2) By 0.9%, or by 1.9% when dispatching into known or forecast icing conditions.
4. The AIR synoptic may display incomplete information or some information may be missing. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
5. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative ASCP controller OFF.
      2) Position WING ANTI-ICE selector to ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative ASCP controller ON.
6. If an engine or engine bleed system fails enroute:
   A. Position the associated ENG Bleed switch OFF.

36-11-01 Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)

36-11-01-01 Without Single Pack/Bleed Enhancement

TJA,B,C,D

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

One valve (PRSOV) and/or the associated controller (PRSOVC) may be inoperative provided:

a. Associated PRSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Associated engine bleed air switch remains OFF.
d. Left and right bleed isolation systems operate normally.
e. Center bleed isolation system operates normally.
f. Both packs operate normally.
g. Both outflow valves operate normally.
h. Airplane remains at or below FL 350.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).

4. Lock the PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,903 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Flight must remain at or below FL 350.
4. Position associated ENG Bleed air switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

5. For takeoff:
   A. Use the APU as air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
6. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).

5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

7. Prior to landing:

A. Set the APU as a standby air source.

1) Position APU bleed air switch AUTO.

2) Start the APU if it is not running.

3) Position L ISLN and R ISLN switches AUTO.

4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-01 Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)

36-11-01-02 -200/-200ER With Single Pack/Bleed Enhancement

TJG,H, TJR to TJW

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

One valve (PRSOV) and/or the associated controller (PRSOVC) may be inoperative provided:

a. Associated PRSOV is locked closed.

b. Opposite engine bleed system operates normally.

c. Associated engine bleed air switch remains OFF.

d. Left and right bleed isolation systems operate normally.

e. Center bleed isolation system operates normally.

f. Both packs operate normally.

g. Both outflow valves operate normally.

h. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.

i. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,903 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed air switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
4. For takeoff:
   A. Use the APU as air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220:

1) Position APU bleed air switch AUTO.
2) Start the APU if it is not running.
3) Position both ENG Bleed switches OFF.
4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

6. Prior to landing:
   A. Set the APU as a standby air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-01 Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)

36-11-01-04 -300 With Single Pack/Bleed Enhancement TKA to TKF

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

One valve (PRSOV) and/or the associated controller (PRSOVC) may be inoperative provided:

a. Associated PRSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Associated engine bleed air switch remains OFF.
d. Left and right bleed isolation systems operate normally.
e. Center bleed isolation system operates normally.
f. Both packs operate normally.
g. Both outflow valves operate normally.
h. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
i. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
3,175 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed air switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
4. For takeoff:
   A. Use the APU as air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:

a. Position L ISLN and R ISLN switches AUTO.
b. Position Wing Anti-Ice switch AUTO.
c. Configure the APU as required.

5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
6. Prior to landing:
   A. Set the APU as a standby air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-01 Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)

36-11-01-05 -300ER

-300ER

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

One valve (PRSOV) and/or the associated controller (PRSOVC) may be inoperative provided:

a. Associated PRSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Associated engine bleed air switch remains OFF.
d. Left and right bleed isolation systems operate normally.
e. Center bleed isolation system operates normally.
f. Both packs operate normally.
g. Both outflow valves operate normally.

h. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.

i. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
5. Lock the PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
6. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
7. Activate the thrust reverser (AMM 78-31-00/201).
8. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

Note: For the APU-to-Pack takeoff function installed, the APU-to-Pack takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
5,262 kg	2,812 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed air switch OFF for the inoperative system.

Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
6. Prior to landing:
   A. Set the APU as a standby air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-01 **Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)**

36-11-01-07 **ENG Bleed Air Switch Lights**

36-11-01-07-01 **OFF Lights**

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

36-11-01 **Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)**

36-11-01-07 **ENG Bleed Air Switch Lights**

36-11-01-07-02 **ON Lights**

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

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-01 Without Single Pack/Bleed Enhancement TJA,B,C,D

36-11-02-01A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Both outflow valves operate normally.
d. Airplane remains at or below FL 350.
e. Associated engine bleed air is cycled OFF, then ON at 55% N1 or greater before takeoff.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
3. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
4. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
5. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

Notes: 1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.
3. For an Engine Crossbleed Start supplementary procedure conducted, use the engine with the operative HPSOV as the operating engine.

1. Flight must remain at or below FL 350.
2. After engine start:
   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.
3. Before takeoff, at 55% N1 or greater:
   A. Select the associated ENG Bleed switch OFF, then ON.
4. In the event of an engine bleed failure on the opposite engine:
   A. Maintain a minimum of 76% N1 on the engine with the inoperative HPSOV when the associated Engine Bleed switch is selected ON.
5. Prior to landing:
   A. If the APU is available:
      1) Position APU Bleed switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of an engine bleed failure on the opposite engine:
         a. Maintain a minimum of 76% N1 on the engine with the inoperative HPSOV when the associated Engine Bleed switch is selected ON.
   B. If the APU is not available:
      1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON.

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-01 Without Single Pack/Bleed Enhancement TJA,B,C,D

36-11-02-01B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. Airplane remains at or below FL 350.
j. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
k. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and associated Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).

4. Lock the HPSOV and PRSOV in the closed positions by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverse (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,903 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Flight must remain at or below FL 350.
4. Position associated ENG Bleed switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
5. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
6. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).

5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

7. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-02 -200/-200ER With single Pack/Bleed Enhancement TJG,H, TJR to TJW

36-11-02-02A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Both outflow valves operate normally.
d. Associated engine bleed air is cycled OFF, then ON at 55% N1 or greater before takeoff.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
3. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
4. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).

5. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

Notes: 1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

3. For an Engine Crossbleed Start supplementary procedure conducted, use the engine with the operative HPSOV as the operating engine.

1. After engine start:
   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.

2. Before takeoff, at 55% N1 or greater:
   A. Select the associated ENG Bleed switch OFF, then ON.

3. In the event of an engine bleed failure on the opposite engine:
   A. Maintain a minimum of 76% N1 on the engine with the inoperative HPSOV when the associated Engine Bleed switch is selected ON.

4. Prior to landing:
   A. If the APU is available:
      1) Position APU Bleed switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

   B. If the APU is not available:
      1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON at 55% N1 or greater.

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-02 -200/-200ER With single Pack/Bleed Enhancement TJG,H, TJR to TJW

36-11-02-02B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and associated Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).

4. Lock the HPSOV and PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,903 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-04 -300 With Single Pack/Bleed Enhancement TKA to TKF

36-11-02-04A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Both outflow valves operate normally.
d. Associated engine bleed air is cycled OFF, then ON at 55% N1 or greater before takeoff.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
3. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
4. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
5. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

Notes: 1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

3. For an Engine Crossbleed Start supplementary procedure conducted, use the engine with the operative HPSOV as the operating engine.

1. After engine start:
   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.

2. Before takeoff, at 55% N1 or greater:
   A. Select the associated ENG Bleed switch OFF, then ON.

3. In the event of an engine bleed failure on the opposite engine:
   A. Maintain a minimum of 76% N1 on the engine with the inoperative HPSOV when the associated Engine Bleed switch is selected ON.

4. Prior to landing:
   A. If the APU is available:
      1) Position APU Bleed switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

   B. If the APU is not available:
      1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON at 55% N1 or greater.

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-04 -300 With Single Pack/Bleed Enhancement TKA to TKF

36-11-02-04B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and associated Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).

4. Lock the HPSOV and PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
3,175 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-05 -300ER -300ER

36-11-02-05A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Both outflow valves operate normally.
d. Associated engine bleed air is cycled OFF, then ON at 55% N1 or greater before takeoff.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).

6. Activate the thrust reverser (AMM 78-31-00/201).
7. Activate the leading edge slats (AMM 27-81-00/201).
8. With both engines shutdown, position associated flight deck Bleed Air panel (P11) ENG bleed switch ON to OFF and back to ON.

OPERATIONS (O)

Notes:
1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.
2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.
3. For an Engine Crossbleed Start supplementary procedure conducted, use the engine with the operative HPSOV as the operating engine.
4. For the APU-to-Pack takeoff function installed, the APU-to-Pack takeoff Supplementary Procedure is not allowed.

1. After engine start:
   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.
2. Before takeoff, at 55% N1 or greater:
   A. Select the associated ENG Bleed switch OFF, then ON.
3. In the event of an engine bleed failure on the opposite engine:
   A. Maintain a minimum of 76% N1 on the engine with the inoperative HPSOV when the associated Engine Bleed switch is selected ON.
4. Prior to landing:
   A. If the APU is available:
      1) Position APU Bleed switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.
   B. If the APU is not available:

1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON at 55% N1 or greater.

36-11-02 High Pressure Shutoff Valves (HPSOV)

36-11-02-05 -300ER -300ER

36-11-02-05B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and associated Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).

2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
5. Lock the HPSOV and PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valves.
6. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
7. Activate the thrust reverser (AMM 78-31-00/201).
8. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

Note: For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
5,262 kg	2,812 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:

A. Use the APU to maintain cabin pressurization at or below FL 220.
   1) Position APU bleed air switch AUTO.
   2) Start the APU if it is not running.
   3) Position both ENG Bleed switches OFF.
   4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
   5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-03 Intermediate Pressure Check Valves (IPCV)

TJA,B,C,D **36-11-03-01 Without Single Pack/Bleed Enhancement**

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative open provided:

a. Associated HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. Airplane remains at or below FL 350.
j. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
k. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Iitem 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).

4. Lock the HPSOV and PRSOV in the closed positions by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,903 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Flight must remain at or below FL 350.
4. Position associated ENG Bleed air switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.
5. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up.
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
6. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position APU bleed air switch AUTO.
      5) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).

6) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

7. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-03 Intermediate Pressure Check Valves (IPCV)

TJG,H, TJR to TJW **36-11-03-02 -200/-200ER With Single Pack/Bleed Enhancement**

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative open provided:

a. Associated HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the HPSOV and PRSOV in the closed positions by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,093 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed air switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message may be displayed when idle thrust is selected in flight.
4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.

1) Position APU bleed air switch AUTO.
2) Start the APU if it is not running.
3) Position both ENG Bleed switches OFF.
4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-03 Intermediate Pressure Check Valves (IPCV)

TKA to TKF

36-11-03-04 -300 With Single Pack/Bleed Enhancement

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative open provided:

a. Associated HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the HPSOV and PRSOV in the closed positions by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
3,175 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed air switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message may be displayed when idle thrust is selected in flight.
4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.

5) After takeoff with flaps up:
   a. Position L ISLN and R ISLN switches AUTO.
   b. Position Wing Anti-Ice switch AUTO.
   c. Configure the APU as required.

5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-03 Intermediate Pressure Check Valves (IPCV)

-300ER **36-11-03-05 -300ER**

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

One may be inoperative open provided:

a. Associated HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.

i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.

j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
5. Lock the HPSOV and PRSOV in the closed positions by following the MANUAL LOCKING CLOSED instructions placard on the valves.
6. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
7. Activate the thrust reverser (AMM 78-31-00/201).
8. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

Note: For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
5,262 kg	2,812 kg

2. For ETOPS flight planning:

A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.

3. Position associated ENG Bleed air switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message may be displayed when idle thrust is selected in flight.

4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-04 Precoolers

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

Airplane may be operated with damage to one precooler provided:

a. It is verified that precooler airflow is not completely blocked.

b. Precooler bleed air leakage is verified within normal limits.

c. Opposite engine bleed system operates normally.

MAINTENANCE (M)

Notes: 1. This MEL item allows dispatch with damage to one precooler that reduces cooling airflow. If cooling airflow is completely blocked, the associated engine bleed system is considered inoperative and the airplane must be dispatched using MEL Item 36-11-01.

2. If precooler bleed leakage is not within normal limits the airplane must be repaired.

3. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

The damaged precooler must be inspected to verify that:

1. Precooler airflow is not completely blocked (AMM 36-00-00/901).
2. Precooler leakage remains within normal limits (AMM 36-00-00/901).

OPERATIONS (O)

1. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
2. In the event of inflight failure of the opposite engine or engine bleed air system:
   A. The air demand may exceed the capability of the engine with damaged precooler, which may result in bleed system shutdown. The APU can be used to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice is not available for remainder of flight).

36-11-05 Fan Air Modulation Valves (FAMV)

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

One may be inoperative provided:

a. Valve is locked full open.
b. Opposite engine bleed system operates normally.
c. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative Fan Air Modulating Valve (FAMV) in the open position (AMM 36-00-00/901).

TKK to TKR, TKU to TKZ
1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Gain access to the FAMV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the FAMV in the open position by following the MANUAL LOCKING instructions placard on the valve.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the associated thrust reverser (AMM 78-31-00/201).

TKK to TKR, TKU to TKZ
7. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

Note: Aft cabin temperature control may be degraded when dispatching with the right FAMV locked full open.

1. Reduce performance limited weights by the appropriate adjustments.

	Takeoff & Landing	Enroute Climb
-200	1,497 kg	1,089 kg
-200ER	2,313 kg	1,089 kg
-300	1,497 kg	1,089 kg

Takeoff & Landing	Enroute Climb
4,854 kg	4,627 kg

-300ER

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph

2. Increase flight planning fuel by 0.5%.
3. For ETOPS flight planning:
   A. Increase the ETOPS engine inoperative critical fuel reserves.
      1) By 0.6%, or by 1.8% when dispatching into known or forecast icing conditions.

TKK to TKR, TKU to TKZ

      2) By 0.9%, or by 1.9% when dispatching into known or forecast icing conditions.

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

4. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice is required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative FAMV OFF.

         Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected in flight.

      2) Position WING ANTI-ICE selector to ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative FAMV ON.

36-12-01 Left and Right Isolation Systems (Valve and/or Indication)

36-12-01A Valve Locked Closed

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

One may be inoperative provided:

a. Valve is locked closed after engine start.
b. Associated valve switch remains in the CLOSED position.
c. Center bleed isolation system operates normally.
d. Both engine bleed systems operate normally.
e. Isolation valve on opposite side is selected CLOSED for takeoff and landing, and selected AUTO with flaps up.
f. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.

MAINTENANCE (M)

Lock the inoperative isolation valve in the closed position after engine start (AMM 36-00-00/901).

1. Gain access to the inoperative isolation valve by opening the appropriate Blowout Door (195QL for left valve or 196QR for right valve).
2. Lock the isolation valve in the closed position by following the MANUAL LOCK instructions placard on the valve.

   Note: APU or crossbleed air is not available for starting the associated engine when the L or R isolation valve is locked closed. The associated engine must be started and left running before locking the valve closed (AMM 71-00-00/201).
3. Position associated Bleed Air Panel (P5) Bleed ISLN switch CLOSED.
4. Close the opened Blowout Door.

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Notes: 1. For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

2. APU or crossbleed air is not available for starting the associated engine when the L or R isolation valve is locked closed.

3. The flight deck Air Synoptic may display an incorrect or missing valve position.

1. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
2. For takeoff and landing:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) After takeoff is completed, position the operative ISLN switch AUTO (inoperative ISLN switch remains CLOSED) and configure the APU as required.

36-12-01 Left and Right Isolation Systems (Valve and/or Indication)

36-12-01B Valve Locked Open

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

One may be inoperative locked open provided:

a. Both center system hydraulic demand pumps operate normally.
b. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Lock the inoperative isolation valve in the open position (AMM 36-00-00/901).

1. Gain access to the inoperative isolation valve by opening the appropriate Blowout Door (195QL for left valve or 196QR for right valve).
2. Lock the isolation valve in the open position by following the MANUAL LOCK instructions placard on the valve.
3. Position associated Bleed Air Panel (P5) Bleed ISLN switch AUTO.
4. Close the opened Blowout Door.

OPERATIONS (O)

Notes: 1. The flight deck Air Synoptic may display an incorrect or missing valve position.

2. For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed. TKK to TKR, TKU to TKZ

1. Reduce performance limited weights by the appropriate adjustments.

-200,-200ER
-300
-300ER

Takeoff Climb	Takeoff Runway/Obstacle
636 kg	4,355 kg
181 kg	1,678 kg
771 kg	4,355 kg

2. Position C ISLN switch CLOSED for takeoff and landing.

36-12-01 Left and Right Isolation Systems (Valve and/or Indication)

36-12-01-01 ISLN Switch Lights

36-12-01-01-01 CLOSED Lights

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

36-12-01 Left and Right Isolation Systems (Valve and/or Indication)

36-12-01-01 ISLN Switch Lights

36-12-01-01-02 AUTO Lights

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

36-12-02 Center Isolation System (Valve and/or Indication)

36-12-02A Valve Locked Closed

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Valve is locked closed after engine start.
b. Both center system hydraulic demand pumps operate normally.
c. Left and right isolation valves operate normally.
d. Both engine bleed systems operate normally.
e. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Lock the center isolation valve in the closed position after engine start (AMM 36-00-00/901).

1. Gain access to center isolation valve by opening Bleed Air Valve Door 196NR.
2. Lock the isolation valve in the closed position by following the MANUAL LOCK instructions placard on the valve.

   Note: APU or crossbleed air is not available for starting the right engine when center isolation valve is locked closed. The right engine must be started and left running before locking the valve closed (AMM 71-00-00/201).
3. Position Bleed Air Panel (P5) Bleed C ISLN switch CLOSED.
4. Close Bleed Air Valve Door 196NR.

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Notes: 1. For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

2. APU or crossbleed air is not available for starting the right engine when the center isolation valve is locked closed.
3. The flight deck Air Synoptic may display an incorrect or missing valve position.

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff Climb	Takeoff Runway/Obstacle
636 kg	4,355 kg
181 kg	1,678 kg
771 kg	4,355 kg

-200,-200ER

-300

-300ER

2. For ETOPS flight planning:

   A. Increase the engine inoperative Critical Fuel Reserves by an additional 1.3% when dispatching into known or forecast icing conditions.

36-12-02 Center Isolation System (Valve and/or Indication)

36-12-02B Valve Locked Open

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

May be inoperative provided:

a. Valve is locked open.

b. Left and right isolation valves are selected CLOSED for takeoff and landing.

c. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.

d. Left or right isolation valve is selected AUTO with flaps up.

MAINTENANCE (M)

Lock the center isolation valve in the open position (AMM 36-00-00/901).

1. Gain access to center isolation valve by opening Bleed Air Valve Door 196NR.
2. Lock the isolation valve in the open position by following the MANUAL LOCK instructions placard on the valve.
3. Position Bleed Air Panel (P5) Bleed C ISLN switch AUTO.
4. Close Bleed Air Valve Door 196NR.

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Notes: 1. For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

2. The flight deck Air Synoptic may display an incorrect or missing valve position.

1. For takeoff and landing:

A. Use the APU as an air source.
   1) Position APU bleed air switch AUTO.
   2) Start the APU if it is not running.
   3) Position L ISLN and R ISLN switches CLOSED.
   4) After takeoff is completed, position L ISLN or R ISLN (one) switch AUTO and configure the APU as required.

36-12-02 Center Isolation System (Valve and/or Indication)

36-12-02-01 ISLN Switch Light

36-12-02-01-01 CLOSED Light

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

36-12-02 Center Isolation System (Valve and/or Indication)

36-12-02-01 ISLN Switch Light

36-12-02-01-02 AUTO Light

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

36-12-03 APU Bleed Air Shutoff System (Valve and/or Indications)

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Other procedures do not require APU as a pneumatic source.
b. Valve is locked closed.
c. APU bleed switch remains OFF.
d. Flight remains within 180 minutes of landing at a suitable airport.

Note: APU may be used for electrical power.

MAINTENANCE (M)

Lock the APU bleed air shutoff valve in the closed position (AMM 36-00-00/901).

1. Gain access to the APU bleed air shutoff valve by opening the Controls Bay Access Door 313AL.
2. Lock the APU shutoff valve in the closed position by following the MANUAL LOCK instructions placard on the valve.
3. Position the Bleed Air Panel (P5) APU Bleed switch OFF.
4. Close the Controls Bay Access Door 313AL.

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Notes: 1. For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

2. APU may be used for electrical power, both inflight and on the ground. Pneumatic starting of the APU is not possible.

1. Dispatch is not allowed if the APU is required as a bleed air source by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU bleed air availability.

MEL Item	Associated Status Message
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R

MEL Item	Associated Status Message
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. Position APU Bleed switch OFF.

   Note: The BLEED OFF APU advisory message will be displayed.

3. The flight must remain within 180 minutes of landing at a suitable airport.

36-12-03 APU Bleed Air Shutoff System (Valve and/or Indications)

36-12-03-01 Valve Indications

36-12-03-01A APU Not Required

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Other procedures do not require use of the APU.
b. APU bleed air valve is verified to operate normally.
c. Flight remains within 180 minutes of landing at a suitable airport.

MAINTENANCE (M)

Verify that the APU bleed air shutoff valve operates normally (AMM 36-00-00/901).

1. Start the APU (AMM 49-11-00/201).
2. Remove all other pneumatic sources from the airplane.
   A. Remove ground air supply if connected.
   B. If engine(s) is running:
      1) Position Bleed Air panel (P5) ENG bleed switch OFF.
3. Position the Bleed Air Panel (P5) APU Bleed switch AUTO.
4. Gain access to the APU bleed air shutoff valve by opening the Controls Bay Access Door 313AL.
5. Observe the APU bleed air shutoff valve knob pointer and ensure the pointer indicates the valves is OPEN.
6. Position the Bleed Air Panel (P5) APU Bleed switch OFF.
7. Observe the APU bleed air shutoff valve knob pointer and ensure the pointer indicates the valve is CLOSED.

8. Close the Controls Bay Access Door 313AL.
9. Position the Bleed Air Panel (P5) APU Bleed switch AUTO.

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Notes: 1. For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

2. Flight deck APU bleed air valve indications on the overhead panel (P5), Air Synoptic and Air Supply Maintenance page may not agree with the actual status of the valve. For the APU bleed air valve commanded open during ground operations and the valve indications incorrectly indicating the valve is closed, the BLEED OFF APU advisory message may be displayed.

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability.

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The following restrictions imposed for an inoperative APU generator must be observed:
   A. The flight must remain within 180 minutes of landing at a suitable airport.
   B. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

36-12-03 APU Bleed Air Shutoff System (Valve and/or Indications)

36-12-03-01 Valve Indications

36-12-03-01B APU Bleed Not Required

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Other procedures do not require APU as a pneumatic source.
b. APU bleed air valve is verified to operate normally before each departure.
c. APU bleed switch remains OFF for flight.
d. Flight remains within 180 minutes of landing at a suitable airport.

Note: APU may be used for electrical power and for pneumatic power for ground operations only.

MAINTENANCE (M)

Verify that the APU bleed air shutoff valve operates normally before each departure (AMM 36-00-00/901).

1. Start the APU (AMM 49-11-00/201).
2. Remove all other pneumatic sources from the airplane.
   A. Remove ground air supply if connected.
   B. If engine(s) is running:
      1) Position Bleed Air panel (P5) ENG bleed switch OFF.
3. Position the Bleed Air Panel (P5) APU Bleed switch AUTO.
4. Gain access to the APU bleed air shutoff valve by opening the Controls Bay Access Door 313AL.
5. Observe the APU bleed air shutoff valve knob pointer and ensure the pointer indicates the valves is OPEN.
6. Position the Bleed Air Panel (P5) APU Bleed switch OFF.
7. Observe the APU bleed air shutoff valve knob pointer and ensure the pointer indicates the valve is CLOSED.
8. Close the Controls Bay Access Door 313AL.
9. Position the Bleed Air Panel (P5) APU Bleed switch AUTO.

OPERATIONS (O)

TKK to TKR, TKU to TKZ

Notes:
1. For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.
2. Flight deck APU bleed air valve indications on the overhead panel (P5), Air Synoptic and Air Supply Maintenance page may not agree with the actual status of the valve. For the APU bleed air valve commanded open during ground operations and the valve indications incorrectly indicating the valve is closed, the BLEED OFF APU advisory message may be displayed.
3. APU bleed air valve must be verified by maintenance to operate normally before each departure.

1. Dispatch is not allowed if the APU is required as a bleed air source by other procedures and the valve indications are inoperative. MEL dispatch procedures for the following inoperative equipment may require APU bleed air availability.

MEL Item	Associated Status Message
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. Position APU Bleed switch OFF before takeoff. APU Bleed switch remains OFF for the flight.

   Note: APU may be used for electrical power both inflight and on the ground, and as a pneumatic power source for ground operations only. Inflight pneumatic starting of the APU is not available with the APU Bleed switch OFF.

3. The flight must remain within 180 minutes of landing at a suitable airport.

36-12-03 **APU Bleed Air Shutoff System (Valve and/or Indications)**

36-12-03-02 **APU Switch Light**

36-12-03-02-01 **OFF Light**

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

36-12-03 **APU Bleed Air Shutoff System (Valve and/or Indications)**

36-12-03-02 **APU Switch Light**

36-12-03-02-02 **AUTO Light**

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

36-20-01 Air Synoptic Display

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

OPERATIONS NOTE

1. If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) 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.

36-20-02 Engine Bleed Air Valve OFF Lights

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to item 36-11-01-07-01.

36-20-03 Bleed Air Isolation Valve CLOSED Lights

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to items 36-12-01-01-01 and 36-12-02-01-01.

36-20-04 APU Bleed Air Valve OFF Light

Interval	Installed	Required	Procedure
	–	–	

Dispatch relief for this equipment moved to item 36-12-03-02-01.

36-21-01 Manifold Pressure/Flow Sensing Systems

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

One may be inoperative provided:

a. The associated pack flow control valve inlet pressure sensor operates normally.

MAINTENANCE NOTE

1. The MAN PRESS SENSOR L or R status message is displayed for an inoperative manifold pressure sensor or for an inoprative manifold flow sensor.
2. For AIMS V14 and on, the MANIFOLD SENSOR L or R status message is displayed for an inoperative manifold pressure sensor or for an inoperative manifold flow sensor.

36-21-02 Intermediate Pressure Sensing Systems

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

36-22-01 Manifold Temperature Sensing Systems

TJA,B,C,D **36-22-01-01 Without Single Pack/Bleed Enhancement**

36-22-01-01A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Associated HPSOV is locked closed.

b. Opposite engine bleed system operates normally.

c. Both outflow valves operate normally.

d. Airplane remains at or below FL 350.

e. Associated engine bleed air switch is cycled OFF, then ON at 55% N1 or greater before takeoff.

f. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
3. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
4. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
5. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

Notes: 1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the

HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
1,497 kg	1,089 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5%.
3. For ETOPS flight planning:
   A. Increase the ETOPS engine inoperative critical fuel reserves.
      1) By 0.9%, or by 1.9% when dispatching into known or forecast icing conditions.
4. Flight must remain at or below FL 350.
5. After engine start:
   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.
6. Before takeoff, at 55% N1 or greater:
   A. Select the associated ENG bleed switch OFF, then ON.
7. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor OFF.

         Note: The ENG IDLE DISAGREE advisory message will be dispatched when idle thrust is selected inflight.

2) Position WING ANTI-ICE selector to ON, then OFF as required.

3) Prior to landing, position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor ON.

8. In the event of an engine bleed failure on the engine opposite to the inoperative Bleed Temp Sensor:

A. Maintain a minimum of 76% N1 on the engine with the inoperative Bleed Temp Sensor when the associated Engine Bleed switch is selected ON.

9. Prior to landing:

A. If the APU is available:

1) Position APU Bleed switch AUTO.

2) Start the APU if it is not running.

3) Position L ISLN and R ISLN switches AUTO.

4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

B. If the APU is not available:

1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON.

36-22-01 Manifold Temperature Sensing Systems

TJA,B,C,D **36-22-01-01 Without Single Pack/Bleed Enhancement**

36-22-01-01B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Associated HPSOV is locked closed.

b. Associated PRSOV is locked closed.

c. Opposite engine bleed system operates normally.

d. Associated engine bleed air switch remains OFF.

e. Left and right bleed isolation systems operate normally.

f. Center bleed isolation system operates normally.

g. Both packs operate normally.

h. Both outflow valves operate normally.

i. Airplane remains at or below FL 350.

j. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.

k. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the HPSOV and PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,903 kg	408 kg

2. For ETOPS flight planning:

   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.

3. Flight must remain at or below FL 350.
4. Position associated ENG Bleed switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

5. For takeoff:

A. Use the APU as air source.
   1) Position APU bleed air switch AUTO.
   2) Start the APU if it is not running.
   3) Position L ISLN and R ISLN switches CLOSED.
   4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
   5) After takeoff with flaps up:
      a. Position L ISLN and R ISLN switches AUTO.
      b. Position Wing Anti-Ice switch AUTO.
      c. Configure the APU as required.

6. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

7. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-22-01 Manifold Temperature Sensing Systems

TJG,H, TJR to TJW **36-22-01-02 -200/-200ER With Single Pack/Bleed Enhancement**

36-22-01-02A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Associated HPSOV is locked closed.

b. Opposite engine bleed system operates normally.

c. Both outflow valves operate normally.

d. Associated engine bleed air switch is cycled OFF, then ON at 55% N1 or greater before takeoff.

e. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
3. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
4. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
5. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

Notes: 1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
1,497 kg	1,089 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5%.
3. For ETOPS flight planning:
   A. Increase the ETOPS engine inoperative critical fuel reserves.
      1) By 0.9%, or by 1.9% when dispatching into known or forecast icing conditions.
4. After engine start:
   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.
5. Before takeoff, at 55% N1 or greater:
   A. Select the associated ENG bleed switch OFF, then ON.
6. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor OFF.

         Note: The ENG IDLE DISAGREE advisory message will be dispatched when idle thrust is selected inflight.
      2) Position WING ANTI-ICE selector to ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor ON.
7. In the event of an engine bleed failure on the engine opposite to the inoperative Bleed Temp Sensor:
   A. Maintain a minimum of 76% N1 on the engine with the inoperative Bleed Temp Sensor when the associated Engine Bleed switch is selected ON.
8. Prior to landing:
   A. If the APU is available:
      1) Position APU Bleed switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.

4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

B. If the APU is not available:

1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON.

36-22-01 Manifold Temperature Sensing Systems

36-22-01-02 -200/-200ER With Single Pack/Bleed Enhancement TJG,H, TJR to TJW

36-22-01-02B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the HPSOV and PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
2,903 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.

3) Position both ENG Bleed switches OFF.
4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).

6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-22-01 Manifold Temperature Sensing Systems

36-22-01-04 -300 With Single Pack/Bleed Enhancement TKA to TKF

36-22-01-04A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Associated HPSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Both outflow valves operate normally.
d. Associated engine bleed air switch is cycled OFF, then ON at 55% N1 or greater before takeoff.
e. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).

2. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
3. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
4. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
5. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

Notes: 1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
1,497 kg	1,089 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5%.
3. For ETOPS flight planning:
   A. Increase the ETOPS engine inoperative critical fuel reserves.
      1) By 0.9%, or by 1.9% when dispatching into known or forecast icing conditions.
4. After engine start:
   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.
5. Before takeoff, at 55% N1 or greater:

A. Select the associated ENG bleed switch OFF, then ON.

6. Operate the wing anti-ice manually.
   A. Position WING ANTI-ICE selector OFF.
   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):
      1) Position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor OFF.

         Note: The ENG IDLE DISAGREE advisory message will be dispatched when idle thrust is selected inflight.

      2) Position WING ANTI-ICE selector to ON, then OFF as required.
      3) Prior to landing, position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor ON.
7. In the event of an engine bleed failure on the engine opposite to the inoperative Bleed Temp Sensor:
   A. Maintain a minimum of 76% N1 on the engine with the inoperative Bleed Temp Sensor when the associated Engine Bleed switch is selected ON.
8. Prior to landing:
   A. If the APU is available:
      1) Position APU Bleed switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.
   B. If the APU is not available:
      1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON.

36-22-01 Manifold Temperature Sensing Systems

36-22-01-04 -300 With Single Pack/Bleed Enhancement TKA to TKF

36-22-01-04B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.

b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.
g. Both packs operate normally.
h. Both outflow valves operate normally.
i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the HPSOV and PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valves.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).

OPERATIONS (O)

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
3,175 kg	408 kg

2. For ETOPS flight planning:
   A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.
3. Position associated ENG Bleed switch OFF for the inoperative system.

   Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-22-01 Manifold Temperature Sensing Systems

-300ER **36-22-01-05 -300ER**

36-22-01-05A Associated Engine Bleed Used

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

One may be inoperative provided:

a. Associated HPSOV is locked closed.
b. Opposite engine bleed system operates normally.
c. Both outflow valves operate normally.
d. Associated engine bleed air switch is cycled OFF, then ON at 55% N1 or greater before takeoff.
e. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Note: For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the associated High Pressure Shutoff Valve (HPSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Gain access to the HPSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
4. Lock the HPSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valve.
5. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
6. Activate the thrust reverser (AMM 78-31-00/201).
7. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

Notes: 1. Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

2. The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

3. For APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce performance limited weights by the appropriate adjustments.

Takeoff & Landing	Enroute Climb
4,854 kg	4,627 kg

Note: The enroute climb weight penalties listed above 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 on page 3.00-01-00.2 in the ENROUTE DIVERSION SPEED EFFECTS paragraph.

2. Increase flight planning fuel by 0.5%.

3. For ETOPS flight planning:

   A. Increase the ETOPS engine inoperative critical fuel reserves.

      1) By 0.6%, or by 1.8% when dispatching into known or forecast icing conditions.

4. After engine start:

   A. The BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

      Note: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.

5. Before takeoff, at 55% N1 or greater:

   A. Select the associated ENG bleed switch OFF, then ON.

6. Operate the wing anti-ice manually.

   A. Position WING ANTI-ICE selector OFF.

   B. For flaps up and wing anti-ice required (do not use during takeoff and landing):

1) Position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor OFF.

Note: The ENG IDLE DISAGREE advisory message will be dispatched when idle thrust is selected inflight.

2) Position WING ANTI-ICE selector to ON, then OFF as required.

3) Prior to landing, position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor ON.

7. In the event of an engine bleed failure on the engine opposite to the inoperative Bleed Temp Sensor:
   A. Maintain a minimum of 76% N1 on the engine with the inoperative Bleed Temp Sensor when the associated Engine Bleed switch is selected ON.
8. Prior to landing:
   A. If the APU is available:
      1) Position APU Bleed switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.
   B. If the APU is not available:
      1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON.

36-22-01 Manifold Temperature Sensing Systems

-300ER **36-22-01-05 -300ER**

36-22-01-05B Associated Engine Bleed Not Used

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

One may be inoperative provided:

a. Inoperative HPSOV is locked closed.
b. Associated PRSOV is locked closed.
c. Opposite engine bleed system operates normally.
d. Associated engine bleed air switch remains OFF.
e. Left and right bleed isolation systems operate normally.
f. Center bleed isolation system operates normally.

g. Both packs operate normally.

h. Both outflow valves operate normally.

i. APU is used as air source for center system hydraulic demand pumps for takeoff and landing.

j. Appropriate performance adjustments are applied.

Note: The airplane must also be dispatched using MEL Item 73-21-01.

MAINTENANCE (M)

Notes: 1. For a pack to be operating normally, certain items associated with that system must be operative. See MEL Item 21-51-01 for a listing of those items.

2. For an engine bleed system to be operating normally, certain items associated with that system must be operative. See MEL Item 36-00-01 for a listing of those items.

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the closed position (AMM 36-00-00/901).

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel (AMM 71-11-04/201) and thrust reverser sleeve (AMM 78-31-00/201).
5. Lock the HPSOV and PRSOV in the closed position by following the MANUAL LOCKING CLOSED instructions placard on the valves.
6. Close the opened thrust reverser sleeve (AMM 78-31-00/201) and fan cowl panel (AMM 71-11-04/201).
7. Activate the thrust reverser (AMM 78-31-00/201).
8. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

Note: For the APU-to-Pack takeoff function installed, the APU-to-Pack Takeoff Supplementary Procedure is not allowed.

1. Reduce the performance limited weights by the appropriate adjustments.

Takeoff & Landing (Packs On)	Takeoff (Packs Off)
5,262 kg	2,812 kg

2. For ETOPS flight planning:

A. Increase the engine inoperative Critical Fuel Reserves by 1.3% when dispatching into known or forecast icing conditions.

3. Position associated ENG Bleed switch OFF for the inoperative system.

Note: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

4. For takeoff:
   A. Use the APU as air source.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches CLOSED.
      4) Accomplish the BLEED LOSS WING L, R Non-Normal Checklist and do not accomplish the PACK L, R Non-Normal Checklist.
      5) After takeoff with flaps up:
         a. Position L ISLN and R ISLN switches AUTO.
         b. Position Wing Anti-Ice switch AUTO.
         c. Configure the APU as required.
5. In the event of inflight failure of the opposite engine or the engine bleed air system:
   A. Use the APU to maintain cabin pressurization at or below FL 220.
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position both ENG Bleed switches OFF.
      4) Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
      5) Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
6. Prior to landing:
   A. Use the APU as an air source:
      1) Position APU bleed air switch AUTO.
      2) Start the APU if it is not running.
      3) Position L ISLN and R ISLN switches AUTO.
      4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

WATER/WASTE

38-10-01 Potable Water Systems

38-10-01A Inoperative Components Deactivated

Interval	Installed	Required	Procedure
C	1	–	**(M) (P)**

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)

Configure the airplane (AMM 38-00-00/901).

1. Deactivate or isolate inoperative components.
2. Verify associated system components do not have leaks.

   Note: Refer to AMM or SSM for associated system components.

38-10-01 Potable Water Systems

38-10-01B System Not Used

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

May be inoperative provided:

a. System is drained.
b. The system is not serviced.

MAINTENANCE (M)

Configure the airplane (AMM 38-00-00/901).

1. Drain potable water system.
2. Ensure the potable water system is not serviced.

OPERATIONS NOTE

1. Ensure the potable water system is not serviced and accounted for in the airplane weight and balance.

38-10-01 Potable Water Systems

38-10-01-01 Potable Water Indication System

Interval	Installed	Required	Procedure
D	1	0	**(P)**

38-30-01 Lavatory Waste Systems

38-30-01A Components Deactivated

Interval	Installed	Required	Procedure
C	–	–	**(M) (P)**

Individual components may be inoperative provided:

a. Associated components are deactivated or isolated.

b. Associated system components are verified not to have leaks.

Notes: 1. Any portion of system which operates normally may be used.

2. The number of lavatories are as follows:
   - Cabin version 7724: 9 lavatories
   - Cabin version 77E1: 10 lavatories
   - Cabin version 7732: 13 lavatories
   - Cabin version 77B1: 11 lavatories

TJA,B,C,D,G,H
TJR to TJW
TKA to TKF
TKK to TKR, TKU to TKZ

MAINTENANCE (M)

Configure the airplane (AMM 38-00-00/901).

1. Deactivate or isolate inoperative components.
2. Verify associated system components do not have leaks.

38-30-01 Lavatory Waste Systems

38-30-01B Lavatory Not Used

Interval	Installed	Required	Procedure
C	–	–	**(M) (P) (MV)**

Associated lavatory system may be inoperative provided:

a. Associated components are deactivated or isolated to prevent leaks.

b. Associated lavatory door is locked closed and placarded, INOPERATIVE—DO NOT ENTER.

c. P-i-C is informed of the defect and that the number of inoperative lavatories is deemed acceptable in terms of passenger comfort.

Notes: 1. These provisions are not intended to prohibit inspections by crewmembers.

2. The number of lavatories are as follows:
   - Cabin version 7724: 9 lavatories
   - Cabin version 77E1: 10 lavatories
   - Cabin version 7732: 13 lavatories
   - Cabin version 77B1: 11 lavatories

TJA,B,C,D,G,H
TJR to TJW
TKA to TKF
TKK to TKR, TKU to TKZ

MAINTENANCE (M)

Configure the airplane (AMM 38-00-00/901).

1. Deactivate or isolate inoperative components.
2. If required, drain the associated waste tank. Do not add the precharge chemical to the associated waste tank..
3. Close, lock and placard the associated lavatory door.

CENTRAL MAINTENANCE SYSTEM

45-10-01 Central Maintenance Computing System (CMCS)

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

45-11-01 Maintenance Access Terminal (MAT)

Interval	Installed	Required	Procedure
D	1	0	**(P)**

INFORMATION SYSTEMS

46-11-01 Onboard Network System (ONS)

46-11-01B Procedures Do Not Require Use TKV to TKZ

Interval	Installed	Required	Procedure
D	1	0	**(P)**

May be inoperative provided:

a. Procedures do not require its use.

Note: The Onboard Network System (ONS) includes the Network File Server (NFS) and Network Extension Device (NED) components with associated support interfaces.

MAINTENANCE NOTE

1. The Maintenance Access Terminal (MAT) functions may not be available including CMCS data collection and loading.

NITROGEN GENERATION SYSTEM

47-11-01 Nitrogen Generation System (NGS)

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
A	1	0	**(M) (P)**

May be inoperative provided:

a. NGS shutoff valve is deactivated closed.
b. Repairs are made within ten flight days.

MAINTENANCE (M)

Deactivate the NGS shutoff valve in closed position (AMM 47-00-01/901).

1. Gain access to the NGS shutoff valve.
2. Position valve's manual lock arm closed.

47-11-01 Nitrogen Generation System (NGS)

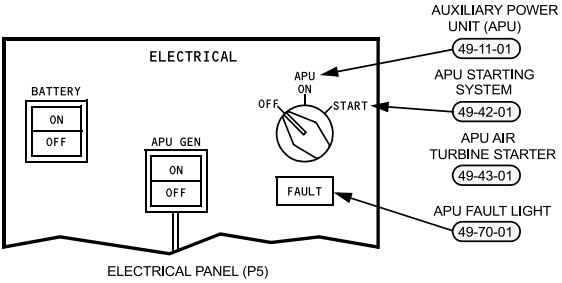
TKK to TKR, TKU to TKZ

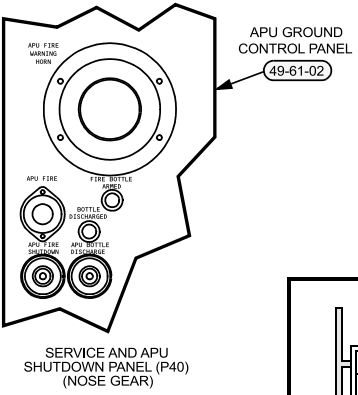
47-11-01-01 Nitrogen Generation Performance

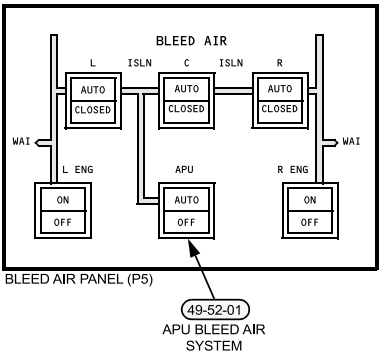
Interval	Installed	Required	Procedure
C	1	0	

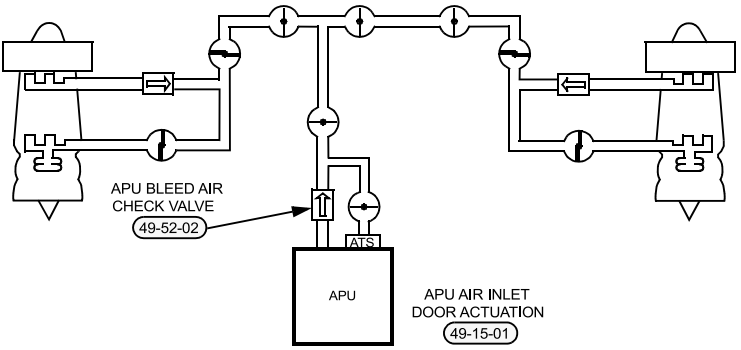
AIRBORNE AUXILIARY POWER

General Locations

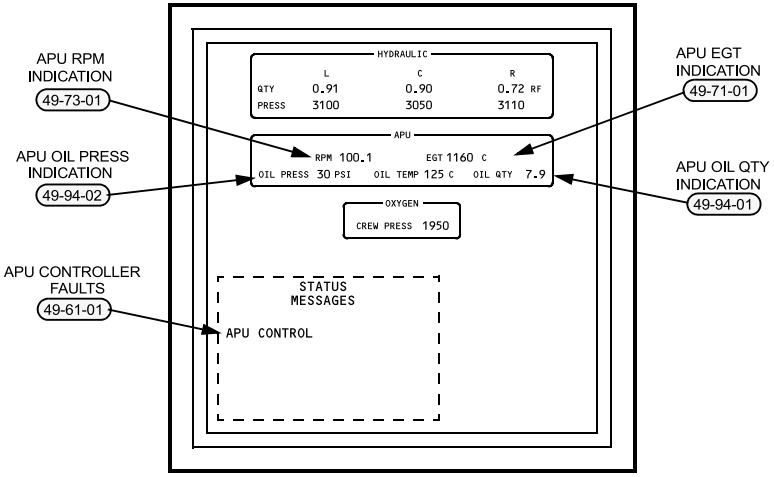








AIR SUPPLY SYSTEM



MFD - EICAS STATUS PAGE

49-11-01 Auxiliary Power Unit (APU)

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

APU may be inoperative provided:

a. Other procedures do not require its use.

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

MAINTENANCE NOTE

If desired, to prevent automatic starts, the APU may be deactivated (AMM 49-11-00/201).

1. Open and collar the P49 panel APUC 2 circuit breaker.
2. Open and collar the P310 panel DC FUEL PUMP circuit breaker.
3. Open and collar the P310 panel APUC 1 circuit breaker.
4. Open and collar the P310 panel APU INLET DR ACTR circuit breaker.
5. Open and collar the P320 panel APU OIL HTR ASSY circuit breaker.

OPERATIONS (O)

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability:

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.

3. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.
4. Position the APU selector OFF.

49-15-01 APU Air Inlet Door Actuation System

49-15-01A Procedures Do Not Require APU

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

May be inoperative with door in any position provided:

a. Other procedures do not require the use of the APU.

b. APU is not used.

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

OPERATIONS (O)

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability (inlet door deactivated full open).

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. For APU air inlet door not closed:
   A. Increase flight planning fuel by 2.5%.
3. The flight must remain within 180 minutes of landing at a suitable airport.
4. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.
5. Position the APU selector OFF.

49-15-01 APU Air Inlet Door Actuation System

49-15-01B APU Required

Interval	Installed	Required	Procedure
C	1	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Door is deactivated in the full open position.

MAINTENANCE (M)

Manually position and deactivate the door in the fully open position (AMM 49-00-00/901).

1. Position APU selector on the P5 overhead panel to OFF.
2. Open the P49 Panel APUC 2 circuit breaker.
3. Open the P310 Panel DC FUEL PUMP and APUC 1 circuit breakers.
4. Open and collar the P310 Panel APU INLET DR ACTR circuit breaker.
5. Open the P320 Panel APU OIL HTR ASSY circuit breaker.
6. Open left and right APU Access Doors (315AL and 316AR).
7. Remove access cover from the inlet door actuator assembly.
8. Turn the transfer cover socket on the inlet door actuator counterclockwise until MAN shows in the window of the transfer socket. The manual drive socket will show. DO NOT apply more than 10 lb-in (1.1 N-m) of torque on the transfer cover socket.
9. Turn the manual drive socket counter clockwise until the torque value suddenly increases. DO NOT apply more than 65 in-lbs of torque on the manual drive socket.
10. Turn the transfer cover socket clockwise until ELEC shows in the forward window of the transfer cover.
11. Re-install access cover on the inlet door actuator assembly.
12. Close left and right APU access doors.
13. Close the P49 Panel APUC 2 circuit breaker.
14. Close the P310 Panel DC FUEL PUMP and APUC 1 circuit breakers (APU INLET DR ACTR circuit breaker remains open).
15. Close the P320 Panel APU OIL HTR ASSY circuit breaker.

OPERATIONS (O)

1. If the APU is not used:
   A. Increase flight planning fuel by 2.5%.

2. If the APU is used:
   A. Increase flight planning fuel by 2.5%.
   B. Also increase planning fuel by 90 kg per hour of APU usage in flight and 240 kg per hour of APU usage on the ground.

49-15-01 APU Air Inlet Door Actuation System

49-15-01-01 APU Air Inlet Door Actuator Position Indication Switch

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

May be inoperative provided:

a. APU inlet door is verified to operate normally before each departure.
b. Both ELMS P310 panel channels operate normally.

MAINTENANCE (M)

Verify the APU door operates normally before each departure (AMM 49-00-00/901).

1. Supply electrical power on the airplane using external power or starting an engine (AMM 24-22-00/201).
2. For APU off:
   A. Display the APU Maintenance page and confirm the INLET DOOR POSITION indicates CLOSED.
   B. Position Electrical Panel (P5) APU selector ON.
   C. Wait 45 seconds and confirm APU Maintenance page INLET DOOR POSITION indicates OPEN.
   D. Position Electrical Panel (P5) APU selector OFF.
   E. Wait 120 seconds and confirm APU Maintenance page INLET DOOR POSITION indicates CLOSED.
3. For APU on:
   A. Display the APU Maintenance page and confirm the INLET DOOR POSITION indicates OPEN.
   B. Position Electrical Panel (P5) APU selector OFF.
   C. Wait 120 seconds and confirm APU Maintenance page INLET DOOR POSITION indicates CLOSED.
   D. Start the APU (AMM 49-11-00/201).

E. Wait 45 seconds and confirm APU Maintenance page INLET DOOR POSITION indicates OPEN.

49-42-01 APU Starting System (Includes Electric Starter)

49-42-01A APU Required

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

May be dispatched with APU START SYS faults provided:

a. APU is started before departure and operated continuously throughout the flight.

MAINTENANCE NOTE

1. Some electric starter failures may result in damage to the APU if it is used. If the APU fails to start electrically but starts pneumatically, the possibility of APU damage can be reduced by doing the following steps.
   A. Perform the APU Magnetic Chip Collector Inspection (AMM Task 49-27-04/201).
   B. If the Chip Collector Inspection is satisfactory:
      1) Position Overhead Maintenance Panel (P61) APU Maintenance switch NORM.
      2) Position Overhead Panel (P5) APU selector OFF.
      3) Remove the end cap from the electric starter motor on the APU.
      4) Use a socket and ratchet on the shaft for the electric starter to turn the APU counterclockwise, facing aft.
         a. The APU should turn freely. Verify the APU is turning freely by visual inspection of the power section compressor blades through the bottom access panel of the APU inlet duct (AMM 49-21-00/Figure 601).
         b. If the APU does not turn freely, serious damage can occur if the APU is operated (see FIM Chapter 49-40, Task 812, Fault Isolation Procedure - Mechanical Fault).
      5) Remove the socket and ratchet, and re-install the end cap on the electric starter.

OPERATIONS (O)

1. Increase flight planning fuel by 2.5% to account for the open APU air inlet door. Also increase flight planning fuel by 90 kg per hour of APU usage in flight and 240 kg per hour of APU usage on the ground.
2. Start the APU before departure and operate the APU continuously throughout the flight.

49-42-01 APU Starting System (Includes Electric Starter)

49-42-01B Procedures Do Not Require APU

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

May be dispatched with APU START SYS faults provided:

a. Other procedures do not require use of the APU.

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

OPERATIONS (O)

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability.

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.

3. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

49-43-01 APU Air Turbine Starter

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

May be inoperative provided:

a. Electric starter operates normally.

49-52-01 APU Bleed Air System

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

May be inoperative provided:

a. Other procedures do not require use of the APU as a pneumatic source.

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

Note: The APU may be used as an electrical power source.

OPERATIONS (O)

Note: The APU bleed air system may or may not be completely inoperative when the APU BLEED AIR status message is displayed depending on the actual fault causing the message. The APU bleed air system, if available may be used for ground operation only.

1. Dispatch is not allowed if other procedures require APU bleed air. MEL dispatch procedures for the following inoperative equipment may require APU bleed air availability.

MEL Item	Associated Status Message
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.

49-52-02 APU Bleed Air Check Valve

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

May be inoperative provided:

a. APU bleed air switch remains OFF except for main engine start.

b. Other procedures do not require use of the APU as a pneumatic source.

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

Note: The APU may be used for electrical power. Air Turbine Starter is not available with APU bleed air shutoff valve closed.

OPERATIONS (O)

1. Dispatch is not allowed if other procedures require APU bleed air. MEL dispatch procedures for the following inoperative equipment may require APU bleed air availability.

MEL Item	Associated Status Message
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. APU is available for electrical power only. APU BLEED AIR switch must remain OFF after main engine start.
3. Air Turbine Starter for the APU is not available.
4. The flight must remain within 180 minutes of landing at a suitable airport.

49-61-01 APU Controller

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

May be dispatched with APU CONTROL faults.

MAINTENANCE NOTE

1. Continued APU operation following display of maintenance messages 49-12990 (APU Lube Filter Clogged) or 49-12950 (APU Generator Filter Clogged) may increase the potential for filter bypass differential pressure to be reached resulting in metal contamination circulating to additional areas of the APU.

49-61-02 APU Ground Control Panel

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

MAINTENANCE NOTE

1. This MEL item allows dispatch with any or all of the APU ground control panel functions (APU Fire Warning Horn, APU Fire Warning Light, APU Fire Bottle Discharge Switch, APU Shutdown Switch, APU Fire Bottle Armed Light and APU Bottle Discharged Light) inoperative.

49-70-01 APU FAULT Light

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

49-71-01 APU EGT Indication

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

49-73-01 APU RPM Indication

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

49-94-01 APU OIL QTY Indication

49-94-01A APU Required

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

May be inoperative provided:

a. APU oil quantity is verified adequate once each flight day.

MAINTENANCE (M)

1. Verify the APU oil quantity is adequate once each flight day using the APU oil tank sight gauge (AMM 49-00-00/901) .

49-94-01 APU OIL QTY Indication

49-94-01B Procedures Do Not Require APU

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

May be inoperative provided:

a. Other procedures do not require use of APU.

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

OPERATIONS (O)

1. Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment may require APU availability.

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R

MEL Item	Associated Status Message
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. The flight must remain within 180 minutes of landing at a suitable airport.
3. Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.
4. Position the APU selector OFF.

49-94-02 APU OIL PRESS Indication

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

DOORS

52-00-01 Doors Synoptic Display

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

OPERATIONS NOTE

1. If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) 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.

52-11-01 Main Entry Doors/Slides

52-11-01-01 Main Entry Doors/Slides

52-11-01-01A Passengers Carried

Interval	Installed	Required	Procedure
A	–	–	**(M) (O) (P) (MV)**

One door/slide may be inoperative or slide missing provided:

a. All other main entry doors are fully operational.

b. Affected door is not used for passenger loading.

c. A conspicuous barrier strap or rope and a placard stating that the door is inoperative shall be placed across the inoperative door.

d. Emergency exit sign and floor proximity lights associated with the inoperative exit must be covered to obscure the sign and lights.

e. Passengers must be briefed not to use affected door.

f. All passenger seats halfway to the next exit in each direction from the inoperative door, across the entire width of the airplane, shall be blocked off with conspicuous tapes or ropes that contrast with the airplane interior before loading passengers. Only the seats in these areas shall be blocked; main passenger aisles, cross aisles and exit areas must not be blocked. (For an inoperative forward door/slide, the blocked seating area shall extend from the forward cabin end, rearward to a line halfway between the inoperative forward door and the next set of doors aft of the inoperative one. For an inoperative rear door/slide, the blocked seating area shall extend forward from the aft cabin end to a line halfway between the inoperative door and the next set of doors forward of the inoperative one).

g. Conspicuous signs and placards shall be placed in appropriate locations to indicate seats are not to be occupied by passengers.

h. Seated capacity must not exceed rated capacity of remaining pairs of exits.

i. For extended overwater operations, occupancy shall not exceed the normal rated capacity of the slide/rafts, or the remaining slide/rafts, or the rated overload capacity of the slide/rafts remaining after loss of one additional slide/raft of greatest capacity, whichever is least.

j. Repairs are made within one flight day.

Notes: 1. Weight and Balance Manifest must be revised as necessary to ensure proper loading limits are observed.

2. Cabin attendants may be stationed in the vicinity of each door within blocked areas.

3. A door with an inoperative EPAS must be considered inoperative.

4. The number of main entry doors/slides are as follows: -200,-200ER -300,-300ER
   - 777-200/-200ER: 8 doors/slides
   - 777-300/300ER: 10 doors/slides

MAINTENANCE (M)

Note: If a passenger entry door's Emergency Power Assist System (EPAS) is inoperative, that associated entry door is considered inoperative.

Cover associated signs and lights, and block associated doors and seats (AMM 52-00-00/901).

1. Cover the emergency exit sign of the affected door so that it is not visible.
2. Cover or otherwise obscure the floor proximity escape path marking system lights unique to the inoperative door.
3. Block the inoperative door with a conspicuous barrier strap or rope and placard INOPERATIVE—PLEASE DO NOT USE.
4. Block unusable passenger seats with conspicuous tape or ropes and placard INOPERATIVE—PLEASE DO NOT USE.

OPERATIONS (O)

1. Passenger entry door Emergency Power Assist Systems (EPAS) and emergency evacuation slide systems must be armed with the mode select handles in the ARMED or AUTOMATIC position prior to taxi, takeoff and landing whenever passengers are carried. Girt bar indication flags are visible through windows in the doorway liners when the door and slides are in the ARMED or AUTOMATIC mode.

   Note: This recommendation includes inoperative doors with escape slides removed.
2. Flight crew members and passengers must be briefed prior to takeoff and landing regarding exit that cannot be used for emergency evacuation.
3. Refer to FCOM Vol. 1A Loading Limitations for blocked seat rows.

52-11-01 Main Entry Doors/Slides

52-11-01-01 Main Entry Doors/Slides

52-11-01-01B No Passengers Carried

Interval	Installed	Required	Procedure
C	–	1	**(M) (O) (P) (MV)**

May be inoperative provided:

a. No passengers are carried.

b. A maximum of 19 persons for non-passenger carrying operations are carried.

c. A conspicuous barrier strap or rope and a placard stating that the door is inoperative shall be placed across the inoperative door.

d. Emergency exit sign and floor proximity lights associated with the inoperative exit must be covered to obscure the sign and lights.

e. Inoperative doors are not used for loading.

f. Each person carried has unobstructed access from their seat to an operative door.

g. Safety briefing includes location of inoperative doors and instructions not to use them.

Note: The number of main entry doors/slides are as follows:

-200,-200ER
- 777-200/-200ER: 8 doors/slides

-300,-300ER
- 777-300/300ER: 10 doors/slides

MAINTENANCE (M)

Block the inoperative doors with conspicuous barrier strap or rope and placard as inoperative, configure the associated emergency exit signs and floor proximity escape path markings as appropriate (AMM 52-00-00/901).

1. Block the inoperative doors with conspicuous barrier strap or rope and placard as inoperative.
2. Cover the emergency exit signs unique to the inoperative doors.
3. Cover the floor proximity escape path marking system lights unique to the inoperative doors.

OPERATIONS (O)

1. No passengers may be carried.
2. A maximum of 19 persons (crewmember, company employee, or inspector performing official duties) may be carried.

3. Inoperative doors are not to be used for loading.
4. The Pilot-in-Command must brief the occupants prior to takeoff and landing regarding the inoperative doors that cannot be used for emergency evacuation.
5. Arming of the passenger entry doors using the mode select handles in the automatic position (red band) prior to taxi, takeoff and landing includes the inoperative doors with or without the escape slide removed.

52-11-02 Main Entry Doors Pressure Stop Assemblies

Interval	Installed	Required	Procedure
C	–	–	**(M) (O) (P) (MV)**

One forward or aft stop per door (total of 8 stops per -200 airplane or 10 stops per -300 airplane) may be missing or inoperative provided:

a. There are no visible defects on remaining stops for the affected door(s).

b. Both cabin altitude auto controllers operate normally.

c. For inoperative or missing pressure stops 1, 2, 7 and 8, limit maximum cabin differential pressure to 2.5 psi.

d. For inoperative or missing pressure stops 3, 4, 5 and 6, limit maximum cabin differential pressure to 5.4 psi.

MAINTENANCE (M)

1. Visually inspect remaining pressure stops on affected door(s) and door frame(s) to ensure there are no other defects (AMM 52-00-00/901).

   Note: Door stops are numbered 1 to 8 from bottom to top on both forward and aft edges of door.

OPERATIONS (O)

Airplane altitude is limited as follows to assure maximum cabin differential pressure (Delta P) limit is not exceeded by automatic cabin pressure control.

1. Before takeoff, set the landing altitude to 8000 feet.
2. For a maximum Delta P of 2.5 psi, do not exceed 14,500 feet airplane pressure altitude.
3. For a maximum Delta P of 5.4 psi, do not exceed 24,500 feet airplane pressure altitude.
4. At top of descent, reset the landing altitude to the actual field elevation for the destination airport.

52-11-03 Main Entry Doors Hold-Open Mechanisms

52-11-03-01 Main Entry Doors Hold-Open Mechanisms -200,-200ER

Interval	Installed	Required	Procedure
C	8	4	**(P)**

52-11-03 Main Entry Doors Hold-Open Mechanisms

52-11-03-02 Main Entry Doors Hold-Open Mechanisms -300,-300ER

Interval	Installed	Required	Procedure
C	10	6	**(P)**

May be inoperative provided:

a. Doors 3L and 3R hold-open mechanisms operate normally.

52-11-04 Main Entry Doors Hold-Open Release Handles

-200,-200ER **52-11-04-01 Main Entry Doors Hold-Open Release Handles**

Interval	Installed	Required	Procedure
C	8	4	**(P)**

52-11-04 Main Entry Doors Hold-Open Release Handles

-300,-300ER **52-11-04-02 Main Entry Doors Hold-Open Release Handles**

52-11-04-02-01 Doors 1L, 1R, 2L, 2R, 4L, 4R, 5L and 5R

Interval	Installed	Required	Procedure
C	8	4	**(P)**

52-11-04 Main Entry Doors Hold-Open Release Handles

-300,-300ER **52-11-04-02 Main Entry Doors Hold-Open Release Handles**

52-11-04-02-02 Doors 3L and 3R

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

One may be inoperative provided:

a. Supplemental raft is not installed in the associated door bustle.

52-11-05 Main Entry Door Flight Lock Systems

52-11-05-01 Main Entry Door Flight Lock Systems

52-11-05-01-01 777-200/-200ER -200,-200ER

Interval	Installed	Required	Procedure
C	8	0	**(M) (O) (P)**

May be inoperative provided:

a. Each affected door is verified to be capable of being unlatched and opened before each departure.

b. Flight attendant(s) monitors the affected door handle(s) when cabin differential pressure is less than 1.5 psi.

MAINTENANCE (M)

Verify the associated passenger entry door(s) is capable of being unlatched and opened. Open and close the associated door(s) using the interior handle (AMM 52-11-00/201, 52-12-00/201).

1. Position the door mode select handle to MANUAL/DISARMED. DO NOT rotate the door handle to the open position with the door mode select lever in the AUTOMATIC/ARMED position. Door will open rapidly and slide will deploy and inflate.
2. Rotate the inside door handle to the OPEN position. Open door slightly.
3. If desired, gain access to the inoperative flight lock actuator and disconnect, cap and stow the actuator's electrical connector.
4. Close door and rotate handle back to CLOSED position.

OPERATIONS (O)

1. Each affected door must be monitored by a flight attendant when cabin differential pressure is less than 1.5 psi to ensure door handle is not operated by passengers.
2. Flight crew should inform cabin crew when monitoring is required.

52-11-05 Main Entry Door Flight Lock Systems

52-11-05-01 Main Entry Door Flight Lock Systems

-300,-300ER **52-11-05-01-02 777-300/-300ER**

Interval	Installed	Required	Procedure
C	10	0	**(M) (O) (P)**

May be inoperative provided:

a. Each affected door is verified to be capable of being unlatched and opened before each departure.

b. Flight attendant(s) monitors the affected door handle(s) when cabin differential pressure is less than 1.5 psi.

MAINTENANCE (M)

Verify the associated passenger entry door(s) is capable of being unlatched and opened. Open and close the associated door(s) using the interior handle (AMM 52-11-00/201, 52-12-00/201).

1. Position the door mode select handle to MANUAL/DISARMED. DO NOT rotate the door handle to the open position with the door mode select lever in the AUTOMATIC/ARMED position. Door will open rapidly and slide will deploy and inflate.
2. Rotate the inside door handle to the OPEN position. Open door slightly.
3. If desired, gain access to the inoperative flight lock actuator and disconnect, cap and stow the actuator's electrical connector.
4. Close door and rotate handle back to CLOSED position.

OPERATIONS (O)

1. Each affected door must be monitored by a flight attendant when cabin differential pressure is less than 1.5 psi to ensure door handle is not operated by passengers.
2. Flight crew should inform cabin crew when monitoring is required.

52-34-01 Forward Cargo Door Hook/Latch System (Electric Mode)

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

May be inoperative provided:

a. Manual mode operates normally.

b. There is no damage to the hook/latch mechanism.

c. Door is manually latched and locked using the maintenance manual procedure.

MAINTENANCE (M)

1. Latch and lock the door manually (AMM 52-00-00/903 and AMM 52-34-00/201).

52-34-02 Forward Cargo Door Lift System (Electric Mode)

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

May be inoperative provided:

a. Manual mode operates normally.

b. There is no damage to the door lift system.

c. Door is manually closed, latched and locked using the maintenance manual procedure.

MAINTENANCE (M)

1. Operate the door manually (AMM 52-34-00/201) .

52-34-03 Forward Cargo DOOR LATCHED Light

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

May be inoperative provided:

a. The forward cargo door is verified to be closed, latched and locked before each departure.

MAINTENANCE (M)

Before each departure, verify that the forward cargo door is closed, latched, and locked.

1. Close and latch the door using normal procedures (AMM 52-34-00/201).
2. Check that the outside skin of the door is aligned and faired with surrounding body skin.
3. Check that the lock handle is in the unlocked position.
4. Check that the vent door is open.
5. Rotate the lock handle to the CLOSED position.
6. Check that the lock handle is fully closed and faired with the outside skin of the door.
7. Check that the lock handle release lever is faired with the lock handle and outside skin of the door.
8. Check that the vent door is fully closed.
9. Check that the latches are in the fully latched position and that the locks are in the locked position by visual inspection through the witness ports at the lower edge of the door.

TJA,B,C,D,G,H,TKA to TKF,TKU to TKZ

52-35-01 Aft Small Cargo Door Lift/Latch System

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

May be inoperative provided:

a. The associated door is verified to be closed, latched and locked before each departure.

MAINTENANCE (M)

1. Verify the door is closed, latched, and locked (AMM 52-35-00/201).
2. Verify the pressure vent door is closed.

TJA,B,C,D,G,H,TKA to TKF,TKU to TKZ

52-35-01 Aft Small Cargo Door Lift/Latch System

52-35-01-01 Electric Mode

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

May be inoperative provided:

a. Manual mode operates normally.

52-35-02 Aft Small Cargo Door Hinge System (Electric Mode)

TJA,B,C,D,G, H,TKA to TKF, TKU to TKZ

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

May be inoperative provided:

a. Manual mode operates normally.

b. There is no damage to the hinge system.

c. Door is manually operated using the maintenance manual procedure.

MAINTENANCE (M)

1. Operate the door manually (AMM 52-35-00/201) .

TJA,B,C,D,G,H,TKA to TKF,TKU to TKZ

52-35-03 Aft Small Cargo DOOR LATCHED Light

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

May be inoperative provided:

a. Aft small cargo door indication system operates normally.

b. Aft small cargo door is verified to be closed, latched and locked before each departure.

MAINTENANCE (M)

Before each departure, verify the aft small cargo door is closed, latched and locked.

1. Closed and latch the aft small cargo door (AMM 52-35-00/201).
2. Verify the pressure vent door is closed.
3. Verify the aft small cargo door alerting message is not displayed by one of the following methods:
   A. After the small aft cargo door is closed latched and locked:
      1) Supply electrical power on the airplane (AMM 24-22-00/201).
      2) Close all doors, so that DOORS advisory message is no longer displayed.
      3) Verify the DOOR AFT CARGO advisory message is not displayed. On the Display Select Panel push CANC/RCL if necessary to recall messages and view additional pages.
   B. After all airplane doors are closed, verify with the flight crew the DOOR AFT CARGO advisory message is not displayed.

52-35-04 Aft Small Cargo Door Arming Relay/Control Switch

TJA,B,C,D,G, H,TKA to TKF, TKU to TKZ

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

May be inoperative provided:

a. Associated arming control circuit is deactivated.

b. Aft small cargo door is verified to be closed, latched and locked before each departure.

MAINTENANCE (M)

Deactivate the associated arming control circuit and before each departure, verify the aft small cargo door is closed, latched and locked.

1. Deactivate the associated arming control circuit.
   A. Open and collar the P039 panel AFT CARGO DOOR circuit breaker.
2. Before each departure, verify the aft small cargo door is closed, latched and locked.
   A. Closed and latch the aft small cargo door (AMM 52-35-00/201).
   B. Check that the outside skin of the door is aligned and faired with the surrounding body skin.
   C. Check that the vent door is fully closed.
   D. Verify the aft small cargo door alerting message is not displayed by one of the following methods:
      1) After the small aft cargo door is closed latched and locked:
         a. Supply electrical power on the airplane (AMM 24-22-00/201).
         b. Close all doors, so that DOORS advisory message is no longer displayed.
         c. Verify the DOOR AFT CARGO advisory message is not displayed. On the Display Select Panel push CANC/RCL if necessary to recall messages and view additional pages.
      2) After all airplane doors are closed, verify with the flight crew the DOOR AFT CARGO advisory message is not displayed.

52-36-01 Bulk Cargo Door Counterbalance Mechanism

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

May be inoperative provided:

a. A safety hold open device is used when door is in the open position.

MAINTENANCE (M)

1. Secure the door in the open position with the safety strap installed in the bulk compartment (AMM 52-36-00/201) .

52-37-01 Aft Large Cargo Door Hook/Latch System (Electric Mode)

TJR to TJW, TKK to TKR

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

May be inoperative provided:

a. Manual mode operates normally.

b. There is no damage to the hook/latch mechanism.

c. Door is manually latched and locked using the maintenance manual procedure.

MAINTENANCE (M)

1. Latch and lock the door manually (AMM 52-37-00/201).

TJR to TJW, TKK to TKR

52-37-02 Aft Large Cargo Door Lift System (Electric Mode)

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

May be inoperative provided:

a. Manual mode operates normally.

b. There is no damage to the door lift system.

c. Door is manually closed, latched and locked using the maintenance manual procedure.

MAINTENANCE (M)

1. Operate the door manually (AMM 52-37-00/201).

52-37-03 Aft Large Cargo DOOR LATCHED Light

TJR to TJW, TKK to TKR

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

May be inoperative provided:

a. The aft large cargo door is verified to be closed, latched and locked before each departure.

MAINTENANCE (M)

Before each departure verify that the aft large cargo door is closed, latched, and locked.

1. Close and latch the door per normal procedures (AMM 52-37-00/201).
2. Check that the outside skin of the door is aligned and faired with surrounding body skin.
3. Check that the lock handle is in the unlocked position.
4. Check that the vent door is open.
5. Rotate the lock handle to the CLOSED position.
6. Check that the lock handle is fully closed and faired with the outside skin of the door.
7. Check that the lock handle release lever is faired with the lock handle and outside skin of the door.
8. Check that the vent door is fully closed (the upper edge of the vent door may not be fully faired).
9. Check that the latches are in the fully latched position and that the locks are in the locked position by visual inspection through the witness ports at the lower edge of the door.

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

Interval	Installed	Required	Procedure
A	1	0	**(M) (O) (P)**

May be inoperative provided:

a. Automatic locking system is deactivated.

b. Interphone systems are verified to operate normally.

c. Door dead bolt operates normally and is used to lock the door.

d. Door operation procedure are used for locking and unlocking the door using the dead bolt.

e. Repairs are made within two flight days.

MAINTENANCE (M)

1. Deactivate the automatic locking system by positioning Flight Deck Access System switch OFF (guard extended) (AMM 52-00-00/901).

   Note: LOCK FAIL light may remain illuminated when the Flight Deck Access System switch is in the OFF position (guard extended).

OPERATIONS (O)

1. At least two crews must be permanently present in the flight deck throughout the entire flight.
2. P-i-C shall establish an appropriate crew communication, identification and door operation procedure based on the usable equipment in order to be able to comply with the flight deck security requirement.
3. Prior to flight, the P-i-C must brief crew members on the established procedure.

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-01 Flight Deck Access System (Keypad, Door Chime)

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

May be inoperative provided:

a. Keypad is deactivated.

b. Interphone systems are verified to operate normally.

MAINTENANCE (M)

Deactivate the keypad (AMM 52-00-00/901).

1. Open P110 panel F/D DR LOCK circuit breaker.
2. Access the chime module.
3. Disconnect, cap and stow the electrical connector J1 for the keypad at the chime module.
4. Close P110 panel F/D DR LOCK circuit breaker.

Note: Ensure the Flight Deck Access System switch is in the OFF position (guard extended) when flight deck door is to be closed and not occupied.

OPERATIONS (O)

1. At least two crews must be permanently present in the flight deck throughout the entire flight.
2. P-i-C shall establish an appropriate crew communication, identification and door operation procedure based on the usable equipment in order to be able to comply with the flight deck security requirement.
3. Prior to flight, the P-i-C must brief crew members on the established procedure.

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-01 Flight Deck Access System (Keypad, Door Chime)

52-51-02-01-01 LEDs

Interval	Installed	Required	Procedure
C	3	0	**(O) (P)**

May be inoperative provided:

a. Interphone systems are verified to operate normally.

OPERATIONS (O)

1. At least two crews must be permanently present in the flight deck throughout the entire flight.

2. P-i-C shall establish an appropriate crew communication, identification and door operation procedure based on the usable equipment in order to be able to comply with the flight deck security requirement.
3. Prior to flight, the P-i-C must brief crew members on the established procedure.

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-01 Flight Deck Access System (Keypad, Door Chime)

52-51-02-01-02 Door Bell Mode

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

May be inoperative provided:

a. Interphone systems are verified to operate normally.

OPERATIONS (O)

1. At least two crews must be permanently present in the flight deck throughout the entire flight.
2. P-i-C shall establish an appropriate crew communication, identification and door operation procedure based on the usable equipment in order to be able to comply with the flight deck security requirement.
3. Prior to flight, the P-i-C must brief crew members on the established procedure.

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-01 Flight Deck Access System (Keypad, Door Chime)

52-51-02-01-03 Switch Guard

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

May be inoperative or missing provided:

a. The flight deck door LOCK FAIL light operates normally.

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-02 Flight Deck Door LOCK FAIL Light

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

May be inoperative provided:

a. Automatic lock controls are verified to operate normally.

MAINTENANCE (M)

Verify the automatic lock controls operate normally (AMM 52-00-00/901).

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 can not 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 can not rotate the strike).

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-03 Flight Deck Door AUTO UNLK Light

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

May be inoperative provided:

a. Automatic lock controls are verified to operate normally.

b. Door chime operates normally.

MAINTENANCE (M)

Verify the automatic lock controls operate normally (AMM 52-00-00/901).

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 can not 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 can not rotate the strike).

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-04 Flight Deck Door Lock Control Selector

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

May be inoperative provided:

a. Keypad is deactivated.

b. Automatic lock is verified to operate normally.

MAINTENANCE (M)

Deactivate the keypad and verify the automatic lock operates normally (AMM 52-00-00/901).

1. Deactivate the keypad.
   A. Open P110 panel F/D DR LOCK circuit breaker.
   B. Access the chime module.
   C. Disconnect, cap and stow the electrical connector J1 for the keypad at the chime module.
   D. Close P110 panel F/D DR LOCK circuit breaker.
2. Verify the automatic lock operates normally.
   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 can not 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 can not rotate the strike).

OPERATIONS (O)

1. Use Flight Deck Dead Bolt for locking and unlocking of the door.

2. Position Dead Bolt in LOCKED KEY INOPERABLE when the door is to be locked.
3. Inform cabin crew to use PA for flight deck access permission.

Note: Ensure the Flight Deck Access System switch is in the OFF position (guard extended) when flight deck door is to be closed and not occupied.

52-51-02 Enhanced Flight Deck Security Door Automatic Locking System Passenger

52-51-02-05 Pressure Rate-of-Change Sensing Module

Interval	Installed	Required	Procedure
A	1	0	**(M) (P)**

May be inoperative provided:

a. Pressure sensing module is deactivated.
b. Repairs are made within two flight days.

MAINTENANCE (M)

Deactivate the pressure sensing module (pressure sensor) (AMM 52-00-00/901).

1. Open P110 panel F/D DR LOCK circuit breaker.
2. Remove the pressure sensor.
3. Disconnect the electrical connector from the pressure sensor.
4. A closed circuit from the pressure sensor is required to keep the automatic locking system operating.
   A. Fabricate a shorting plug using a connector part number equivalent to Government Designation M83513/04-A01N (detail specification MIL-DTL-83513).
   B. Trim the excess wire to a 2 to 3 inch length.
   C. Splice wires 4 and 6 together.
   D. Insulate splice and wire pigtails.
   E. Connect the shorting plug to the electrical connector and stow.
5. Install the pressure sensor.
6. Close P110 panel F/D DR LOCK circuit breaker.

52-51-03 Enhanced Flight Deck Security Door Dead Bolt

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

May be inoperative provided:

a. Automatic lock controls operate normally.

52-51-06 Flight Deck Door Viewing Port

52-51-06-02 With Electronic Visual Surveillance System

52-51-06-02A Electronic Visual Surveillance System Inoperative

Interval	Installed	Required	Procedure
A	1	0	**(O) (P)**

May be inoperative provided:

a. Repairs are made within three flight days.

OPERATIONS (O)

1. Use interphone for flight deck entry permission and exit.

52-51-06 Flight Deck Door Viewing Port

52-51-06-02 With Electronic Visual Surveillance System

52-51-06-02B Electronic Visual Surveillance System Operative

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

May be inoperative provided:

a. A flight deck door visual surveillance system is installed and operates normally.

OPERATIONS (O)

1. Use Electronic Visual Surveillance System for flight deck entry permission and exit.

52-71-01 Door Indication Systems

Interval	Installed	Required	Procedure
C	–	0	**(M) (P)**

May be inoperative provided:

a. Associated door is verified closed, latched and locked before each departure.

MAINTENANCE (M)

Note: The optional procedures to deactivate inoperative door sensors are provided to prevent unexpected display of the CONFIG DOORS warning and repeated RTOs due to intermittent door sensor faults.

Deactivate the inoperative sensors (if desired), and before each flight, verify the associated door is closed, latched, and locked (AMM 52-00-00/901).

1. For Main Entry Doors:
   A. Deactivate the associated entry door's sensors.
      1) Remove, cap and stow electrical connectors from following sensors.
         a. For entry door 1L:
            i) Remove electrical connector DS52109 from sensor S52109 (CLOSED & LATCHED DR 1L) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 1L).
         b. For entry door 1R:
            i) Remove electrical connector DS52209 from sensor S52209 (CLOSED & LATCHED DR 1R) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 1R).
         c. For entry door 2L:
            i) Remove electrical connector DS52111 from sensor S52111 (CLOSED & LATCHED DR 2L) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 2L).
         d. For entry door 2R:
            i) remove electrical connector DS52211 from sensor S52211 (CLOSED & LATCHED DR 2R) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 2R).

e. For entry door 3L:

-200,-200ER*

i) Remove electrical connector DS52113 from sensor S52113 (CLOSED & LATCHED DR 3L) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 3L).

-300,-300ER

Remove electrical connector DS52113 from sensor S52113 (CLOSED & LATCHED DR 3L) and remove electrical connector DS52026 from sensor S52026 (LOCKED DR 3L).

f. For entry door 3R:

-200,-200ER*

i) Remove electrical connector DS52213 from sensor S52213 (CLOSED & LATCHED DR 3R) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 3R).

-300,-300ER

Remove electrical connector DS52213 from sensor S52213 (CLOSED & LATCHED DR 3R) and remove electrical connector DS52026 from sensor S52026 (LOCKED DR 3R).

g. For entry door 4L:

i) Remove electrical connector DS52115 from sensor S52115 (CLOSED & LATCHED DR 4L) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 4L).

h. For entry door 4R:

i) Remove electrical connector DS52215 from sensor S52215 (CLOSED & LATCHED DR 4R) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 4R).

-300,-300ER*

i. For entry door 5L:

i) Remove electrical connector DS52117 from sensor S52117 (CLOSED & LATCHED DR 5L) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 5L).

-300,-300ER*

j. For entry door 5R

i) Remove electrical connector DS52217 from sensor S52217 (CLOSED & LATCHED DR 5R) and remove electrical connector DS52110 from sensor S52110 (LOCKED DR 5R).

B. Prior to each flight, verify the associated door is closed, latched and locked using normal procedures.

1) Open the affected door in MANUAL/DISARMED mode, then close and latch.
2) Confirm the door interior liner is aligned and faired with the doorway lining.
3) Confirm the OPEN arrow on the hinge arm linings is aligned and continuous at crossover from forward section of lining to aft section of lining.
4) Position the door mode select handle to AUTOMATIC/ARMED, and confirm the yellow flags are visible in the viewing windows immediately forward and aft of door at floor level.
5) Confirm the outside skin of the door is aligned and faired with the fuselage skin.
6) Confirm the vent door is fully closed.

2. For Forward Cargo Door:

A. If desired, deactivate the door sensors.

1) Remove, cap and stow electrical connector DS52021 from sensor S52021 (CLOSED).
2) Remove, cap and stow electrical connector DS52042 from sensor S52042 (LATCHED).
3) Remove, cap and stow electrical connector DS52022 from sensor S52022 (LOCKED).

B. Prior to each flight, verify the door is closed, latched and locked using normal procedures.

1) Close the door.
2) Confirm the outside skin of the door is aligned and faired with the fuselage skin.
3) Confirm the lock handle is in the unlocked position.
4) Confirm the vent door is open.
5) Rotate the lock handle back to the CLOSED position.
6) Confirm the lock handle is fully closed and faired with the outside skin of the door.
7) Confirm the lock handle release lever is faired with the lock handle and outside skin of the door.
8) Confirm the vent door is fully closed (the upper edge of the vent door may not be fully faired).
9) Confirm the latches are in the fully latched position and that the locks are in the locked position by visual inspection through the witness ports at the lower edge of the door.

3. For Aft Large Cargo Door:

TJR to TJW, TKK to TKR

A. If desired, deactivate the door sensors.

1) Remove, cap and stow electrical connector DS52045 from sensor S52045 (CLOSED).

2) Remove, cap and stow electrical connector DS52043 from sensor S52043 (LATCHED).

3) Remove, cap and stow electrical connector DS52044 from sensor S52044 (LOCKED).

B. Prior to each flight, verify the door is closed, latched and locked using normal procedures.

1) Close the door.

2) Confirm the outside skin of the door is aligned and faired with the fuselage skin.

3) Confirm the lock handle is in the unlocked position.

4) Confirm the vent door is open.

5) Rotate the lock handle back to the CLOSED position.

6) Confirm the lock handle is fully closed and faired with the outside skin of the door.

7) Confirm the lock handle release lever is faired with the lock handle and outside skin of the door.

8) Confirm the vent door is fully closed (the upper edge of the vent door may not be fully faired).

9) Confirm the latches are in the fully latched position and that the locks are in the locked position by visual inspection through the witness ports at the lower edge of the door.

TJA,B,C,D,G,H,TKA to TKF,TKU to TKZ

4. For Aft Small Cargo Door:

A. If desired, deactivate the door sensors.

1) Remove, cap and stow electrical connector DS52023 from sensor S52023 (CLOSED).

2) Remove, cap and stow electrical connector DS52024 from sensor S52024 (LATCHED/LOCKED).

B. Prior to each flight, verify the door is closed and latched using normal procedures.

1) Close the door.

2) Confirm the outside skin of the door is aligned and faired with the fuselage skin.

3) Confirm the vent door is fully closed.

4) Open the access cover for the door control panel.

5) Operate the CARGO DOOR CONTROL ARMING switch downward to the ARM position, and confirm the green DOOR

LATCHED light illuminates. Release the switch and confirm the light extinguishes.

6) Close the access cover.

5. For Bulk Cargo Door:

A. If desired, deactivate the door switch.

1) Locate, remove and secure switch S52020 (CLOSED/LATCHED/LOCKED) without cutting its wires.

B. Prior to each flight, verify the door is closed and latched using normal procedures.

1) Close the door.

2) Confirm the outside skin of the door is aligned and faired with the fuselage skin.

3) Confirm the latch handle is fully closed and faired with the door skin.

4) Push on the door to verify it is latched.

6. For Forward Access Door:

A. If desired, deactivate the door sensor.

1) Remove, cap and stow electrical connector DS52018 from sensor S52018 (CLOSED/LATCHED/LOCKED).

B. Prior to each flight, verify the door is closed and latched using normal procedures.

1) Close the door.

2) Confirm the outside skin of the door is aligned and faired with the fuselage skin.

3) Confirm the latch handle is fully closed and faired with the door skin.

4) Push on the door to verify it is latched.

7. For Main Equipment Center (E/E Bay) Access Door:

A. If desired, deactivate the door sensor.

1) Remove, cap and stow electrical connector DS52019 from sensor S52019 (CLOSED/LATCHED/LOCKED).

B. Prior to each flight, verify the door is closed and latched using normal procedures.

1) Close and latch the door.

2) Confirm the outside skin of the door is aligned and faired with the fuselage skin.

3) Confirm the latch handle is fully closed and faired with the door skin.

4) Push on the door to verify it is latched.

-300,-300ER 8. For Overwing Escape Slide Compartment Door:

A. Prior to each flight, verify the door is closed and latched using normal procedures.

1) Open and close the door.

2) Confirm the outside skin of the door is aligned and faired with the fuselage skin.

3) Push on the door to verify it is latched.

OPERATIONS NOTE DELETION

1. For doors with inoperative sensors deactivated:
   A. The optional procedures to deactivate inoperative door sensors are provided to prevent unexpected display of the CONFIG DOORS warning and repeated RTOs due to intermittent door sensor faults.
   B. The respective door indication status message (if applicable) may be displayed both on the ground and in flight.
   C. Inoperative door advisory messages may be displayed on the ground only, except the DOOR BULK CARGO advisory message, which may be displayed both on the ground and in flight.
   D. The DOOR FWD CARGO and DOOR AFT CARGO (if applicable) caution messages may be displayed on the ground.
2. The DOOR BULK CARGO advisory message, DOOR WING SLIDE L advisory message and DOOR WING SLIDE R advisory message may be displayed both on the ground and in flight.

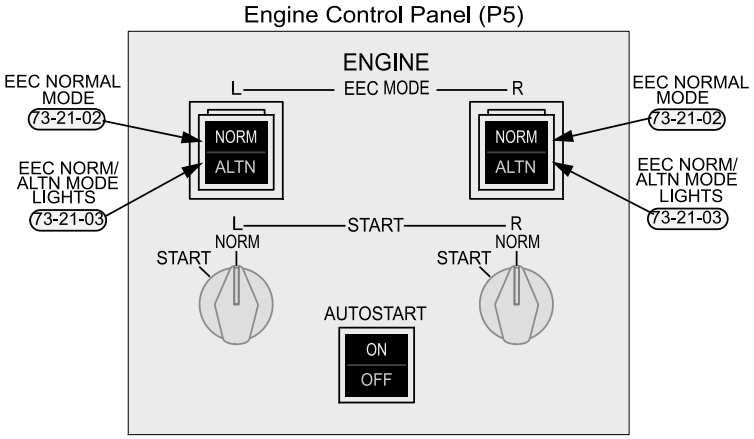
WINDOWS

56-11-01 Flight Deck Window Indication Systems (Side—No. 2)

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

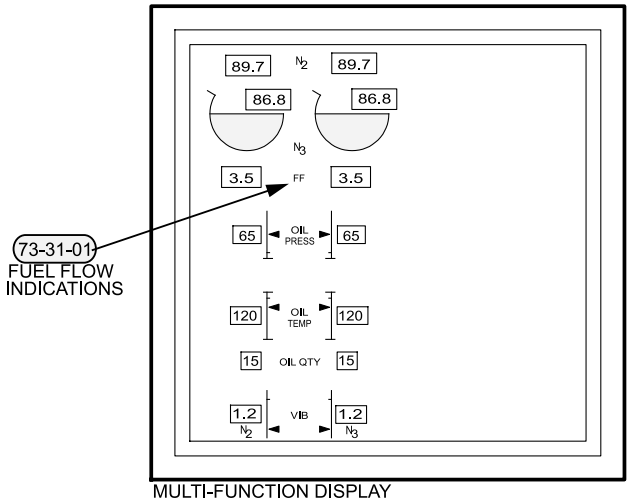
ENGINE FUEL & CONTROL

General Locations

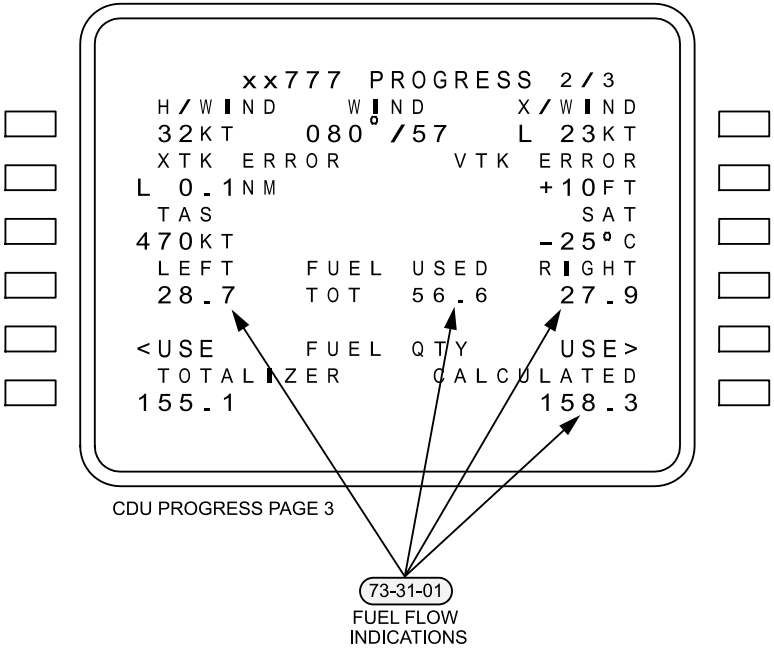


TJA,B,C,D,G,H
TJR to TJW
TKA to TK

RR



MULTI-FUNCTION DISPLAY



CDU PROGRESS PAGE 3

73-21-01 Engine Idle Selection Systems

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

May be inoperative provided:

a. Appropriate performance adjustments are applied.

OPERATIONS (O)

1. Increase descent fuel burn by 861 kg per engine. -200,-200ER
2. Increase descent fuel burn by 500 kg per engine. -300
3. Increase descent fuel burn by 125 kg per engine. -300ER

73-21-02 Electronic Engine Controls (EEC) Normal Mode

TKK to TKR, TKU to TKZ

73-21-02-02 GE

73-21-02-02-02 GE

Interval	Installed	Required	Procedure
B	2	0	**(O) (P) (MV)**

Normal (NORM) mode may be inoperative provided:

a. Autothorttle system operates normally.

b. LPT Turbine Case Cooling Air Flow Systems on both engines operate normally.

c. Both engines are operated in the alternate (ALTN) mode.

d. Appropriate performance adjustments are applied.

OPERATIONS (O)

Notes: 1. Derated and/or reduced thrust takeoffs, and takeoff thrust bumps are not allowed.

2. Thrust rating protection is not provided in alternate mode (for manual thrust settings) and maximum rated thrust is reached at a thrust lever position less than full forward.

1. Increase the ETOPS engine inoperative critical fuel reserves by 1.2%.
2. Base performance on EECs operating in alternate mode.
3. Position both EEC Mode switches to ALTN.
4. Select TO for takeoff.
5. For takeoff:

   A. Engage autothrottles and arm VNAV.

73-21-02 Electronic Engine Controls (EEC) Normal Mode

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

73-21-02-03 RR

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

Normal (NORM) mode may be inoperative provided:

a. Autothrottle system operates normally.

b. N2 indication on affected engine operates normally.

c. Both engines are operated in the alternate (ALTN) mode.

d. Appropriate performance adjustments are applied.

OPERATIONS (O)

Notes: 1. Derated and/or reduced thrust takeoffs, and takeoff thrust bumps are not allowed.

2. Thrust rating protection is not provided in alternate mode (for manual thrust settings) and maximum rated thrust is reached at a thrust lever position less than full forward.

1. Base performance on EECs operating in alternate mode.
2. Position both EEC Mode switches to ALTN.
3. For THRUST ASYM COMP advisory and status messages displayed:
   A. Position the THRUST ASYM COMP switch to OFF then to AUTO to restore Thrust Asymmetry Compensation functionality.
4. For takeoff, advance thrust levers to approximately 50% N1, engage autothrottles and arm VNAV.

73-21-03 Electronic Engine Controls (EEC) Mode Switch Lights

73-21-03-01 ALTN Lights

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

73-21-03 Electronic Engine Controls (EEC) Mode Switch Lights

73-21-03-02 NORM Lights

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

73-21-04 EEC C1 Faults

Interval	Installed	Required	Procedure
A	2	0	**(P)**

May be dispatched with C1 faults provided:

a. Repairs are made in accordance with times established by engine manufacturer.

OPERATIONS NOTE

1. The engine manufacture's established maximum operating time intervals for C1 faults is 150 flight hours or 10 calendar days, whichever occurs first (TCDS E00049EN Note 17). TKK to TKR, TKU to TKZ

2. The engine manufacture's established maximum operating time intervals for C1 faults is 300 flight hours or 20 days, whichever occurs first (TCDS E00050EN Note 17). TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF*

73-21-05 Turbine Overspeed Systems

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

73-21-06 Engine Fuel Shutoff Valve Indication Systems

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

One may be inoperative provided:

a. The associated valve is verified to operate normally each flight day.

MAINTENANCE (M)

Verify that the associated engine fuel shutoff valve is operating normally once each flight day (AMM 73-00-00/901).

1. Start the associated engine and allow engine to stabilize at ground idle (AMM 71-00-00/201).
2. After minimum engine operating time:
   A. Open the P11 panel FUEL SPAR VALVE circuit breaker for the associated engine.
3. Position the associated engine FUEL CONTROL switch to CUTOFF and confirm engine shutdown.
4. For engine not shutdown, the fuel shutoff valve is not operating normally:
   A. Monitor EGT and be prepared to motor the engine.
   B. Close the P11 panel FUEL SPAR VALVE circuit breaker.
   C. The engine may continue to operate for one minute.
5. Confirm the associated FUEL SPAR VALVE L or R status message is displayed.
6. Erase the latched FUEL SPAR VALVE L or R status message (AMM 31-61-00/201).
7. After engine has stopped rotating:
   A. Close the P11 panel FUEL SPAR VALVE circuit breaker.

OPERATIONS NOTE

1. The ENG FUEL VALVE L or R advisory message will be displayed.

TKK to TKR, TKU to TKZ

73-21-07 Engine Thrust Control Malfunction Accommodation (TCMA) Functions (GE90-100 Series)

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

73-21-08 Engine Fuel High Pressure Shut Off Valve (HPSOV) Run Solenoid (GE)

TKK to TKR, TKU to TKZ

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

May be inoperative provided:

a. Associated HPSOV solenoid is deactivated in the open position.

b. Associated fuel spar valve is verified to operate normally before each departure.

c. Associated HMU FMV Shutdown function is verified to operate normally before each departure.

d. Autostart system operates normally.

e. EEC C1/C2 faults are not present on the associated engine

f. Airplane is not operated in areas of known or forecast volcanic ash contamination.

g. A flight attendant is seated at each exit aft of the wing during taxi, takeoff, and landing.

h. Flight attendants are appropriately briefed before each departure.

MAINTENANCE (M)

1. Verify ENG EEC C1 and ENG EEC C2 EICAS messages are not present.
2. Deactivate the associated HPSOV solenoid in the open position (AMM 73-00-00/901).
3. Inspect the associated fuel spar valve actuator located in the rear spar and confirm visually that the valve is closed (AMM 28-00-00/901).
4. Perform an autostart and allow the engine to run at idle for 2 minutes (AMM 71-00-00/201).
5. Position the associated engine FUEL CONTROL switch to CUTOFF and confirm engine begins to spool down approximately 12 seconds after the fuel control switch is set to CUTOFF, and the engine is fully shut down within 20 seconds.

   Note: If the associated HMU FMV shutdown function is not operating normally engine shutdown will take approximately 30-60 seconds; dispatch is not allowed if engine shutdown takes more than 20 seconds.

OPERATIONS (O)

Notes:
1. DO NOT close the associated ENG FUEL VALVE circuit breaker in flight. If the ENG FUEL VALVE circuit breaker is closed and the Fuel Switch is positioned to CUTOFF, the engine cannot be restarted.
2. The ENG FUEL VALVE L or R advisory may momentarily display at engine shutdown. The ENG FUEL VALVE L or R status messages will be displayed and latched.
3. Shutdown of the affected engine will be delayed by approximately 12 seconds.
4. The TCMA function will be inoperative for the associated engine.

1. Flight attendants must be briefed prior to takeoff regarding the engine shutdown delay to ensure that the engine is shut down prior to opening the exits in the event of an evacuation.

73-31-01 Fuel Flow Indications

Interval	Installed	Required	Procedure
C	2	1	**(P) (MV)**

One may be inoperative provided:

a. Flight deck fuel tank quantity indicating systems operate normally.

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

OPERATIONS NOTE

1. FMC Calculated Fuel, associated engine Fuel Used and Fuel Used Total indications will be inoperative.

73-34-01 Engine Fuel Filter Bypass Warning Systems

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

73-34-01-01 RR

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

One may be inoperative provided:

a. It is verified that the malfunction is in the alerting system.

b. Fuel is drained from filter plug and checked for contaminants before each departure.

MAINTENANCE (M)

Verify the malfunction is in the alerting system and before each departure check fuel for contamination (AMM 73-00-00/901).

1. Verify that the malfunction is in the alerting system.
   A. If MAT is available, check for maintenance messages:
      1) For left engine, confirm maintenance message 73-70131 is displayed and 73-90121 is not displayed.
      2) For right engine, confirm maintenance message 73-70132 is displayed and 73-90122 is not displayed.
   B. If MAT is not available, do a continuity check of the fuel filter differential pressure switch:
      1) Open the associated right fan cowl panel (AMM 71-11-04/201).
      2) Gain access to the associated engine's Electronic Engine Control (EEC).
      3) Disconnect electrical connector DM73003E.
      4) Measure the resistance between pin 39 and pin 40 on electrical connector DM73003E.
      5) If resistance is less than 100 ohms, the malfunction is in the alerting system.
      6) Measure the resistance between pin 39 and the connector backshell on the electrical connector DM73003E.
      7) If resistance is less than 100K ohms, the malfunction is in the alerting system.
      8) Connect electrical connector DM73003E to the EEC (AMM 70-50-02/201).
      9) Close the associated right fan cowl panel (AMM 71-11-04/201).

2. Before each departure, check fuel for contaminants at the associated engine low pressure fuel pump filter, which is installed in the fuel oil heat exchanger (FOHE).
   A. Open the associated right fan cowl panel (AMM 71-11-04/201).
   B. Drain a small amount of fuel from the fuel filter and examine for contaminants.
      1) Remove fuel filter plug and drain a small amount of fuel into a container.

         Note: WATER IS NOT A CONTAMINANT THAT CAN CAUSE A FUEL FILTER BYPASS.

      2) Examine the fuel for contaminants (visible particles of solid material).
      3) Install fuel filter drain plug with a new seal (AMM 73-11-13/401).
   C. Close the associated right fan cowl panel (AMM 71-11-04/201).

73-34-01 Engine Fuel Filter Bypass Warning Systems

73-34-01-02 GE

TKK to TKR, TKU to TKZ

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

One may be inoperative provided:

a. Fuel is drained from filter plug and checked for contaminants before each departure.

MAINTENANCE (M)

Check fuel for contamination before each departure (AMM 73-00-00/901).

Note: Dispatch is not allowed with ENG FUEL FILTER L or R status message displayed.

1. Deactivate the leading edge slats is the retracted position (AMM 27-81-00/201).
2. Deactivate the associated thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Open the associated left and right fan cowl panel (AMM 71-11-04/201).
4. Open the associated right thrust reverser (AMM 78-31-00/201).
5. Drain a small amount of fuel from the engine fuel filter bowl and examine for contaminants.

A. Remove fuel filter bleeder drain plug and drain a small amount of fuel into a container.

Note: WATER IS NOT A CONTAMINANT THAT CAN CAUSE A FUEL FILTER BYPASS.

B. Examine the fuel for contaminants (visible particles of solid material).

C. Install fuel filter bleeder drain plug with a new preformed packing (AMM 73-11-02/401).

6. Close the associated right thrust reverser (AMM 78-31-00/201).
7. Close the associated left and right fan cowl panel (AMM 71-11-04/201).
8. Activate the associated thrust reverser after ground maintenance (AMM 78-31-00/201).
9. Activate the leading edge slats (AMM 27-81-00/201).

IGNITION

74-00-01 Ignition Systems

74-00-01A EAI System Operative

Interval	Installed	Required	Procedure
B	4	3	**(P)**

One may be inoperative provided:

a. Associated engine anti-ice system operates normally.

74-00-01 Ignition Systems

74-00-01B EAI System Inoperative

Interval	Installed	Required	Procedure
B	4	3	**(P)**

One may be inoperative provided:

a. Associated engine anti-ice system is inoperative with valve deactivated open.

BLEED AIR

75-24-01 Turbine Case Cooling Air Flow Systems

75-24-01-02 GE

TKK to TKR, TKU to TKZ

75-24-01-02-01 LPT Systems

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

May be inoperative provided:

a. Associated LPT ACC valve is locked in the closed position.

b. Both EECs operate in the normal mode.

MAINTENANCE (M)

Lock the inoperative LPT Active Clearance Control (ACC) valve in the closed position (AMM 75-00-00/901).

1. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
2. Deactivate the associated engine thrust reverser for ground maintenance (AMM 78-31-00/201).
3. Lock the associated LPT ACC valve closed:
   A. Open associated left and right fan cowl panels (AMM 71-11-04/201).
   B. Open associated right thrust reverser (AMM 78-31-00/201).
   C. Lock the inoperative LPT ACC valve (located on the engine core at 3:00) in the closed position by following the placard instructions on the valve.
   D. Close associated right thrust reverser (AMM 78-31-00/201).
   E. Close associated left and right fan cowl panels (AMM 71-11-04/201).
4. Activate the associated engine thrust reverser after ground maintenance (AMM 78-31-00/201).
5. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

1. For both valves deactivated closed:
   A. Increase flight planning fuel by 0.8%.
2. For ETOPS flight planning:
   A. Increase engine inoperative Critical Fuel Reserves by 1.8%.

ENGINE INDICATING

77-11-01 Engine Pressure Ratio Indicating Systems

77-11-01-02 RR

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

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

May be inoperative provided:

a. N2 indication on affected engine operates normally.
b. Both engines must be operated in the alternate (ALTN) mode.
c. Appropriate performance adjustments are applied.

OPERATIONS (O)

1. Use MEL Item 73-21-02-03 (O) procedure.

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

77-12-01 N2 Tachometer Systems

Interval	Installed	Required	Procedure
B	2	1	**(P)**

One may be inoperative provided:

a. EPR and Fuel Flow operate normally.

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

77-22-01 Engine Turbine Overheat Sensors

Interval	Installed	Required	Procedure
C	4	2	**(P)**

One per engine may be inoperative.

77-31-01 Engine Vibration Monitor Systems

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

MAINTENANCE NOTE

1. If desired, the inoperative engine vibration monitor system may be deactivated (AMM 77-00-00/901).
   A. For left engine vibration monitor inoperative, open and collar P110 panel L ENG VIB MON circuit breaker.
   B. For right engine vibration monitor inoperative, open and collar P210 panel R ENG VIB MON circuit breaker.

ENGINE EXHAUST

78-31-01 Thrust Reversers

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

One may be inoperative provided:

a. Both sync locks are verified in the locked position.
b. One locking actuator on each sleeve is verified in the locked position.
c. Inoperative reverser is secured in the forward thrust position.
d. Appropriate performance adjustments are applied.

MAINTENANCE (M)

Deactivate and secure the inoperative reverser (AMM 78-00-00/901).

1. For left engine reverser:
   A. Open and collar P110 panel L ENG T/R CTRL circuit breaker.
2. For right engine reverser:
   A. Open and collar P210 panel R ENG T/R CTRL circuit breaker.
3. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201). TKK to TKR, TKU to TKZ
4. Gain access to the associated reverser isolation valve (left forward access door - strut aft fairing).
5. Deactivate the isolation valve for flight by following the DEACTIVATED MODE instructions placard.
6. Close the associated left forward access door - strut aft fairing.
7. Open the associated left and right fan cowl panels (AMM 71-11-04/201).
8. Remove deactivation pins and install the pins in the left and right reverser sleeves.
9. Pressurize the associated hydraulic system (AMM 29-11-00/201).
10. Verify that the sync lock and at least one of the two locking actuators on each reverser sleeve has the manual unlock handle in the locked position.
11. Depressurize the hydraulic system (AMM 29-11-00/201).
12. Verify that associated engine thrust reverser left and right sleeve positions are within limits using the Electronic Propulsion Control System (EPCS) maintenance page 1/2.
    A. If the associated engine thrust reverser left and right sleeve (T/RL and T/RR) positions for channels A and B are not within the following allowable values, deactivate the associated RVDT.

Note: A dual channel RVDT is installed on the non-locking (upper) hydraulic actuator of each sleeve, which results in four readouts per engine.

TKK to TKR, TKU to TKZ
TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

1) -7.0 to +7.0
2) -5.0 to +5.0

B. For deactivating the associated RVDT:

Note: ONLY ONE RVDT MAY BE DEACTIVATED.

1) Disconnect the electrical connector DM78002 for left sleeve or DM78003 for right sleeve from the RVDT.
2) Cap the connector plug using conductive cap.
3) Stow the connector plug to adjacent structure using wire ties.

13. Close the associated left and right fan cowl panels (AMM 71-11-04/201).

TKK to TKR, TKU to TKZ

14. Activate the leading edge slats (AMM 27-81-00/201).

OPERATIONS (O)

Note: After engine start, the associated ENG REV LIMITED L or R advisory message will be displayed.

1. For airplane performance calculations that include the effect of reverse thrust, adjust performance to account for the inoperative thrust reverser.

78-34-01 Reverse Thrust Lever Interlocks

78-34-01A Interlock Released

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

One may be inoperative released.

OPERATIONS NOTE

1. When using reverse thrust, pull the reverser levers up to the normal interlock position and apply reverse thrust as required when the operative interlock releases.

78-34-01 Reverse Thrust Lever Interlocks

78-34-01B Interlock Retracted

Interval	Installed	Required	Procedure
C	2	1	**(O) (P) (MV)**

One may be inoperative retracted provided:

a. Appropriate performance adjustments are applied.

OPERATIONS (O)

Notes: 1. After engine start, the ENG REV LIMITED L or R advisory message may be displayed for the associated engine.

2. When using reverse thrust, pull the reverse levers up to the normal interlock position and maintain idle reverse, unless asymmetric reverse thrust is required.

3. No performance adjustment is required.

-200,-200ER, -300 -300ER

1. For a wet runway:

   A. Apply the performance adjustments for one thrust reverser inoperative.

78-34-01 Reverse Thrust Lever Interlocks

-200,-200ER, -300

78-34-01-01 -200/-200ER/-300

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

One may be inoperative released or retracted.

OPERATIONS NOTE

1. For interlock inoperative released, when using reverse thrust, pull the reverse levers up to the normal interlock position and apply reverse thrust as required when the operative interlock releases.
2. For interlock inoperative retracted, after engine start, the ENG REV LIMITED L or R advisory message may be displayed for the associated engine. When using reverse thrust, pull the reverse levers up to the normal interlock position and maintain idle reverse, unless asymmetric thrust is required.

DELETION

78-36-01 Reverser Proximity Sensors

Interval	Installed	Required	Procedure
C	14	12	**(P)**

One per engine may be inoperative.

ENGINE OIL

79-21-01 Engine Air/Oil Heat Exchanger Valves

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

Interval	Installed	Required	Procedure
C	2	0	**(M) (O) (P) (MV)**

May be inoperative provided:

a. Associated valve is locked in the open position.

b. Appropriate minimum fuel temperature is maintained during flight.

MAINTENANCE (M)

Lock the inoperative air/oil heat exchanger valve(s) in the open position (AMM 79-00-00/901).

1. Gain access to the air/oil heat exchanger valve, which is located behind and below the engine oil tank, by opening the right fan cowl panel on the associated engine (AMM 71-11-04/201).
2. Lock the air/oil heat exchanger in the open position.
   A. For RR engines not incorporating RR SB 79-C620:
      1) Remove the cotter pin from the lockpin on the air/oil heat exchanger valve.
      2) Pull the lockpin out and remove the lockpin spacer (retain spacer for restoration).
      3) Turn the manual turning device in the clockwise direction until valve is fully open and hold in this position until the lockpin has been installed (Use caution as the valve is heavily spring loaded).
      4) Install the lockpin (without spacer) and release the manual turning device.
      5) Install the cotter pin through the upper hole in the lockpin.
      6) Verify that valve is locked by trying to turn the manual turning device in the counter-clockwise direction.
   B. For RR engines incorporating RR SB 79-C620:
      1) Loosen the manual lock detent screw.
      2) Push the manual lock detent into the air oil heat exchanger body until you feel a click.

         Note: There should be a red area on the butterfly shaft below the head.

      3) Tighten the manual lock detent screw to 11-13 in-lbs.
3. Close the associated right fan cowl panel (AMM 71-11-04/201).

OPERATIONS (O)

1. For both valves locked open:
   A. Increase flight planning fuel by 0.6%.
2. For ETOPS flight planning:
   A. Increase engine inoperative Critical Fuel Reserves by 0.6% for one or both valves inoperative.
3. During flight, maintain fuel temperature above –40 degrees C.

79-31-01 Engine Oil Quantity Indicating Systems

Interval	Installed	Required	Procedure
A	2	1	**(M) (P)**

One may be inoperative provided:

a. It is verified before each departure that the oil tank is filled to the recommended capacity.

b. Oil consumption is within limits.

c. Repairs are made within three flight days.

MAINTENANCE (M)

Before each departure verify that oil level is filled to the recommended level (AMM 79-00-00/901).

1. Before each departure, examine oil level and fill if required (AMM 12-13-01/301).
2. Review engine records to verify that oil consumption is within engine manufacturer's limits (AMM 71-00-00/201) or THAI approved limits (if more restrictive).

79-35-01 Engine Oil Filter Bypass Warning Systems

TKK to TKR, TKU to TKZ

79-35-01-02 GE

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

79-35-01 Engine Oil Filter Bypass Warning Systems

TJA,B,C,D,G,H, TJR to TJW, TKA to TKF

79-35-01-03 RR

Interval	Installed	Required	Procedure
C	4	2	**(M) (P)**

One per engine may be inoperative provided:

a. It is verified that the malfunction is in the alerting system.

b. Associated master chip detector is checked for contaminants before each departure.

MAINTENANCE (M)

Verify that the malfunction is in the alerting system and inspect the master magnetic chip detector before each departure (AMM 79-00-00/901).

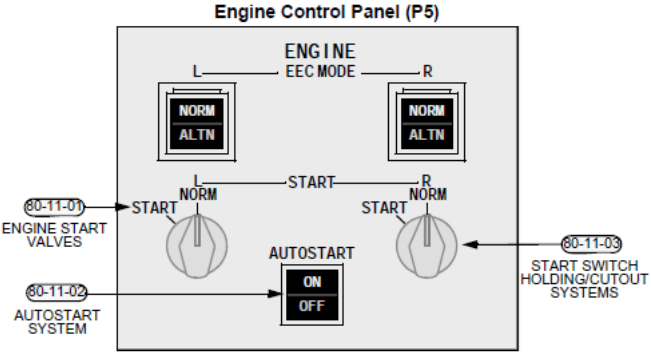
1. Verify that the malfunction is in the alerting system.
   A. If the MAT is available:
      1) Confirm the following maintenance message is displayed.
         – For left engine scavenge filter, 79-84911.
         – For right engine scavenge filter, 79-84912.
         – For left engine HP filter, 79-74411.
         – For right engine HP filter, 79-74412.
      2) Confirm the following maintenance message is not displayed.
         – For left engine scavenge filter, 79-94861.
         – For right engine scavenge filter, 79-94862.
         – For left engine HP filter, 79-94361.
         – For right engine HP filter, 79-94362.
   B. If the MAT is not available:
      1) Open the left fan cowl panel and gain access to the associated engine Electronic Engine Control (EEC) (AMM 71-11-04/201).

2) For the ENG SCAV OIL FILT L or ENG SCAV OIL FILT R status message displayed:
   a. Perform a continuity check of the scavenge oil filter differential pressure switch:
      i) Disconnect electrical terminal DM73003G from the EEC.
      ii) Measure the resistance between pin 23 and pin 24 on electrical connector DM73003G.
      iii) If the resistance is less than 100 ohms, the malfunction is in the alerting system.
      iv) Measure the resistance between pin 24 and ground.
      v) If the resistance is less than 100 Kohms, the malfunction is in the alerting system.
      vi) Connect the electrical connector DM73003G to the EEC (AMM 70-50-02/201).
3) For the ENG HP OIL FILT L or ENG HP OIL FILT R status message displayed:
   a. Perform a continuity check of the HP oil filter differential pressure switch.
      i) Disconnect electrical terminal DM73003A from the EEC.
      ii) Measure the resistance between pin 23 and pin 24 on electrical connector DM73003A.
      iii) If the resistance is less than 100 ohms, the malfunction is in the alerting system.
      iv) Measure the resistance between pin 24 and the connector backshell.
      v) If the resistance is less than 100 Kohms, the malfunction is in the alerting system.
      vi) Connect the electrical connector DM73003A to the EEC (AMM 70-50-02/201).
4) Close the associated left fan cowl panel (AMM 71-11-04/201).

2. Perform a Master Magnetic Chip Detector Inspection before each departure (AMM 79-00-00/601).

STARTING

General Locations



80-11-01 Engine Start Valves

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

One may be inoperative closed.

MAINTENANCE (M)

Manually open and close the valve as directed by the flight crew (AMM 80-00-00/901).

1. For GE: TKK to TKR, TKU to TKZ
   A. Start the associated engine by manual override of starter air valve (AMM 71-00-00/201).
   B. Gain access to the starter air valve manual control handle by opening associated engine center thrust reverser latch access panel (415JB for left engine or 425JB right engine).
   C. Unstow the starter air valve manual control handle.
   D. Establish communications with the flight crew.
   E. Upon command from the flight crew:
      1) Engage the starter air valve manual control handle, turn the starter air valve to the open position (clockwise—one and one-quarter turns) and hold. Wear goggles, gloves and protective clothing.
   F. Upon command from the flight crew:
      1) Close the starter air valve.
   G. When the manual override start is complete:
      1) Stow the starter air valve manual control handle and close the center thrust reverser latch access panel.
2. For RR: TJA,B,C,D,G,H, TJR to TJW, TKA to TKF
   A. Start the associated engine by manual override of starter air valve (AMM 71-00-00/201).
   B. Gain access to the manual override start port located on the left fan cowl panel.
   C. Establish communications with the flight crew.
   D. Upon command from the flight crew:
      1) Insert the manual start square drive in the manual override start port, turn the starter air valve to the open position and hold. Wear goggles, gloves and protective clothing.

E. Upon command from the flight crew:

1) Close the starter air valve.

F. When the manual override start is complete:

1) Remove the manual override square drive from the manual override start port.

OPERATIONS (O)

1. Start the associated engine using normal engine start (Autostart) procedures, with directions to ground crew for manually opening and closing the inoperative engine start valve:

A. Establish communications with ground crew.

B. Position engine start selector to START and advise ground crew to open start valve.

C. Advise ground crew to close start valve as follows:

TKK to TKR, TKU to TKZ

1) For GE:

a. 62% N2.

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

2) For RR:

a. 50% N3.

2. For inflight start of the associated engine:

A. Use a windmilling start.

80-11-02 Autostart System

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

May be inoperative provided:

a. Manual start procedures are established and used.

Note: When the AUTOSTART switch is selected OFF, the ENG AUTOSTART OFF advisory message is normally displayed. However, some system failures can result in the ENG AUTOSTART OFF advisory message not being displayed when the AUTOSTART switch is selected OFF. If the autostart system is known to be inoperative, dispatch per the autostart system inoperative provisions of this item. If the autostart system is otherwise operational, consider the autostart switch position indication inoperative and dispatch the airplane using MEL Item 80-11-02-01.

OPERATIONS (O)

1. Use the Manual Engine Start Supplementary Procedure.
2. Leave AUTOSTART switch OFF.

80-11-02 Autostart System

80-11-02-01 Autostart Switch Position Indication

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

May be inoperative provided:

a. Engine autostart switch is selected ON.

80-11-02 Autostart System

80-11-02-02 AUTOSTART Switch Lights

80-11-02-02-01 OFF Light

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

80-11-02 **Autostart System**

80-11-02-02 **AUTOSTART Switch Lights**

80-11-02-02-02 **ON Light**

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

80-11-03 Start Selector Holding/Cutout Systems

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

MAINTENANCE (M)

For AIMS status displayed due to certain failure modes of the start selector holding/cutout relay, the AIMS status message must be cleared using the following procedure.

1. Remove power from both AIMS cabinets by opening P11 panel AIMS L-1, AIMS L-2, AIMS L-3, AIMS L-4, AIMS R-1, AIMS R-2, AIMS R-3 and AIMS R-4 circuit breakers.
2. Remove the Cargo Fire/Engine Control Module (M80001) from the P5 panel without disconnecting the electrical connectors (AMM 26-22-04/401).
3. Disconnect, cap and stow the associated engine start selector wire:
   A. For the left engine:
      1) Disconnect electrical connector DS80100 from selector S80100.
      2) Remove, cap and stow wire W1051-0557-24 from pin 2.
      3) Re-install electrical connector DS80100 on selector S80100.
   B. For the right engine:
      1) Disconnect electrical connector DS80200 from selector S80200.
      2) Remove, cap and stow wire W1052-0557-24 from pin 2.
      3) Re-install electrical connector DS80200 on selector S80200.
4. Reinstall the Cargo Fire/Engine Control Module (M80001) on the P5 panel (AMM 26-22-04/401).
5. Restore power to the AIMS cabinets by closing P11 panel AIMS L-1, AIMS L-2, AIMS L-3, AIMS L-4, AIMS R-1, AIMS R-2, AIMS R-3 and AIMS R-4 circuit breakers.
6. Verify that the AIMS status message has cleared and no additional status messages associated with the Cargo Fire/Engine Control Module are displayed.
7. For engine starting:
   A. The start selector must be manually held in the START position.

OPERATIONS (O)

1. Manually open and close the associated engine start valve:
   A. For GE:

TKK to TKR, TKU to TKZ

1) Position START selector to START and hold if required.
2) Position START selector to NORM at 62% N2.

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

B. For RR:
1) Position START selector to START and hold if required.
2) Position START selector to NORM at 50% N3.

CDL Definitions

1. Item Definitions. Item numbers are based on the Air Transport Association (ATA) Specification Number 100 and are numbered sequentially.

   A. "Item" means the equipment or component listed in the Item Heading.

   B. "Number Installed" (**Installed**) is the number (quantity) of items normally installed in the aircraft.

   C. "Number Required for Dispatch" (**Required**) is the minimum number (quantity) of items required for operation provided the conditions specified are met. "See below" indicates a variable number (quantity) of required item and the condition(s) for dispatch is stated in the Remarks or Exeptions statement(s) immediately below the required column.

   D. "Remarks or Exceptions" includes a statement either prohibiting or permitting operation with a specific number of items/components missing, provisos (conditions and limitations) for such operation, and appropriate notes. "Notes:" provides additional information for crewmember or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve THAI of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.

2. "(M)" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item(s) missing.

3. "(O)" symbol indicates a requirement for a specific operations procedure which must be accomplished in planning for and/or operating with the listed item(s) missing.

4. "(MV)" symbol indicates a MAINTAVI message must be sent as soon as possible to inform appropriate departments of the applicable performance penalty/limitations.

5. "N/A" symbol in the **Interval** column indicates repair interval category is not applicable for CDL items.

6. "N/A" symbol in the **Procedure** column indicates procedure does not exist for the associated CDL items.

Limitations

The associated limitations must be listed on a placard affixed in the cockpit in clear view of the P-i-C 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 P-i-C will be notified of each operation with a missing parts by listing the missing parts in the flight or dispatch release. Maintenance 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 takeoff performance decrements are to be applied to the performance limited takeoff weights determined from:

- Field length, first segment climb, second segment climb, final segment climb, or obstacles in the takeoff flight path.

The enroute performance decrements are to be applied to the weight limit determined from:

- Enroute, one-engine-inoperative climb performance.

The landing performance decrements are to be applied to the performance limited landing weights determined from:

- Landing field length, landing climb, or approach climb.

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 46 kg. 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
260 KIAS	1.7
280 KIAS	2.3
300 KIAS	3.1

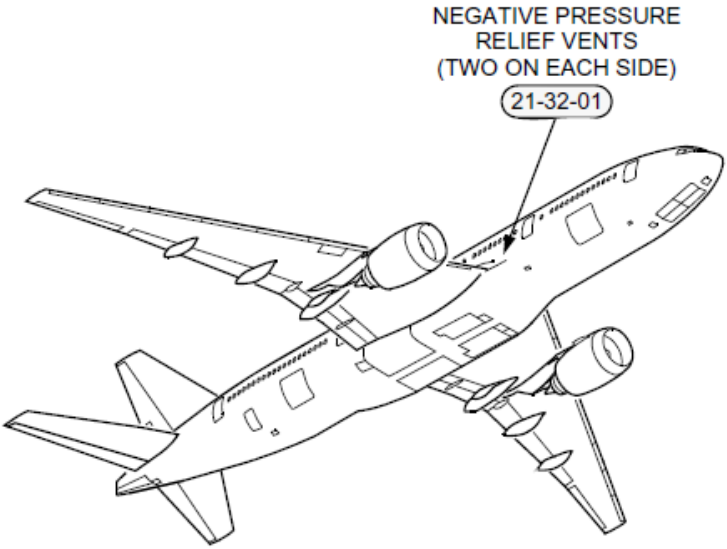
Diversion Speed	Factor
320 KIAS	3.7

Enroute Fuel Mileage Effects

The drag effects of many 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 0.25% per 454 kg of enroute climb weight penalty (non-factored penalty) may be used to account for the drag increase. However, the increase in flight planning fuel of less than 0.5% can be considered negligible.

AIR CONDITIONING

General Locations



21-32-01 Negative Pressure Relief Vent

Interval	Installed	Required	Procedure
N/A	4	See below	**N/A**

Any number may be missing.

a. Dispatch using MEL Item 21-32-02.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

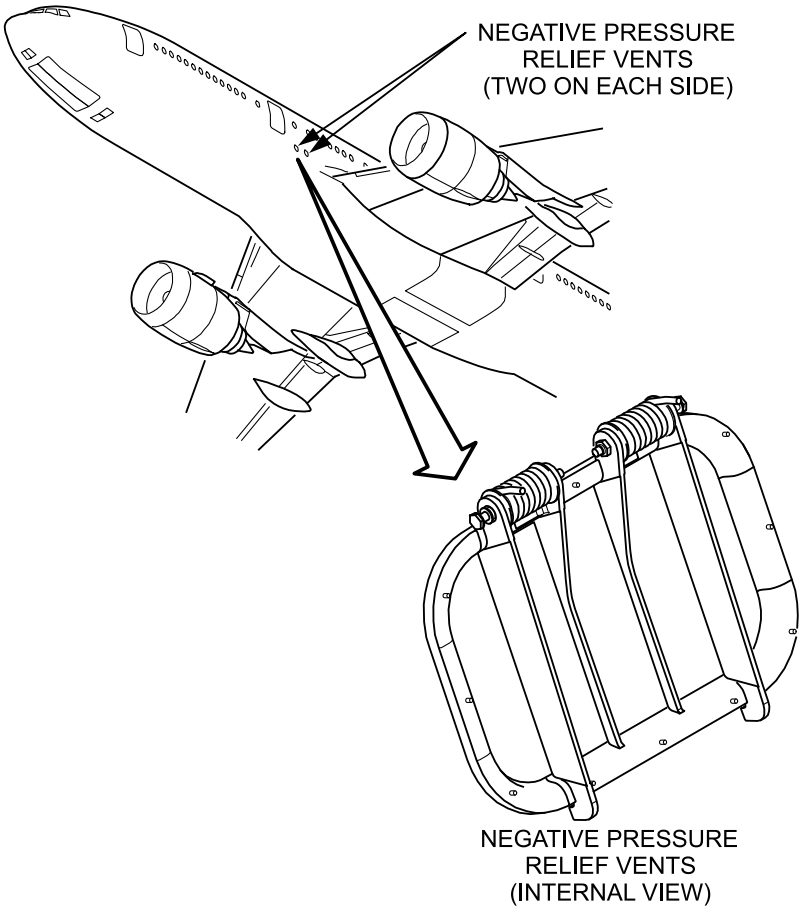
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION


NEGATIVE PRESSURE
RELIEF VENTS
(TWO ON EACH SIDE)
NEGATIVE PRESSURE
RELIEF VENTS
(INTERNAL VIEW)

21-52-01 ECS Ram Air Exhaust Louver

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
N/A	6	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

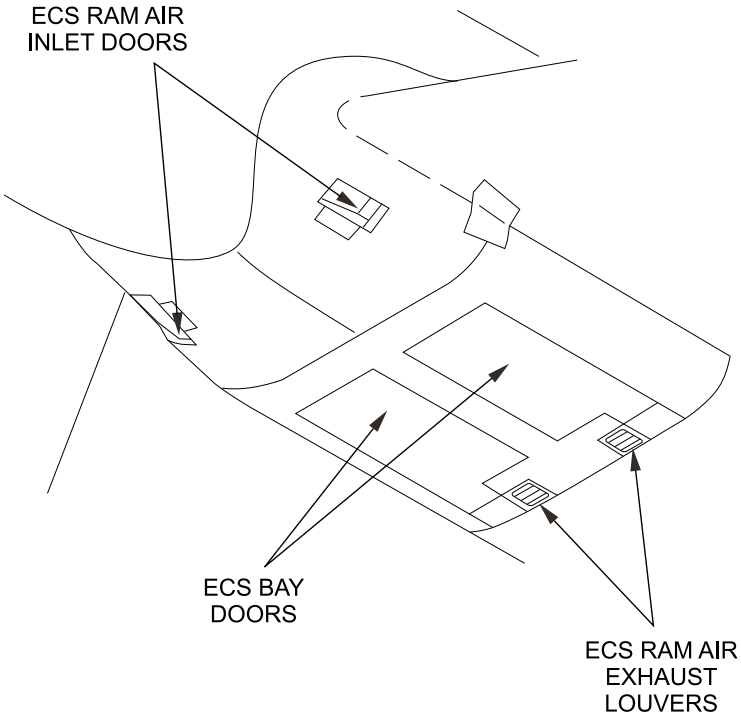
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION


ECS RAM AIR
INLET DOORS
ECS BAY
DOORS
ECS RAM AIR
EXHAUST
LOUVERS

COMMUNICATIONS

23-61-01 Static Discharger

23-61-01-01 Static Discharger -200,-200ER, -300

Interval	Installed	Required	Procedure
N/A	50	See below	**N/A**

A maximum of 5 static dischargers may be missing with the following exceptions:

a. Two of the five most outboard dischargers must not be missing from each wing.

b. Two of the four most outboard dischargers must not be missing from each horizontal stabilizer.

c. Two of the four most top dischargers must not be missing from the vertical stabilizer.

d. Performance limited weights are reduced by the following:

Note: For operations with a wing tip fairing removed (CDL Item 57-31-02) or for operations with the raked tips removed (CDL Item 57-31-03), the static dischargers that are removed with these items are not considered missing. The remaining static dischargers must satisfy the requirements of this item.

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

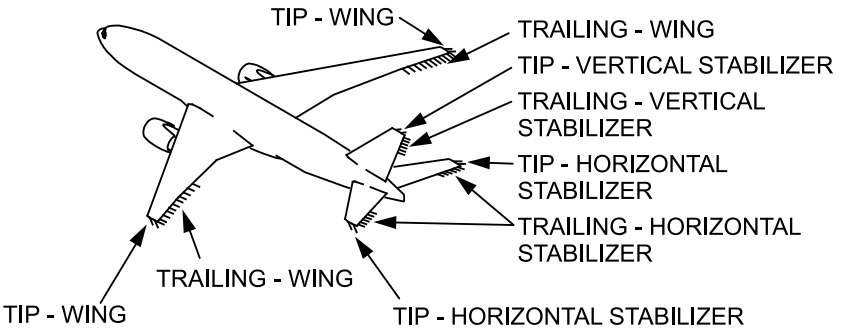
APPROACH

No penalty

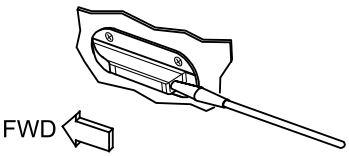
LANDING

No penalty

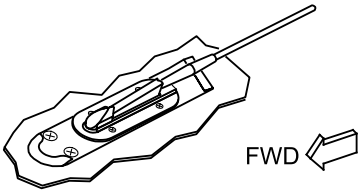
LOCATION



STATIC DISCHARGER LOCATIONS



TIP TYPE
STATIC DISCHARGER



TRAILING TYPE
STATIC DISCHARGER

23-61-01 Static Discharger

-300ER **23-61-01-02 Static Discharger**

Interval	Installed	Required	Procedure
N/A	54	See below	**N/A**

A maximum of 5 static dischargers may be missing with the following exceptions:

a. Two of the five most outboard dischargers must not be missing from each wing.

b. Two of the four most outboard dischargers must not be missing from each horizontal stabilizer.

c. Two of the four most top dischargers must not be missing from the vertical stabilizer.

d. Performance limited weights are reduced by the following:

Note: For operations with a wing tip fairing removed (CDL Item 57-31-02) or for operations with the raked tips removed (CDL Item 57-31-03), the static dischargers that are removed with these items are not considered missing. The remaining static dischargers must satisfy the requirements of this item.

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

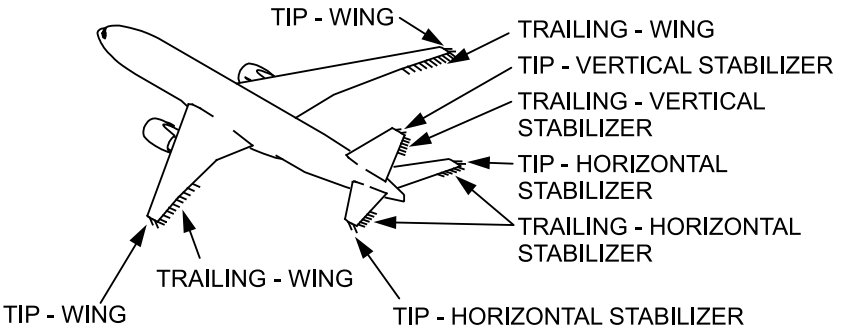
APPROACH

No penalty

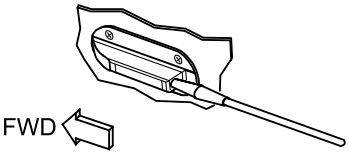
LANDING

No penalty

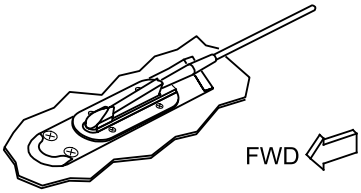
LOCATION



STATIC DISCHARGER LOCATIONS



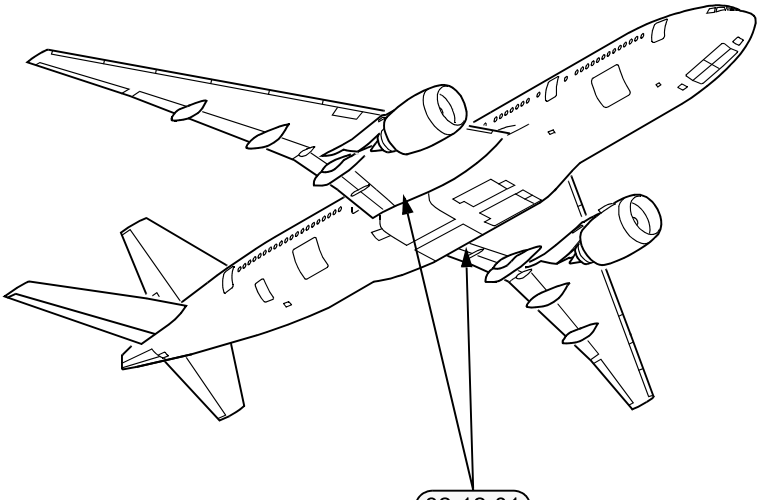
TIP TYPE
STATIC DISCHARGER



TRAILING TYPE
STATIC DISCHARGER

LANDING GEAR

General Locations



32-12-01 Main Landing Gear Drag Strut Door

32-12-01-01 Main Landing Gear Drag Strut Door -200

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL Items 32-12-02 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

953 kg

ENROUTE CLIMB

2,042 kg

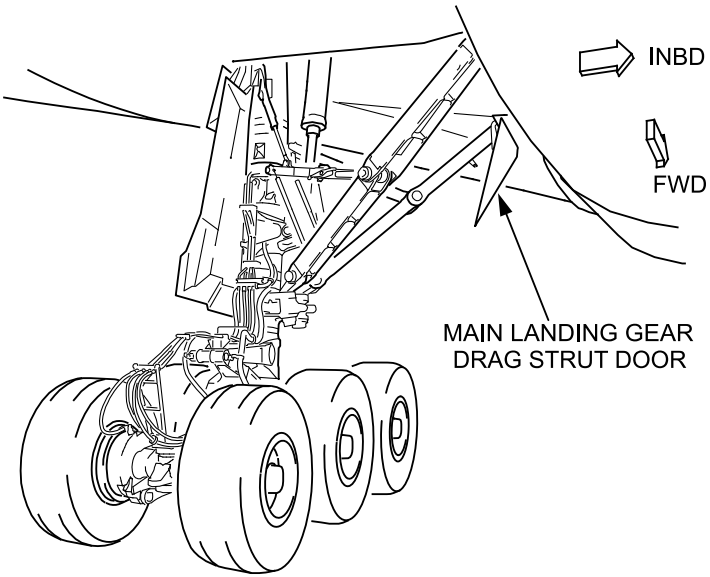
APPROACH

69 kg

LANDING

69 kg

LOCATION



LEFT MAIN LANDING GEAR

32-12-01 Main Landing Gear Drag Strut Door

-200ER **32-12-01-02 Main Landing Gear Drag Strut Door**

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL items 32-12-02 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

1,497 kg

ENROUTE CLIMB

2,314 kg

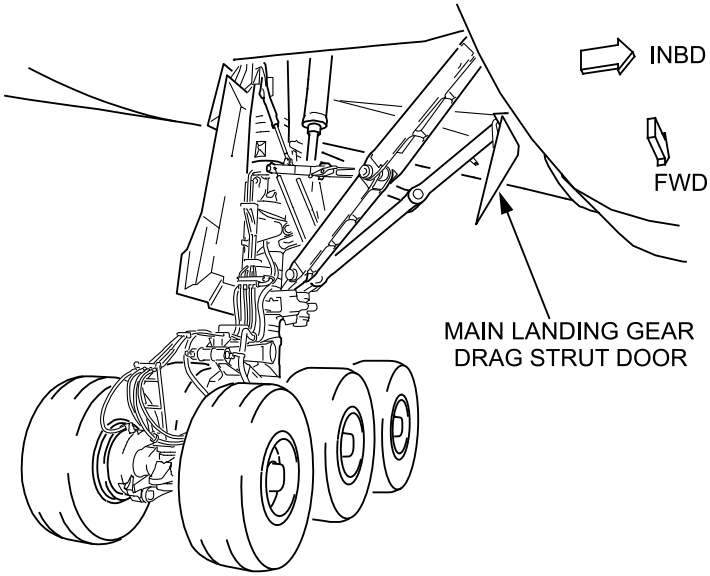
APPROACH

69 kg

LANDING

69 kg

LOCATION



LEFT MAIN LANDING GEAR

32-12-01 Main Landing Gear Drag Strut Door

-300 **32-12-01-03 Main Landing Gear Drag Strut Door**

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL Items 32-12-02 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

1,089 kg

ENROUTE CLIMB

2,178 kg

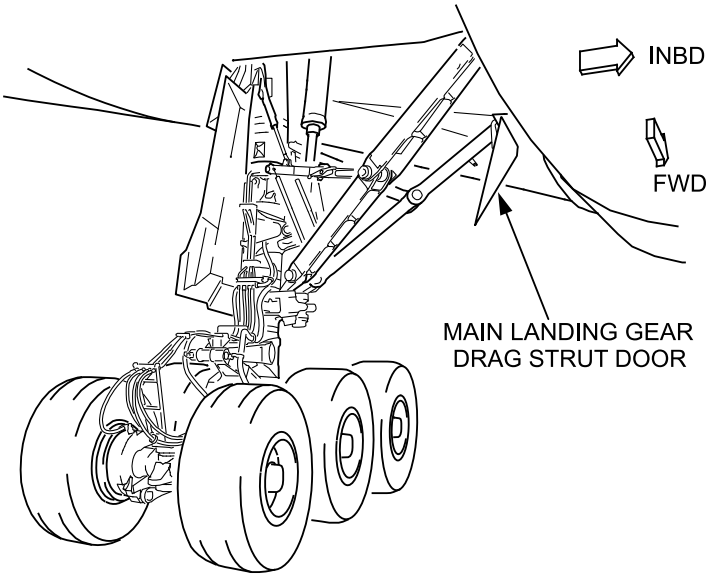
APPROACH

69 kg

LANDING

69 kg

LOCATION



LEFT MAIN LANDING GEAR

32-12-01 Main Landing Gear Drag Strut Door

32-12-01-04 Main Landing Gear Drag Strut Door -300ER

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Alternate Gear Down Dispatch switch (Main Equipment Center, if installed) is placed in VMO position. The Warning Electronics System (WES) will set VMO/MMO to 270 KIAS/0.73 Mach and EICAS memo message VMO GEAR DOWN will be displayed.

c. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL Items 32-12-02 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

1,180 kg

ENROUTE CLIMB

2,450 kg

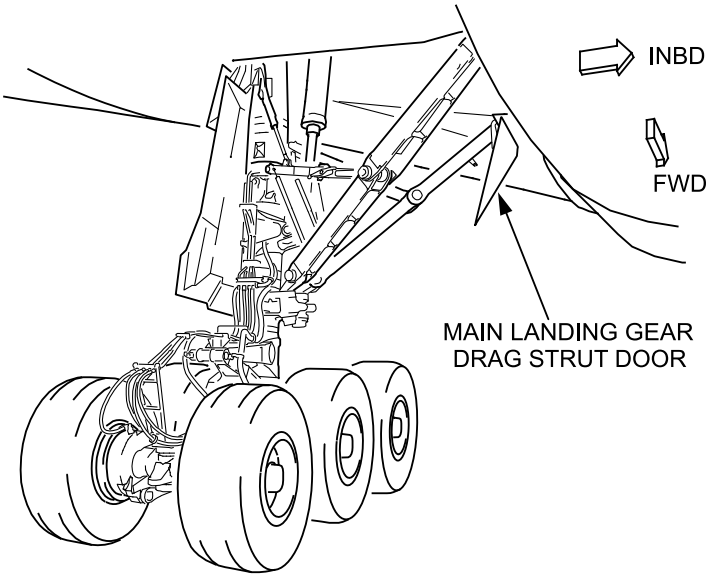
APPROACH

69 kg

LANDING

69 kg

LOCATION



LEFT MAIN LANDING GEAR

32-12-02 Main Landing Gear Trunnion Door

32-12-02-01 Main Landing Gear Trunnion Door -200

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL Items 32-12-01 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

976 kg

ENROUTE CLIMB

2,064 kg

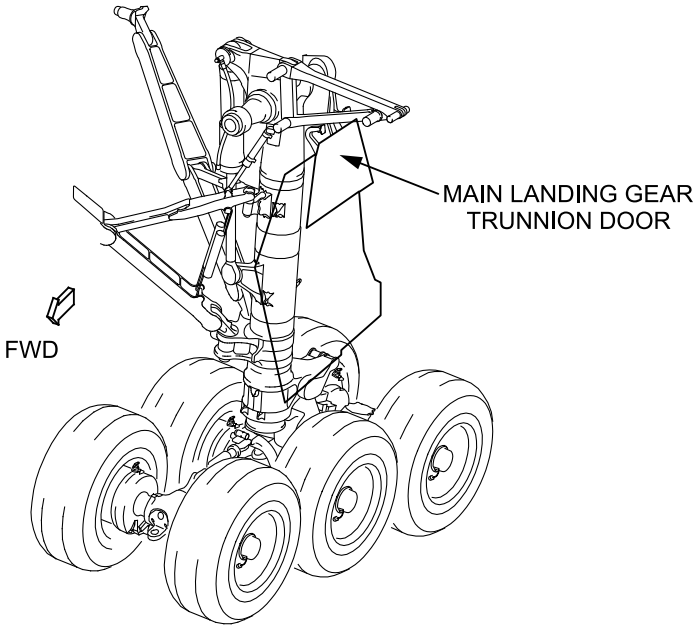
APPROACH

69 kg

LANDING

69 kg

LOCATION



LEFT MAIN LANDING GEAR

32-12-02 Main Landing Gear Trunnion Door

-200ER **32-12-02-02 Main Landing Gear Trunnion Door**

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL Items 32-12-01 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

1,520 kg

ENROUTE CLIMB

2,337 kg

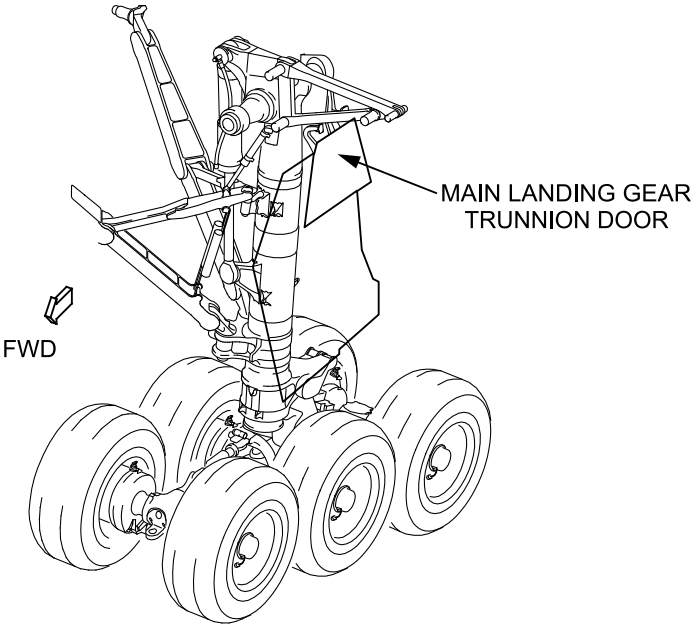
APPROACH

91 kg

LANDING

91 kg

LOCATION



LEFT MAIN LANDING GEAR

32-12-02 Main Landing Gear Trunnion Door

-300 **32-12-02-03 Main Landing Gear Trunnion Door**

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL Items 32-12-01 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

1,112 kg

ENROUTE CLIMB

2,200 kg

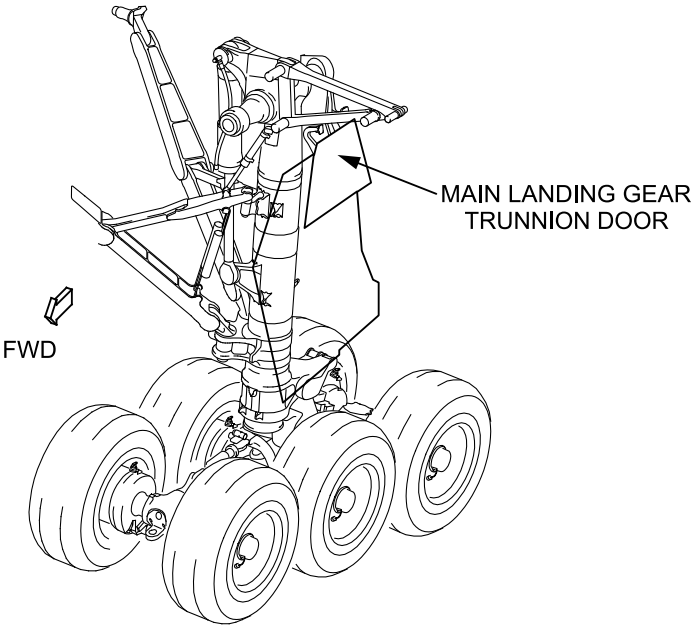
APPROACH

69 kg

LANDING

69 kg

LOCATION



LEFT MAIN LANDING GEAR

32-12-02 Main Landing Gear Trunnion Door

32-12-02-04 Main Landing GearTrunnion Door -300ER

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

Revenue flight is not permitted. One may be missing.

a. The Maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

b. Alternate Gear Down Dispatch switch (Main Equipment Center, if installed) is placed in VMO position. The Warning Electronics System (WES) will set VMO/MMO to 270KIAS/0.73 Mach and EICAS memo message VMO GEAR DOWN will be displayed.

c. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with CDL Items 32-12-01 or 57-51-01.

OPERATIONS (O)

TAKE-OFF

1,180 kg

ENROUTE CLIMB

2,473 kg

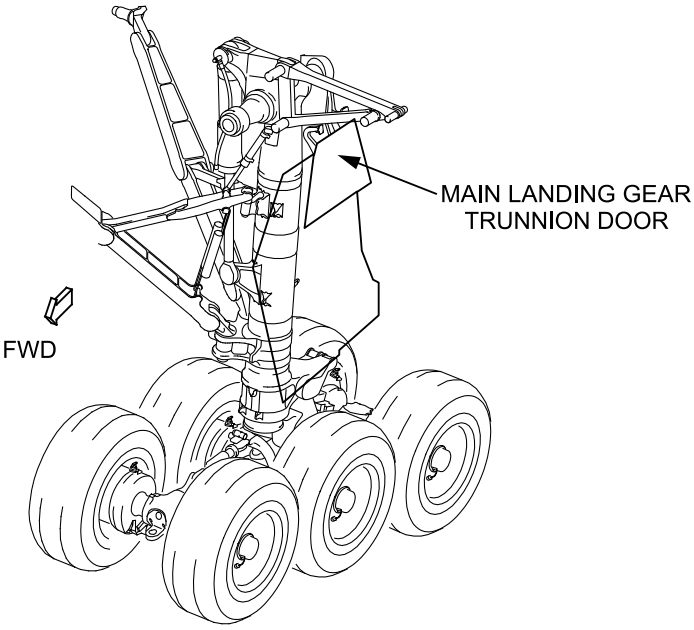
APPROACH

69 kg

LANDING

69 kg

LOCATION



LEFT MAIN LANDING GEAR

32-45-01 Wheel Hubcaps

Interval	Installed	Required	Procedure
N/A	14	See below	**N/A**

One main wheel hubcap per each six wheel main gear truck may be missing.

a. For associated Antiskid Wheelspeed Transducer inoperative, dispatch using MEL Item 32-42-02.

b. For associated Tire Pressure Indication System inoperative, dispatch using MEL Item 32-49-01.

One or both nose wheel hubcaps may be missing.

a. For associated Tire Pressure Indication System inoperative, dispatch using MEL Item 32-49-01.

Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

69 kg

ENROUTE CLIMB

91 kg

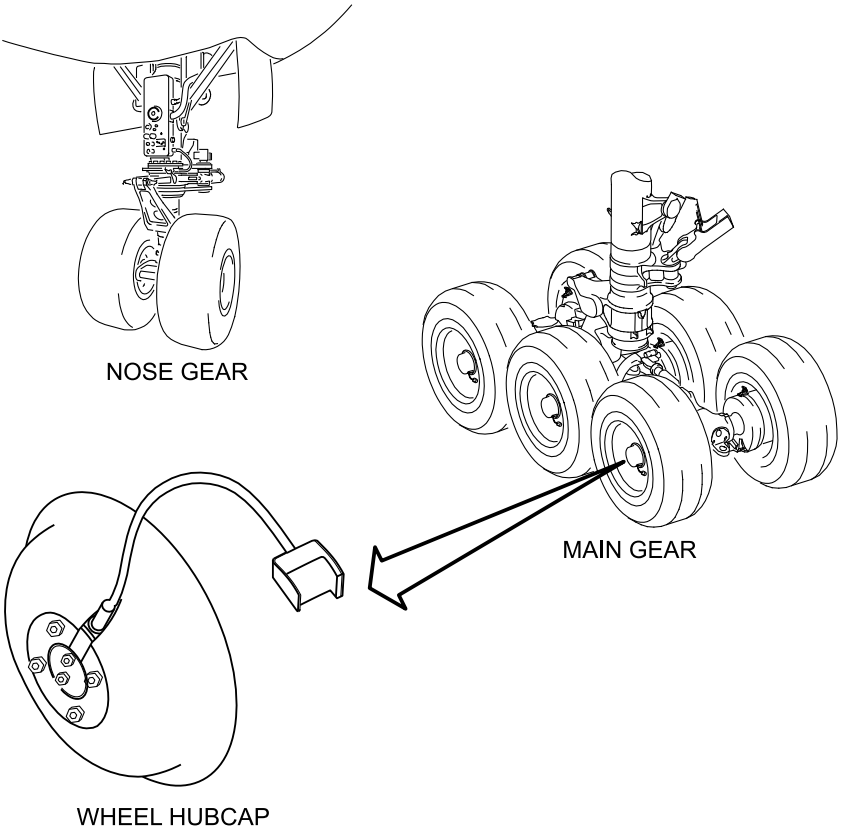
APPROACH

69 kg

LANDING

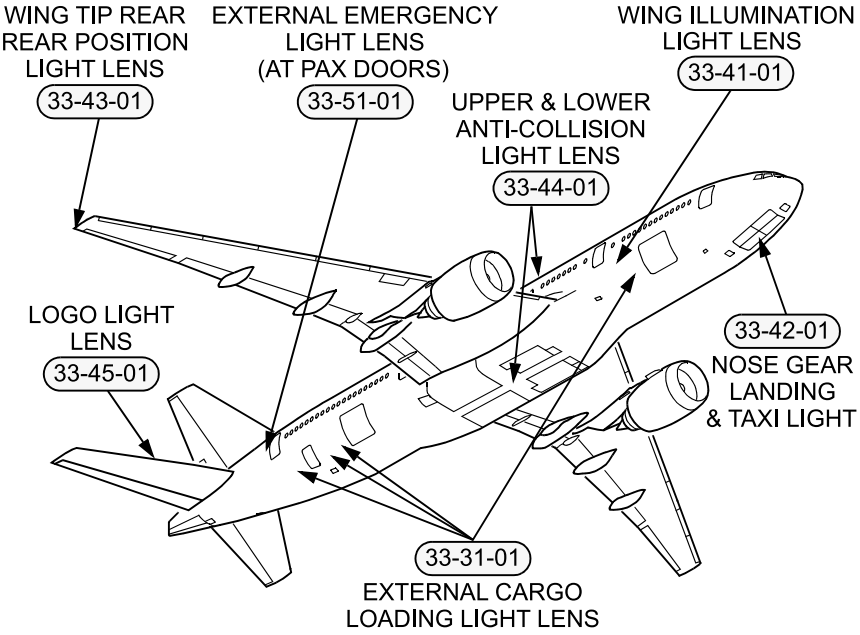
69 kg

LOCATION



LIGHTS

General Locations



33-31-01 External Cargo Loading Light Lens

Interval	Installed	Required	Procedure
N/A	4	See below	**N/A**

Any number may be missing.

a. If the associated lamp is inoperative, dispatch using MEL item 33-31-02.

b. Performance limited weights are reduced by the following:

Note: External cargo lights operate normally with the lenses missing.

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

APPROACH

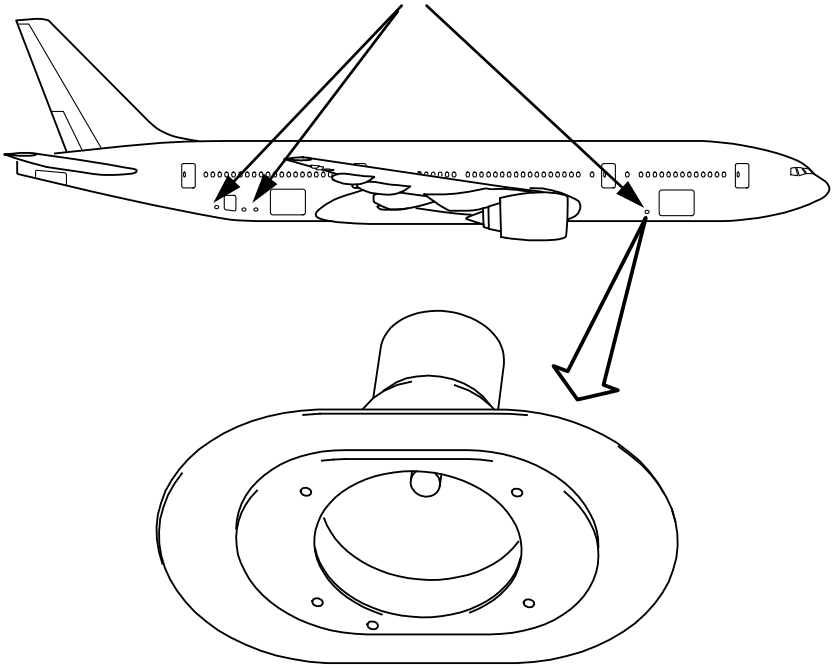
Negligible penalty

LANDING

Negligible penalty

LOCATION

EXTERNAL CARGO LOADING LIGHT LENS
(777F MAIN DECK CARGO LIGHT NOT SHOWN)



EXTERNAL CARGO LOADING LIGHT LENS

33-41-01 Wing Illumination Light Lens

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. If the associated lamp is inoperative, dispatch using MEL item 33-41-01.

b. Performance limited weights are reduced by the following:

Note: Wing illumination lights operate normally with the lenses missing.

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

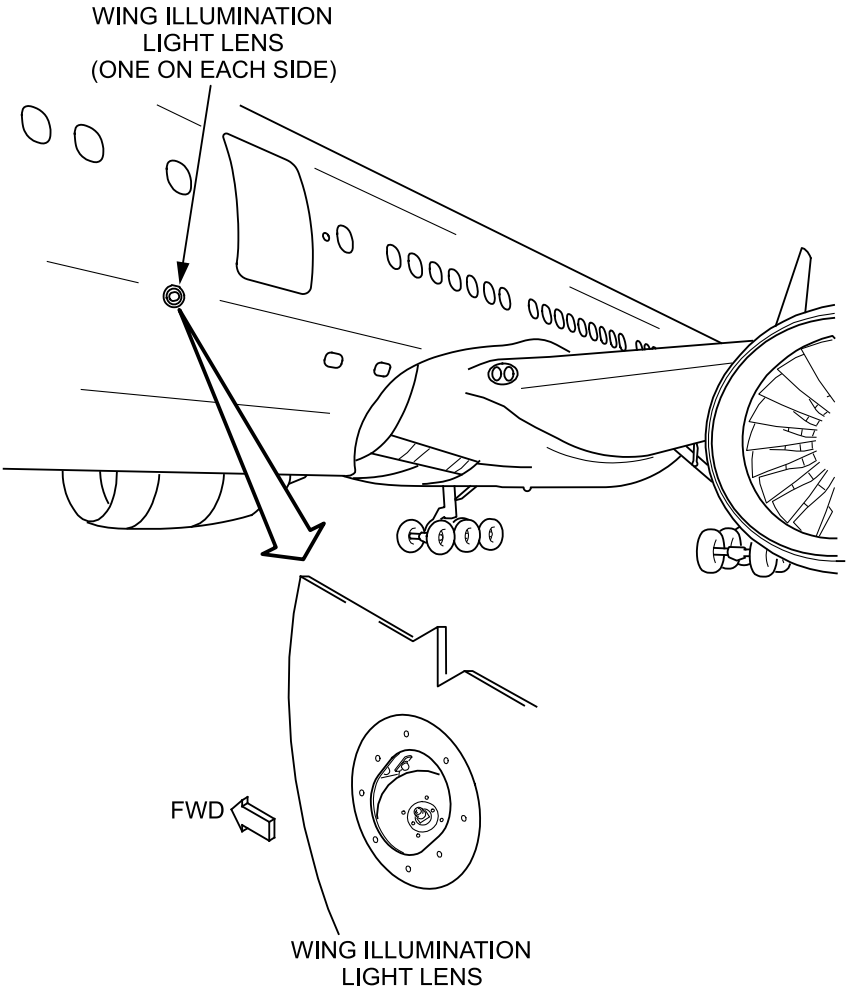
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION


WING ILLUMINATION
LIGHT LENS
(ONE ON EACH SIDE)
FWD
WING ILLUMINATION
LIGHT LENS

33-42-01 Nose Gear Landing & Taxi Light

Interval	Installed	Required	Procedure
N/A	4	See below	**N/A**

Any number may be missing.

a. For nose gear taxi lights inoperative, dispatch using MEL item 33-42-01.

b. For nose gear landing lights inoperative, dispatch using MEL item 33-42-02.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

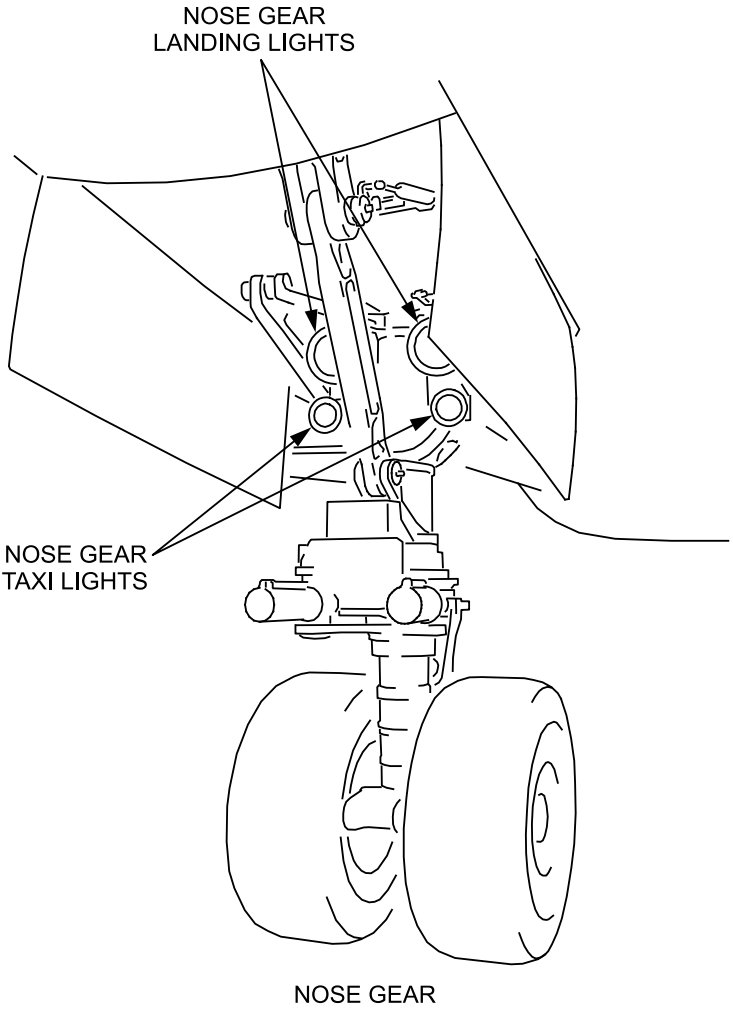
APPROACH

No penalty

LANDING

No penalty

LOCATION



33-43-01 Wing Tip Rear Position Light Lens

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. For a missing lens, disconnect electrical power and remove light bulb, reflector, lens cover and lens cover support. Cover the light assembly opening with speed tape.

b. For position lights inoperative, dispatch using MEL Item 33-43-01.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

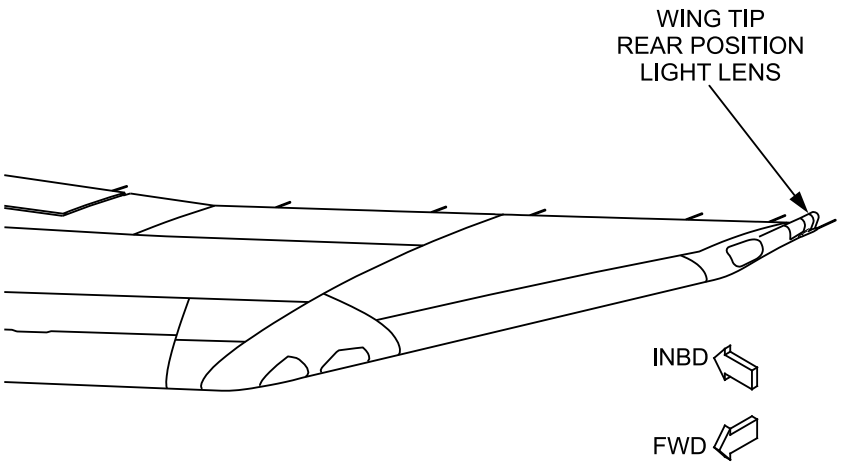
APPROACH

No penalty

LANDING

No penalty

LOCATION



33-43-02 Tail Cone Position Light Lens

Interval	Installed	Required	Procedure
N/A	1	See below	**N/A**

Any number may be missing.

a. For missing lens, Pull and collar the tail cone Position light circuit breaker, C33020, and cover the light assembly opening with speeding tape.

b. For tail cone position light inoperative, dispatch using MEL Item 33-43-02.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible Penalty

ENROUTE CLIMB

Negligible Penalty

APPROACH

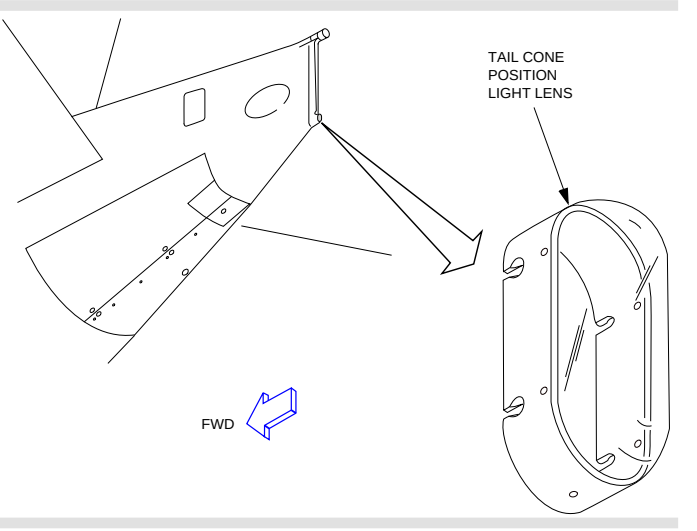
Negligible Penalty

LANDING

Negligible Penalty

LOCATION

DELETION



33-44-01 Upper Or Lower Fuselage Anti-Collision Light Lens

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. For a missing lens, disconnect electrical power, remove light bulb, reflector, lens cover and lens cover support, and cover the rest of the light assembly intact opening with speed tape.

b. For anti-collision lights inoperative, dispatch using MEL Item 33-44-01.

c. CDL Item 33-44-02 may not be missing.

d. Performance limited weights are reduced by the following:

Note: This item may not be missing in combination with item 33-44-02.

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

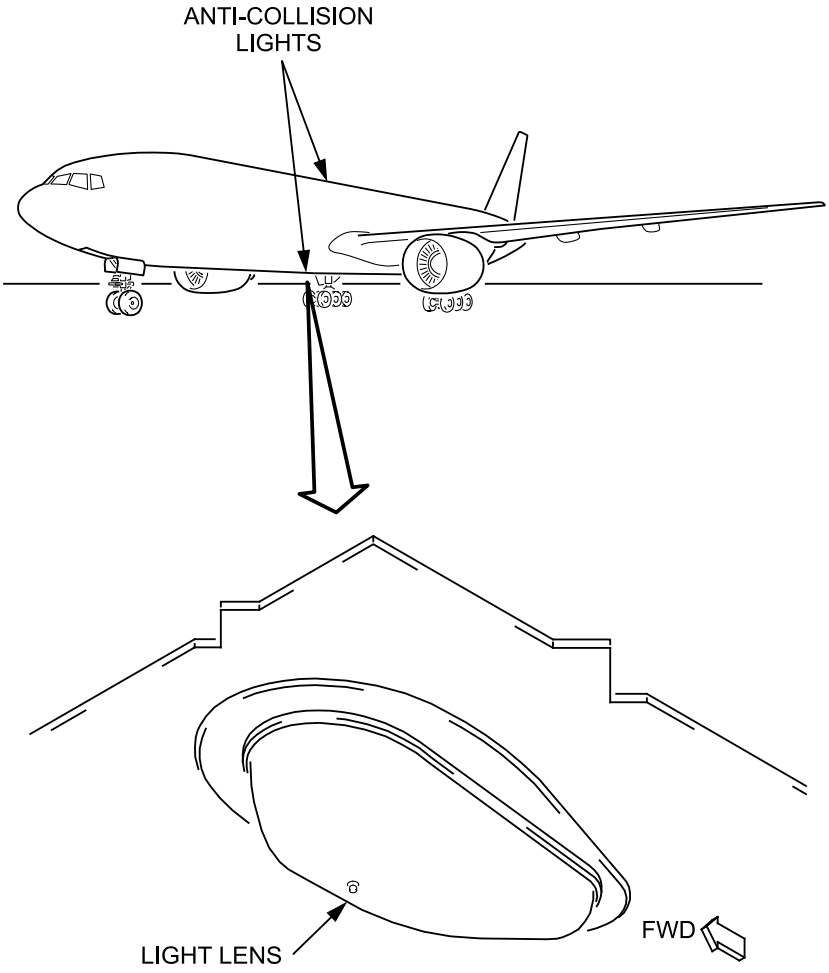
APPROACH

No penalty

LANDING

No penalty

LOCATION



33-44-02 Tail Cone Anti-Collision Light Lens

Interval	Installed	Required	Procedure
N/A	1	See below	**N/A**

One may be missing.

a. For a missing lens, unplug (cap and stow) the connector to the tail cone anti-collision light, and cover the light opening with speed tape.

b. For anti-collision lights inoperative, dispatch using MEL Item 33-44-01.

c. CDL Item 33-44-01 may not be missing.

d. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible Penalty

ENROUTE CLIMB

Negligible Penalty

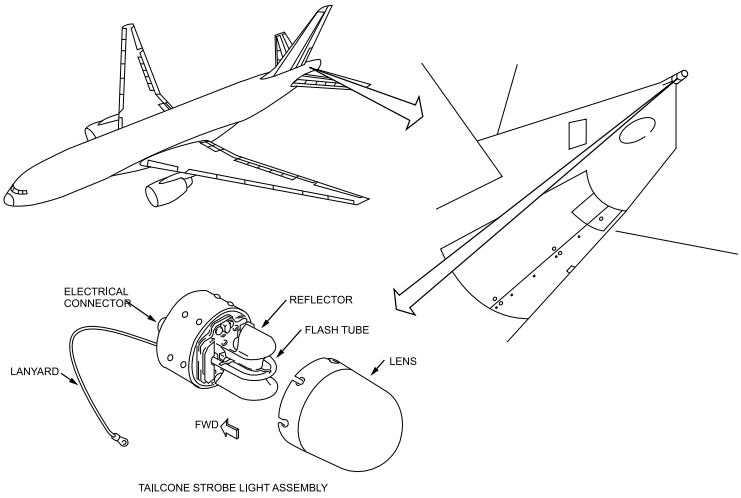
APPROACH

Negligible Penalty

LANDING

Negligible Penalty

LOCATION



TAILCONE STROBE LIGHT ASSEMBLY

33-45-01 Logo Light Lens

Interval	Installed	Required	Procedure
N/A	4	See below	**N/A**

Any number may be missing.

a. Missing lens should be covered by speed tape (Permacel II or 3M 425) and inspected every other flight.

b. Open and collar P210 panel LOGO LT CTRL and LOGO LTS circuit breakers.

c. For logo lights inoperative, dispatch using MEL item 33-45-01.

d. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

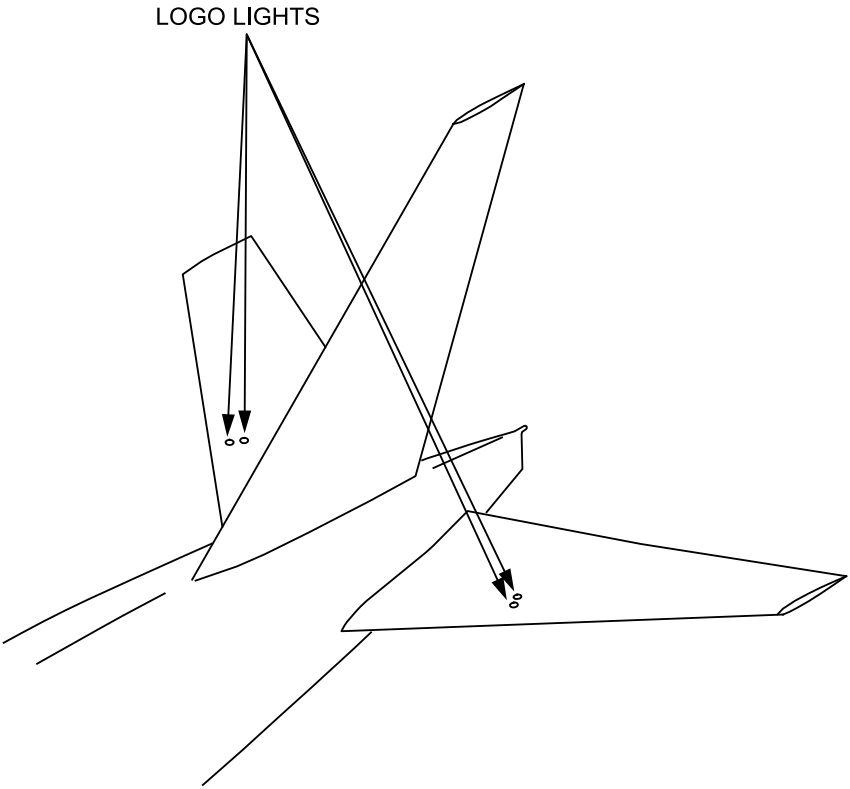
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



33-51-01 External Emergency Light Lens

33-51-01-01 External Emergency Light Lens

-200,-200ER

Interval	Installed	Required	Procedure
N/A	8	7	**N/A**

One may be missing.

a. Emergency slide lights do not operate normally with the lenses missing.

b. If the associated lens is missing or the lamp is inoperative, dispatch using MEL item 33-51-02.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

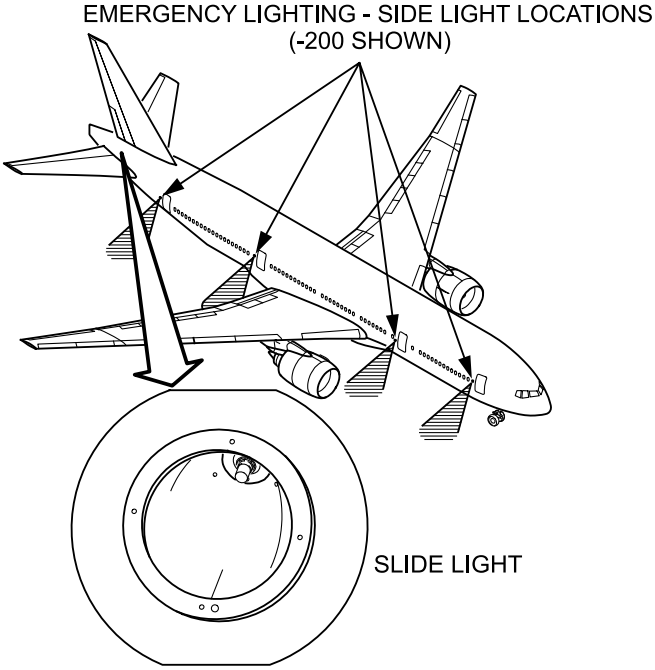
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



33-51-01 External Emergency Light Lens

-300,-300ER **33-51-01-02 External Emergency Light Lens**

Interval	Installed	Required	Procedure
N/A	14	13	**N/A**

One may be missing.

a. Emergency slide lights do not operate normally with the lenses missing.

b. If the associated lens is missing or the lamp is inoperative, dispatch using MEL item 33-51-02.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

APPROACH

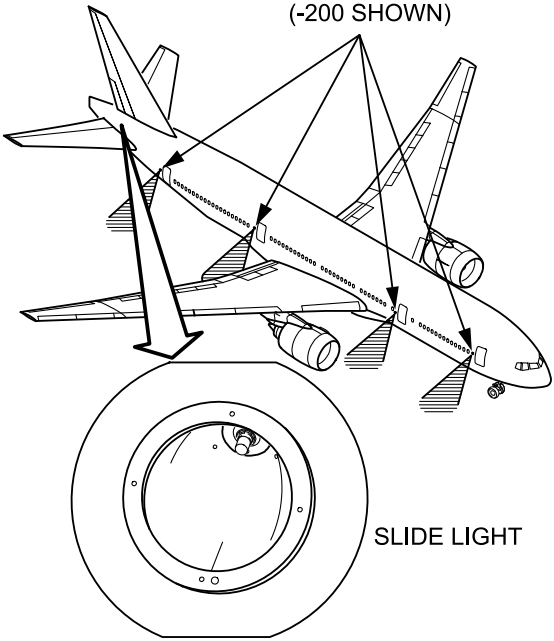
Negligible penalty

LANDING

Negligible penalty

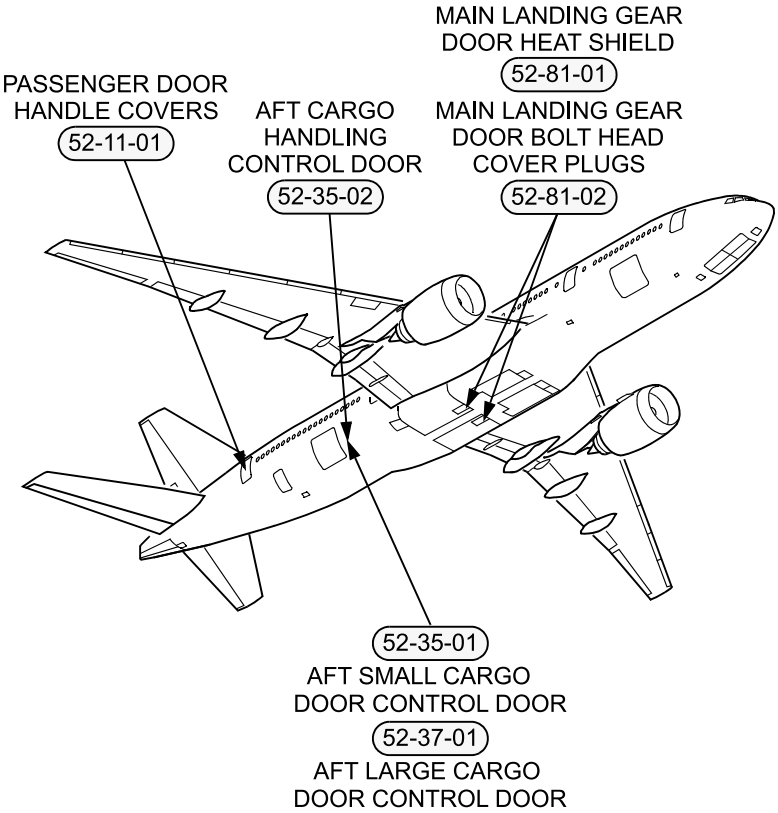
LOCATION

EMERGENCY LIGHTING - SIDE LIGHT LOCATIONS
(-200 SHOWN)



DOORS

General Locations



52-11-01 Passenger Door Handle Covers

52-11-01-01 Passenger Door Handle Covers -200,-200ER

Interval	Installed	Required	Procedure
N/A	16	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

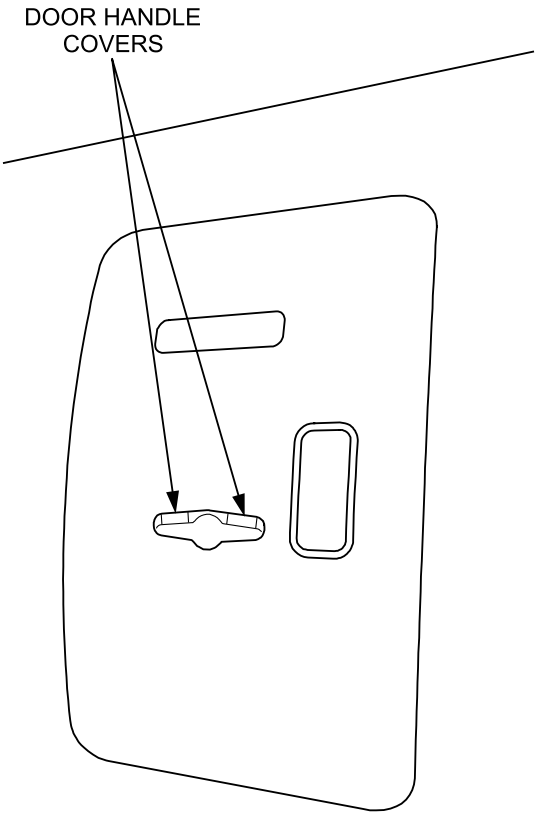
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



52-11-01 Passenger Door Handle Covers

-300,-300ER **52-11-01-02 Passenger Door Handle Covers**

Interval	Installed	Required	Procedure
N/A	20	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

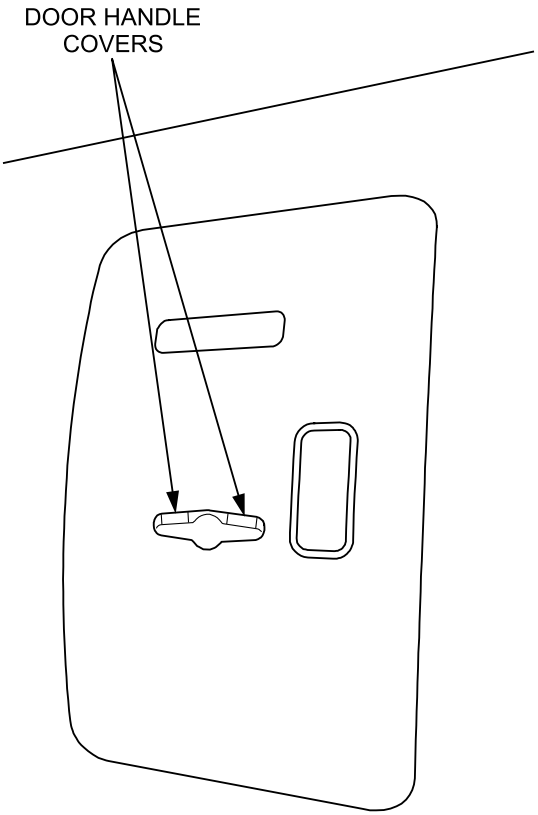
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



52-35-01 Aft Small Cargo Door Control Door

TJA,B,C,D,G, H,TKA to TKF, TKU to TKZ

Interval	Installed	Required	Procedure
N/A	1	0	**N/A**

May be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

APPROACH

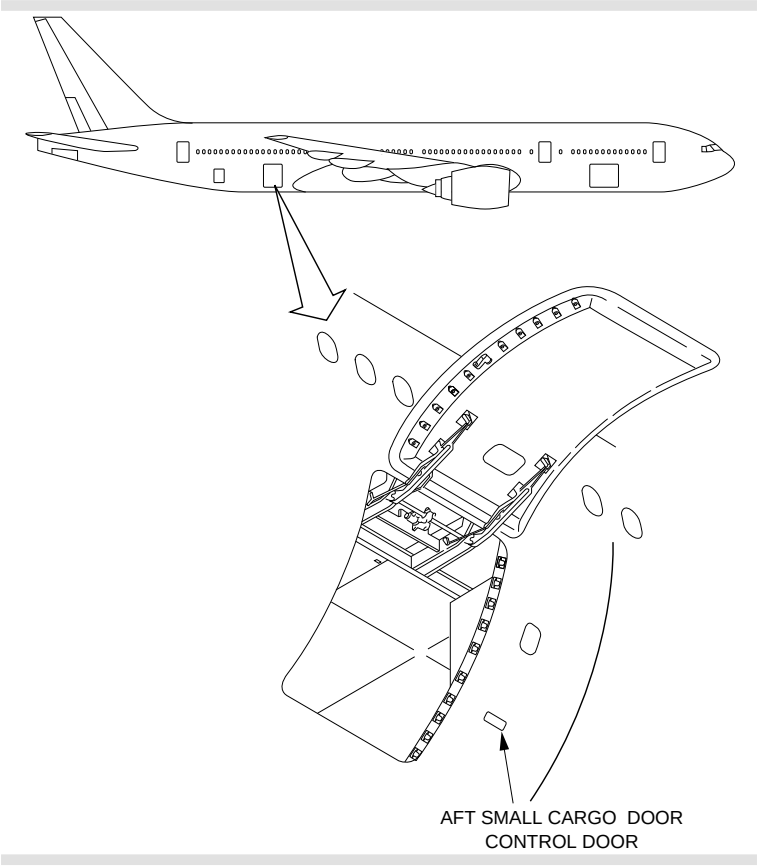
Negligible penalty

LANDING

Negligible penalty

LOCATION

DELETION



52-35-02 Aft Cargo Handling Control Door

Interval	Installed	Required	Procedure
N/A	1	0	**N/A**

May be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

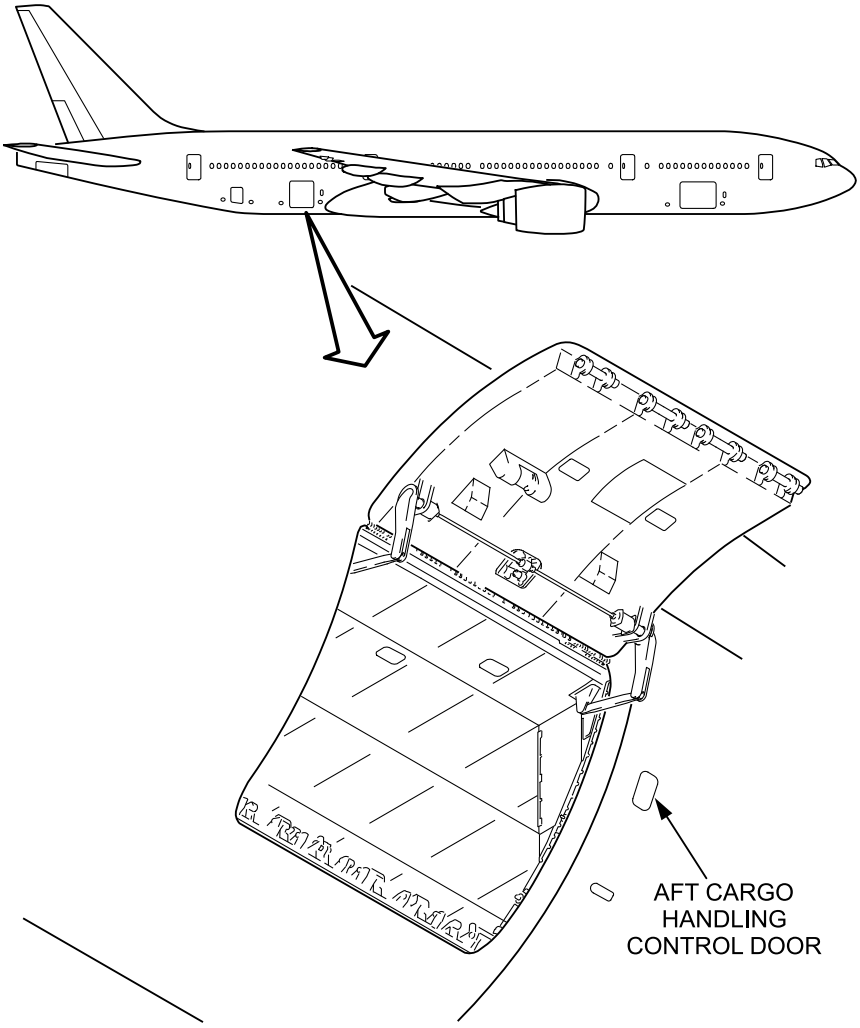
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



52-37-01 Aft Large Cargo Door Control Door

TJR to TJW, TKK to TKR

Interval	Installed	Required	Procedure
N/A	1	0	**N/A**

May be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

APPROACH

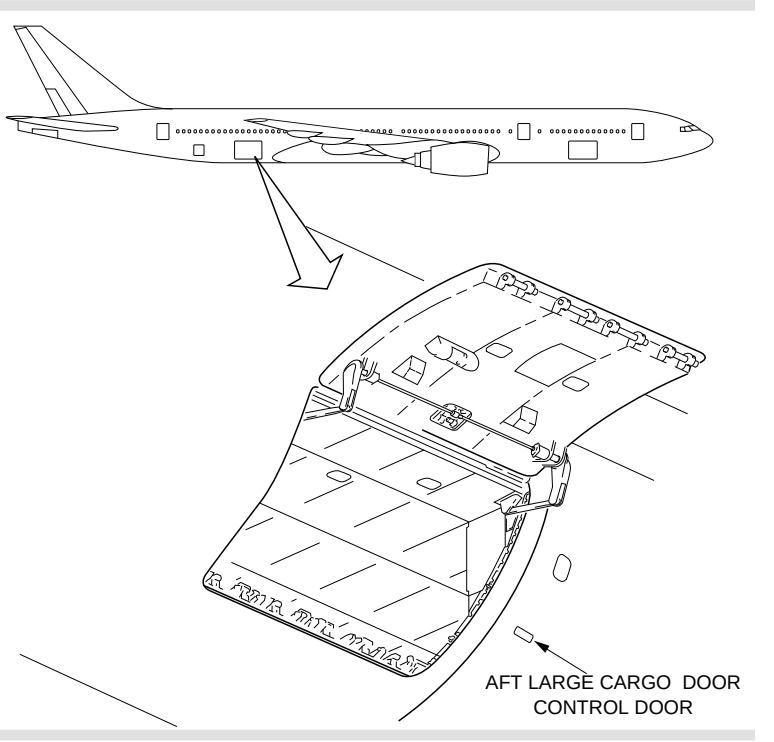
Negligible penalty

LANDING

Negligible penalty

LOCATION

DELETION



52-81-01 Main Landing Gear Door Heat Shield

Interval	Installed	Required	Procedure
N/A	2	1	**N/A**

One may be missing provided:

a. The associated air conditioning pack is considered to be inoperative.

b. Dispatch using MEL item 21-51-01 for one air conditioning pack inoperative.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

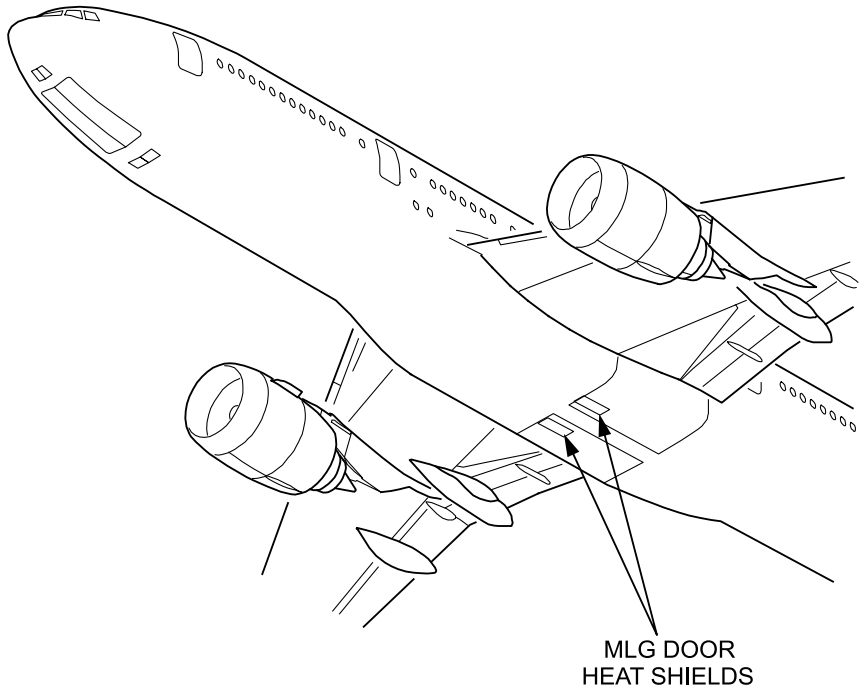
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



52-81-02 Main Landing Gear Door Bolt Head Cover Plugs

Interval	Installed	Required	Procedure
N/A	12	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

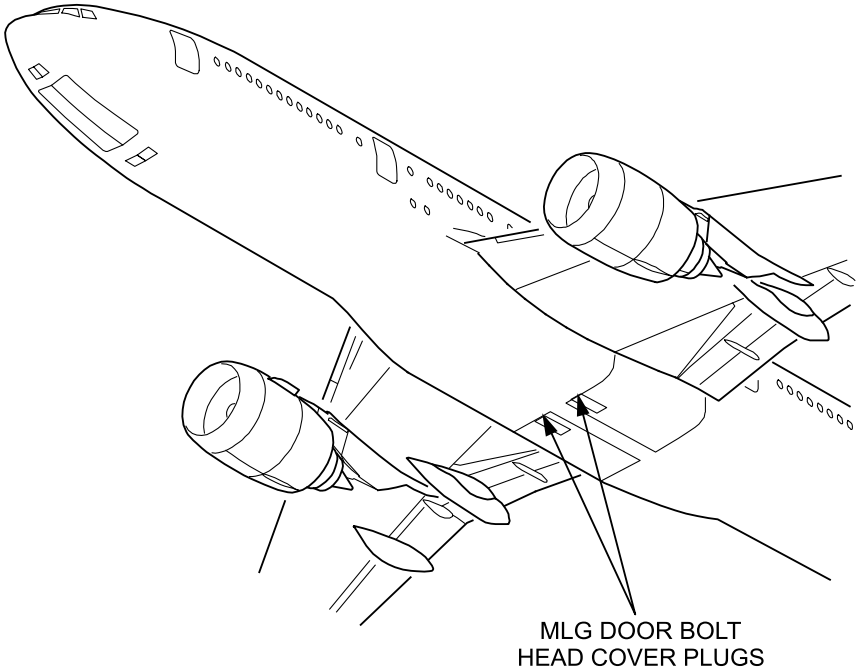
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION

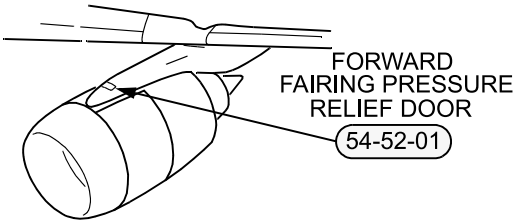


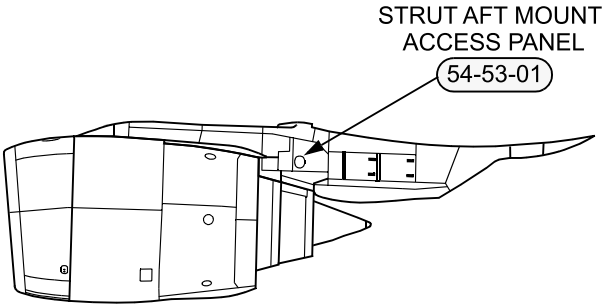
NACELLES AND PYLONS

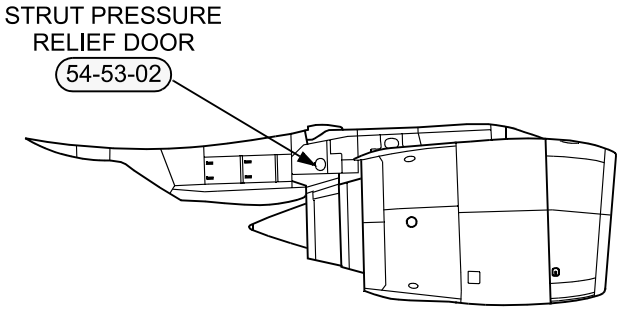
General Locations

RR

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

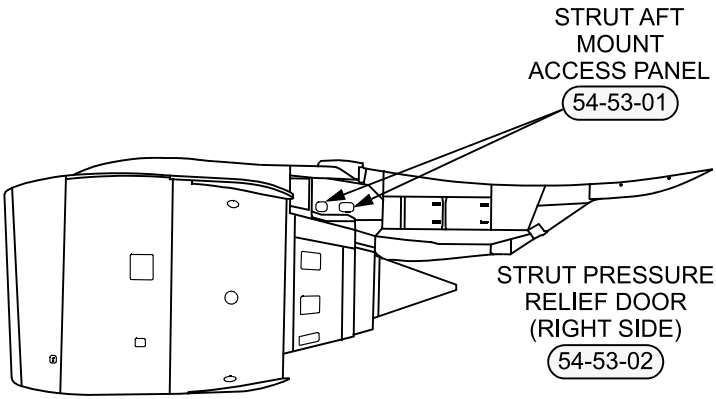






TKK to TKR, TKU to TKZ

GE



54-52-01 Forward Fairing Pressure Relief Door (RR)

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

69 kg

ENROUTE CLIMB

91 kg

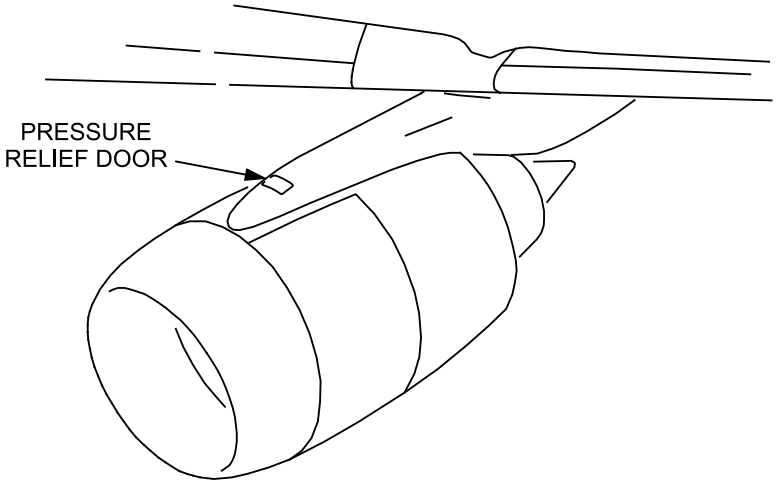
APPROACH

69 kg

LANDING

69 kg

LOCATION



54-53-01 Strut Aft Mount Access Panel

54-53-01-01 Strut Aft Mount Access Panel

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

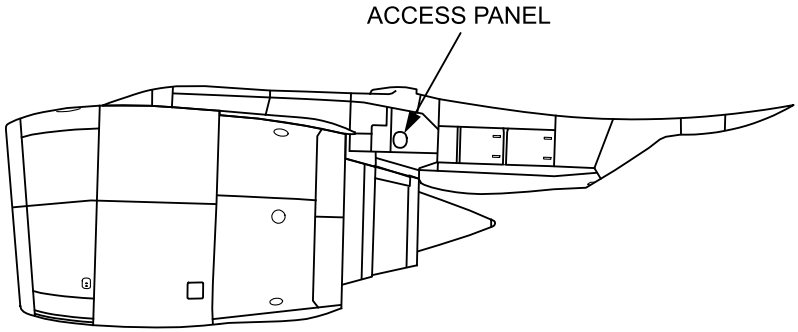
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



54-53-01 Strut Aft Mount Access Panel

TKK to TKR, TKU to TKZ

54-53-01-02 Strut Aft Mount Access Panel

Interval	Installed	Required	Procedure
N/A	6	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

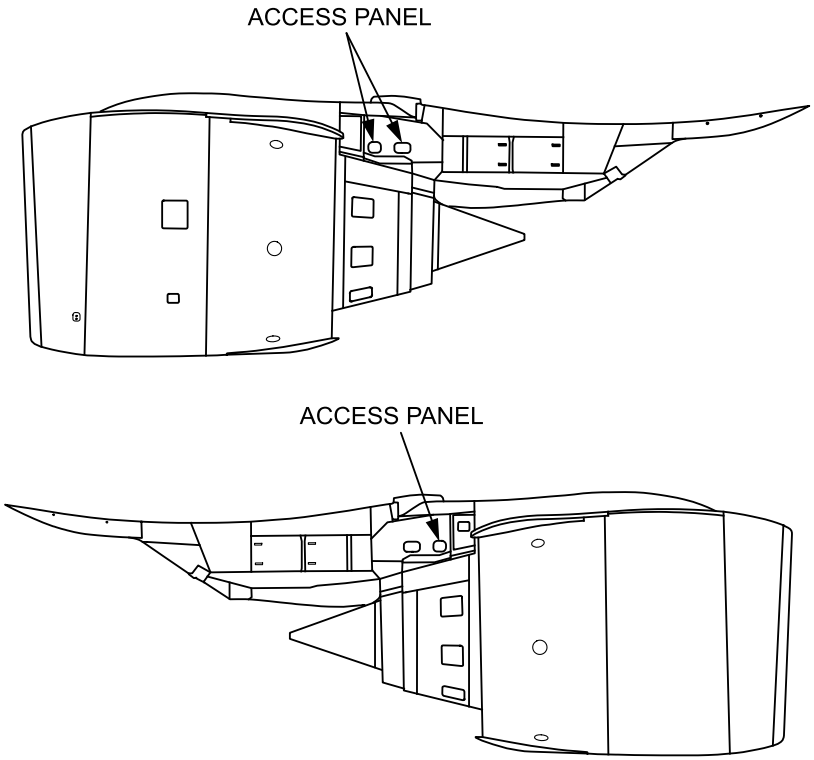
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



54-53-02 Strut Pressure Relief Door

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

54-53-02-01 Strut Pressure Relief Door

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

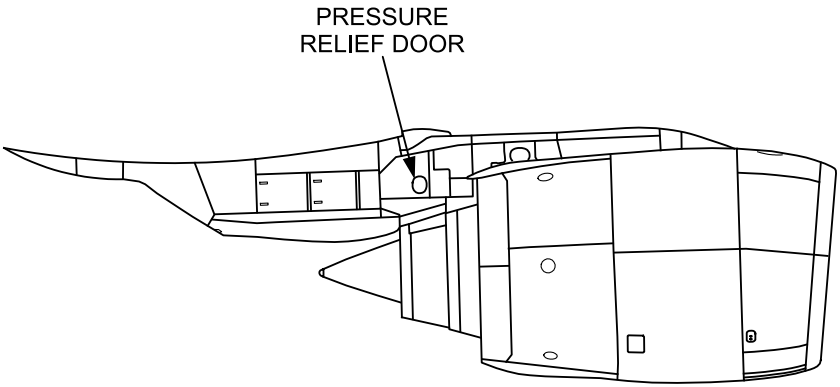
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



54-53-02 Strut Pressure Relief Door

54-53-02-02 Strut Pressure Relief Door

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
N/A	4	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

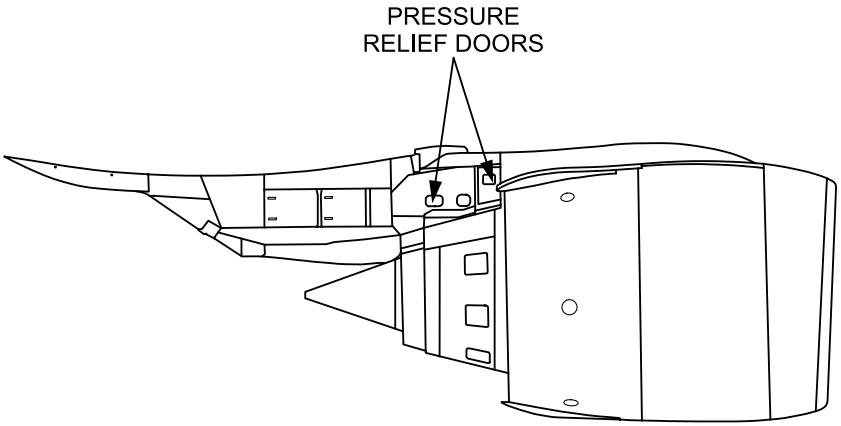
APPROACH

Negligible penalty

LANDING

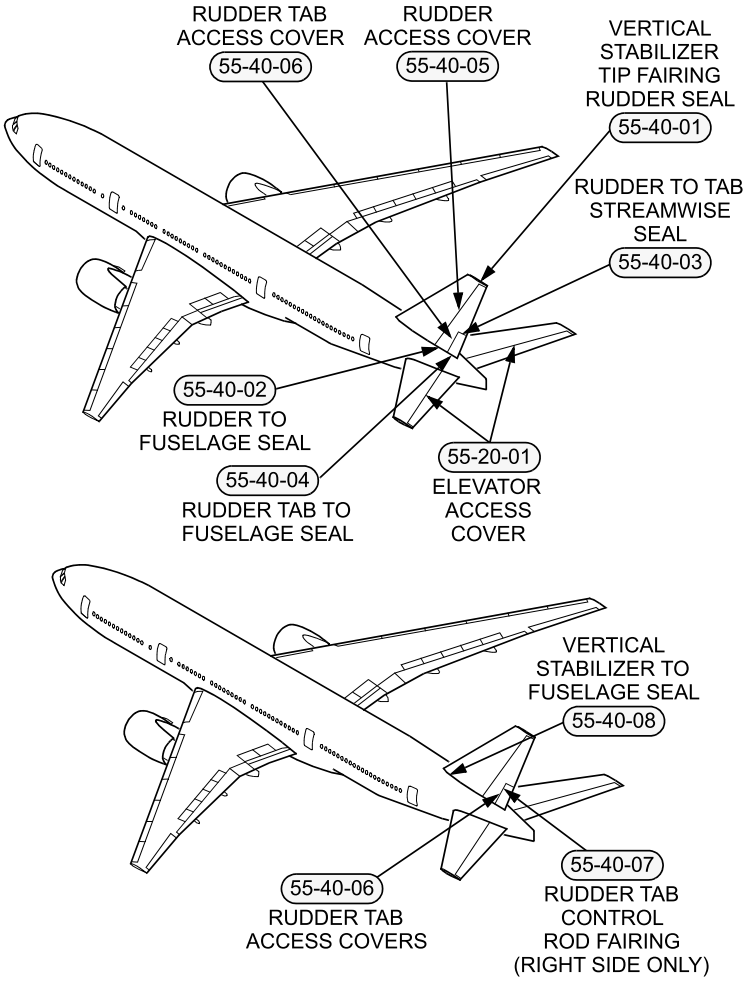
Negligible penalty

LOCATION



STABILIZER

General Locations



55-20-01 Elevator Access Cover

Interval	Installed	Required	Procedure
N/A	8	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

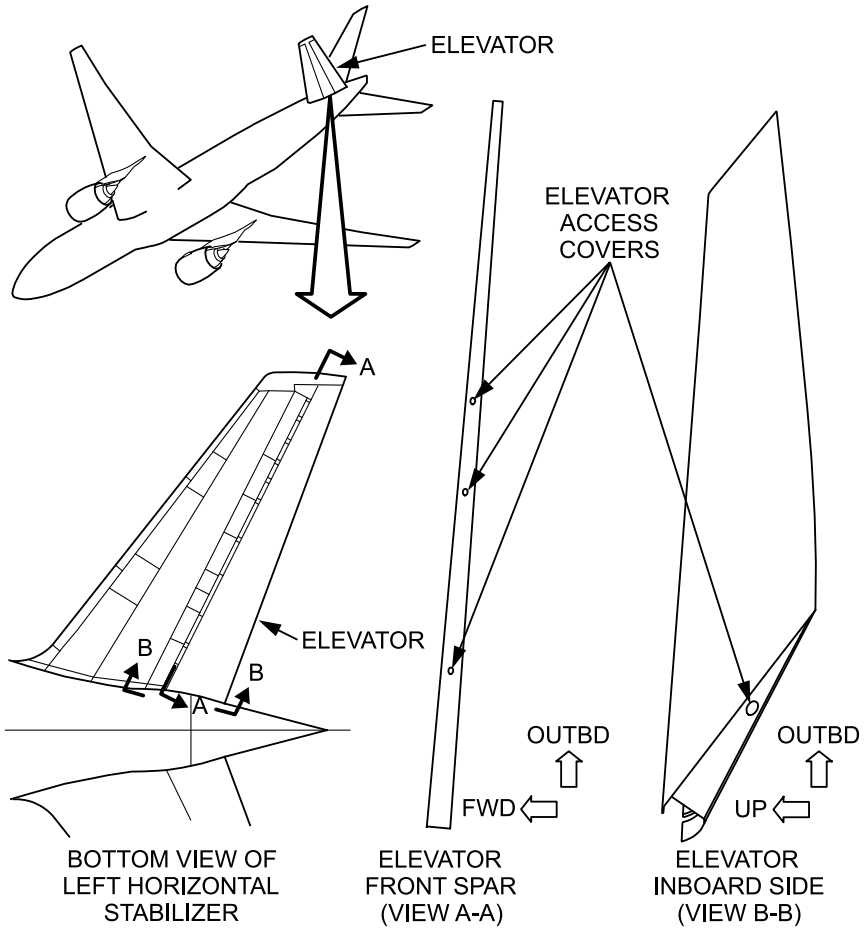
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION


ELEVATOR
ELEVATOR ACCESS COVERS
A
B
B
A
ELEVATOR
OUTBD
FWD
OUTBD
UP
BOTTOM VIEW OF LEFT HORIZONTAL STABILIZER
ELEVATOR FRONT SPAR (VIEW A-A)
ELEVATOR INBOARD SIDE (VIEW B-B)

55-40-01 Vertical Stabilizer Tip Fairing Rudder Seal

Interval	Installed	Required	Procedure
N/A	6	See below	**N/A**

Any number and length of seals may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

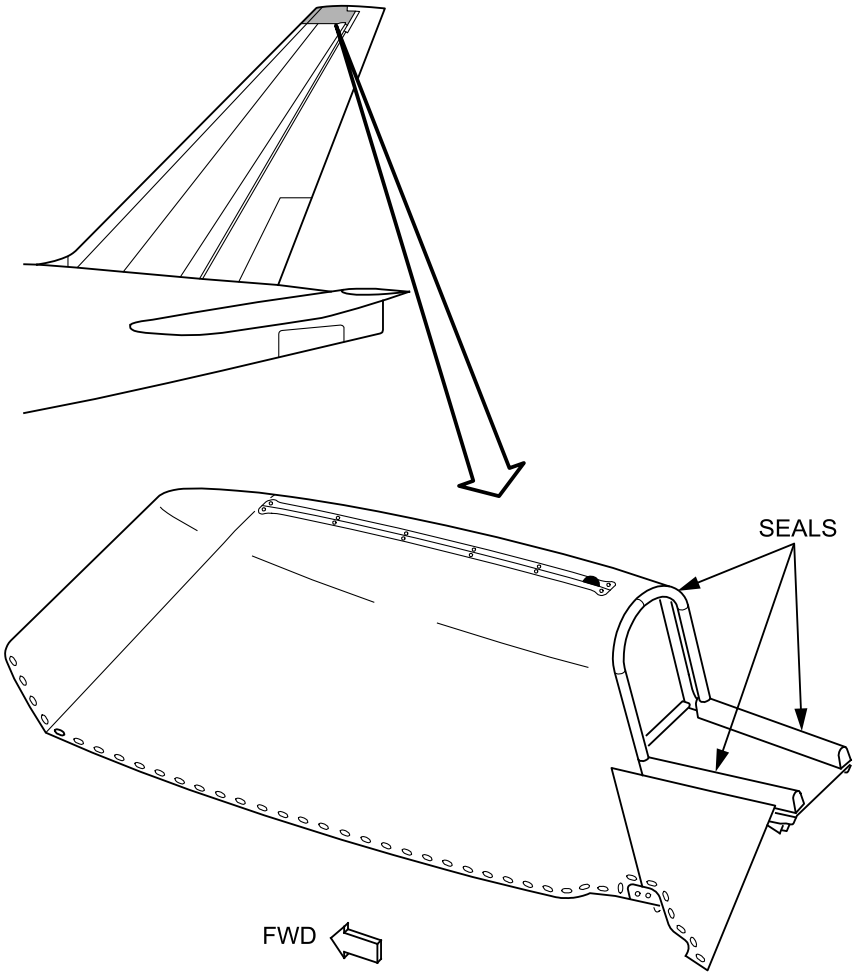
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



VERTICAL STABILIZER
TIP FAIRING

55-40-02 Rudder-to-Fuselage Seal

Interval	Installed	Required	Procedure
N/A	4	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

159 kg

ENROUTE CLIMB

249 kg

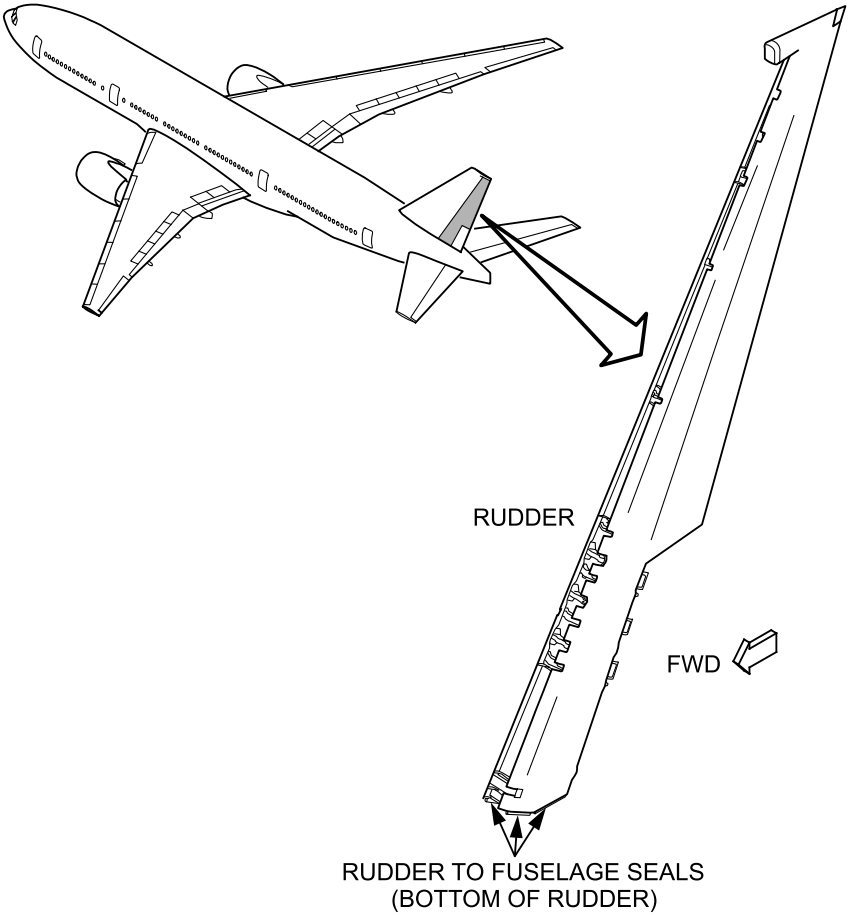
APPROACH

136 kg

LANDING

136 kg

LOCATION



55-40-03 Rudder-to-Tab Streamwise Seal

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

68 kg

ENROUTE CLIMB

91 kg

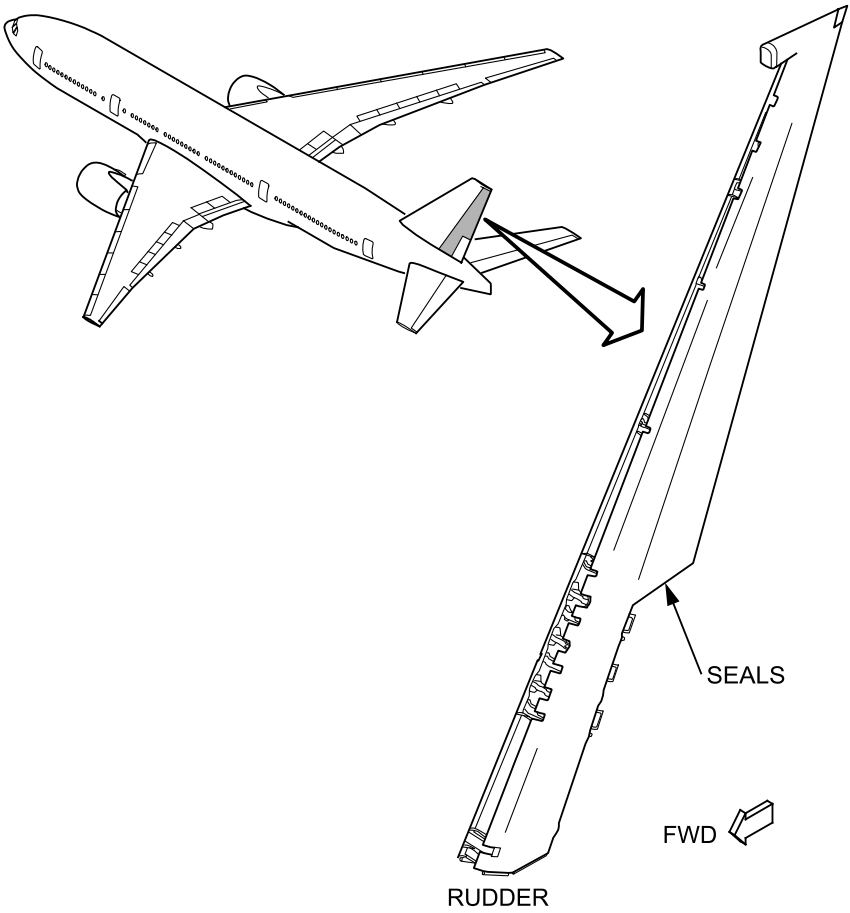
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



55-40-04 Rudder Tab-to-Fuselage Seal

Interval	Installed	Required	Procedure
N/A	2	0	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

68 kg

ENROUTE CLIMB

113 kg

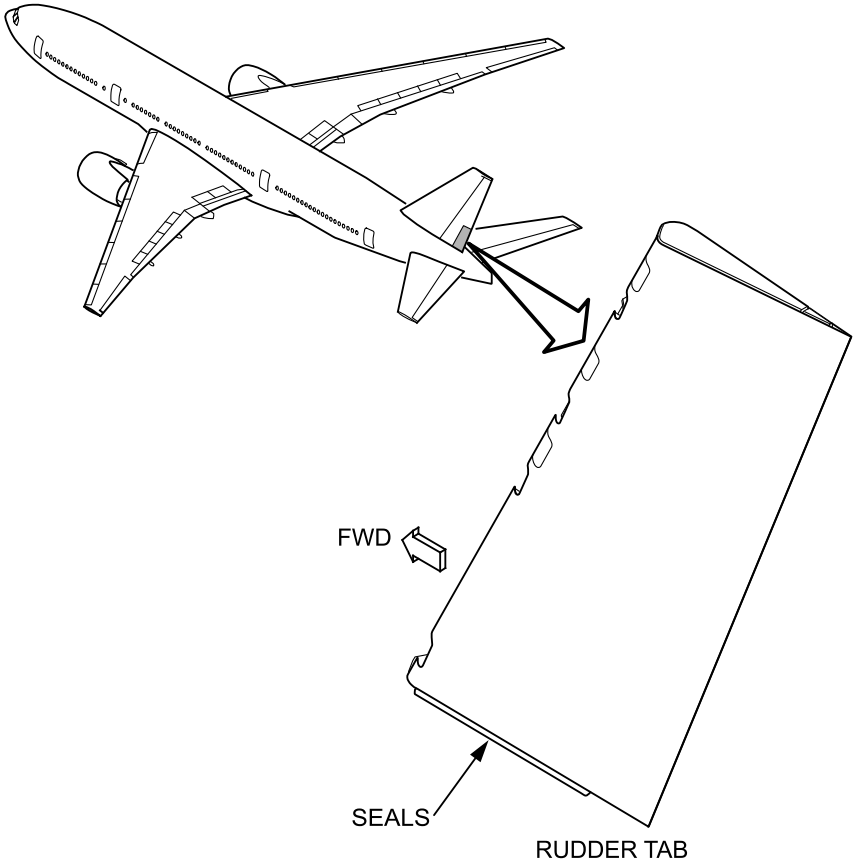
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



55-40-05 Rudder Access Cover

Interval	Installed	Required	Procedure
N/A	4	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

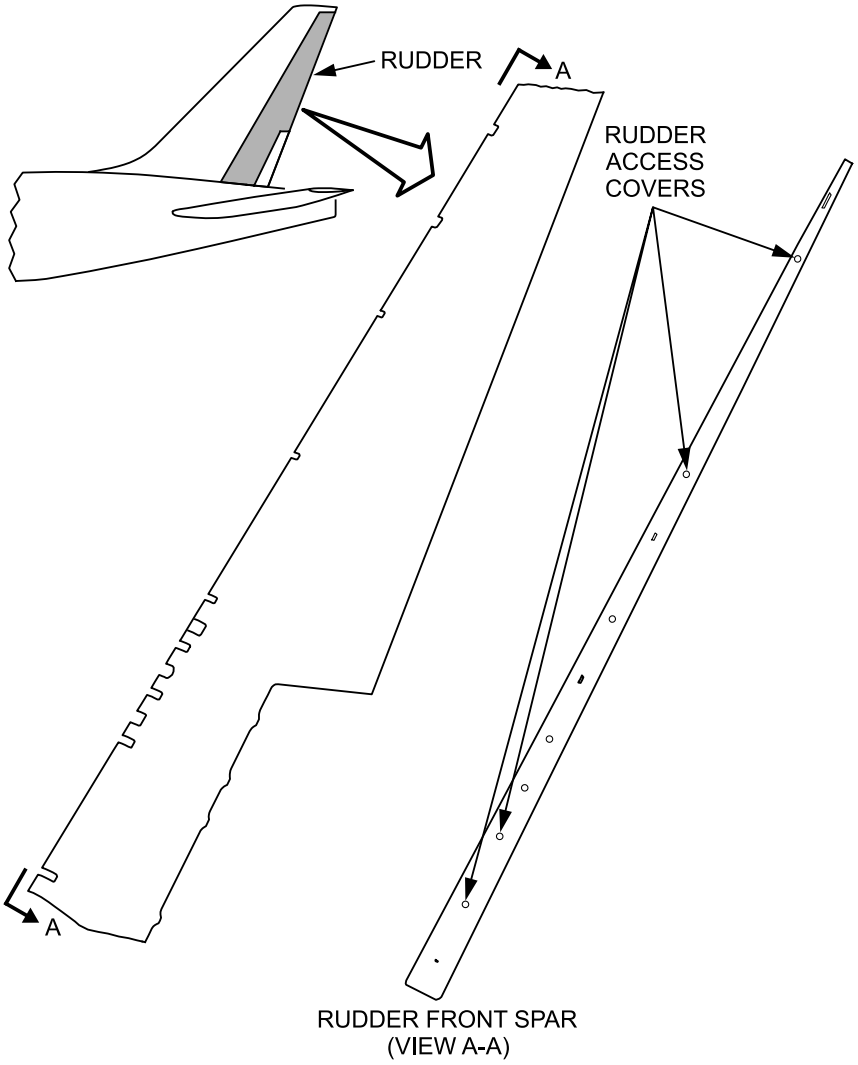
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



RUDDER FRONT SPAR
(VIEW A-A)

55-40-06 Rudder Tab Access Cover

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

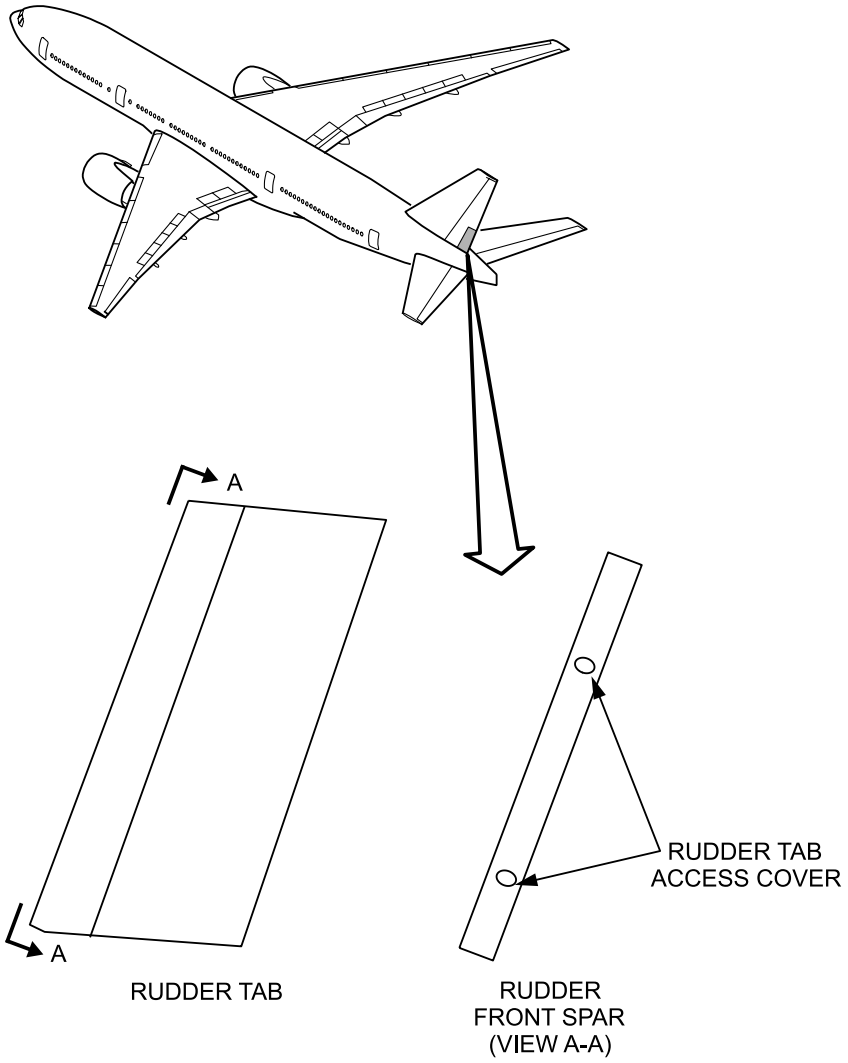
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION


A
A
RUDDER TAB
RUDDER TAB
ACCESS COVER
RUDDER
FRONT SPAR
(VIEW A-A)

55-40-07 Rudder Tab Control Rod Fairing

Interval	Installed	Required	Procedure
N/A	3	2	**(O) (MV)**

One may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

182 kg

ENROUTE CLIMB

295 kg

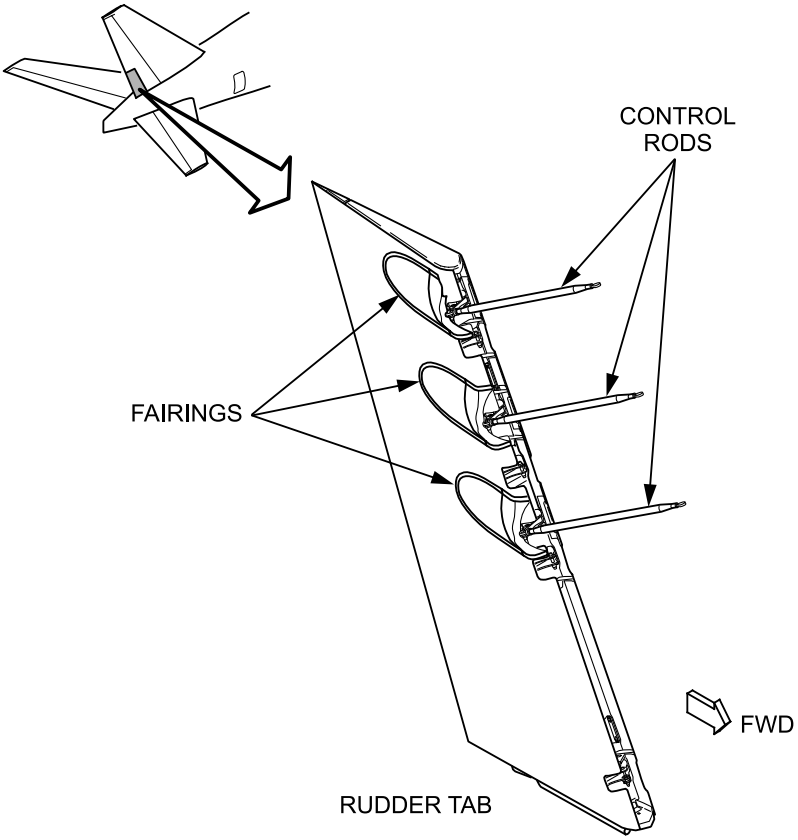
APPROACH

159 kg

LANDING

159 kg

LOCATION



55-40-08 Vertical Stabilizer-To-Fuselage Seal

Interval	Installed	Required	Procedure
N/A	9	7	**N/A**

A maximum of two with any length of those two seals may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

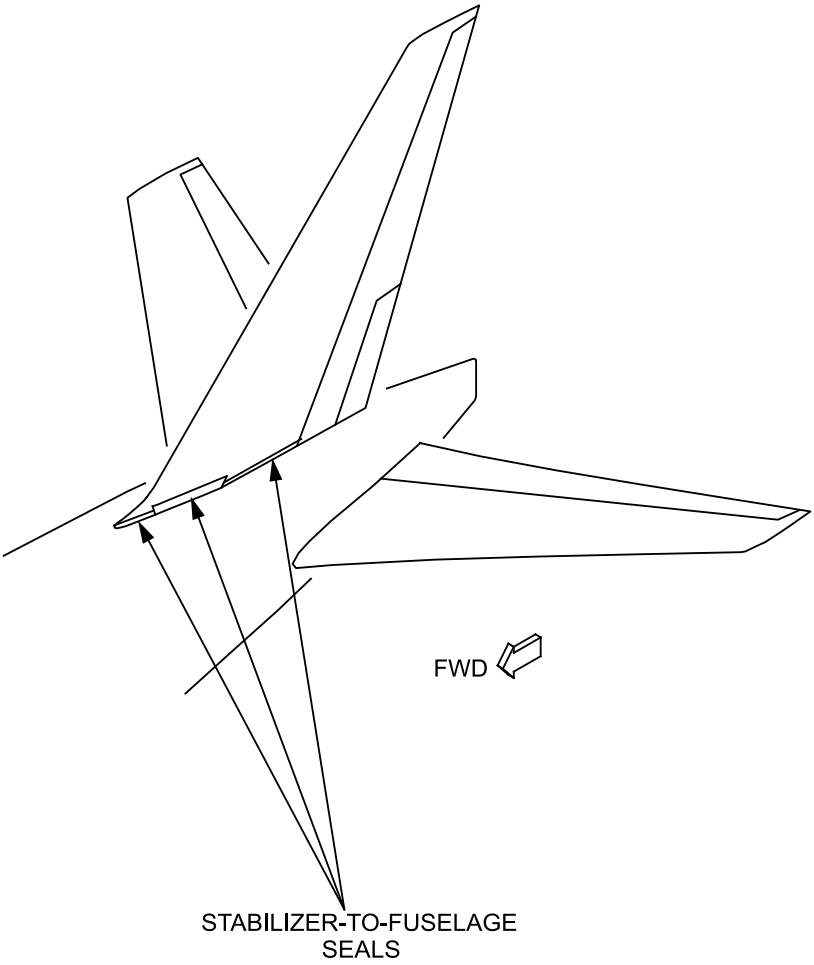
APPROACH

Negligible penalty

LANDING

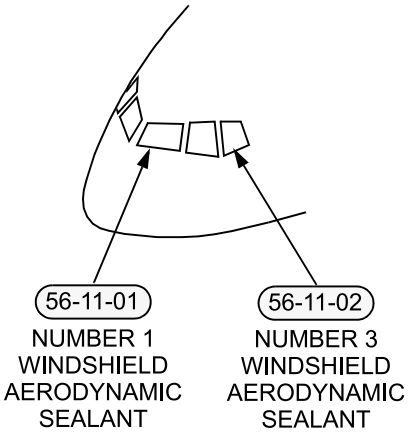
Negligible penalty

LOCATION



WINDOWS

General Locations



56-11-01 Number 1 Windshield Aerodynamic Sealant

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

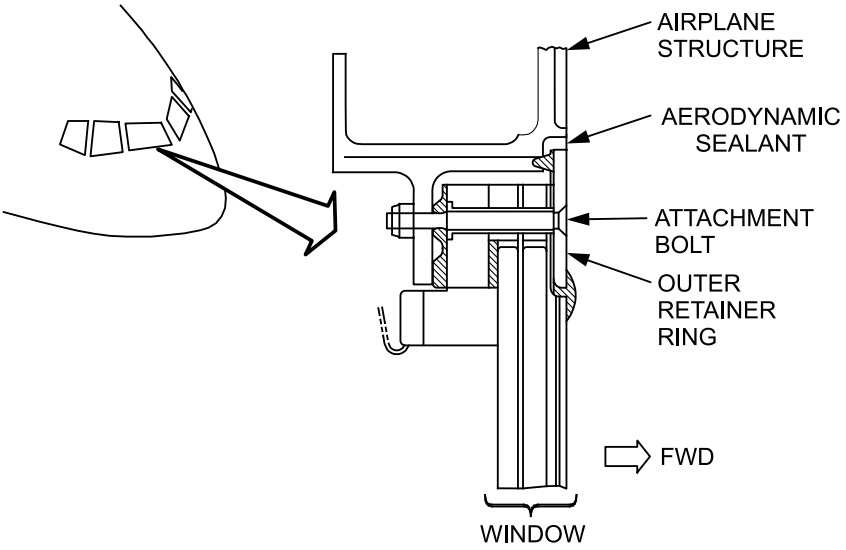
APPROACH

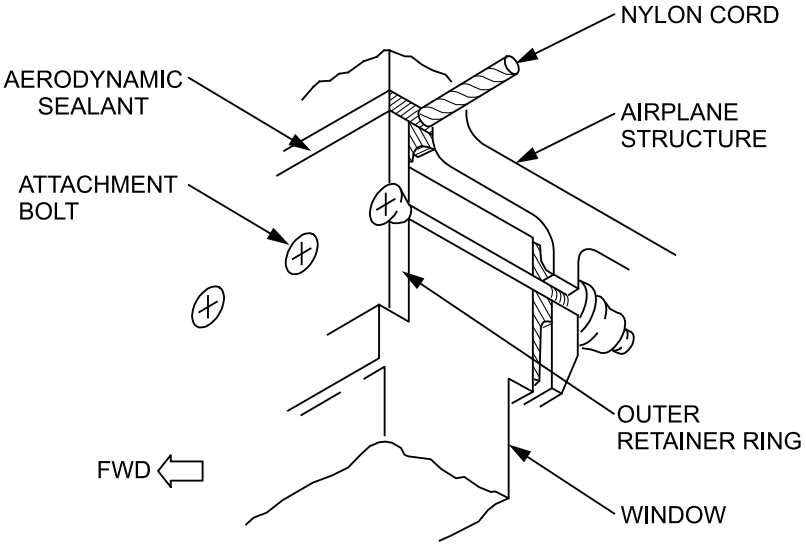
Negligible penalty

LANDING

Negligible penalty

LOCATION


AIRPLANE STRUCTURE
AERODYNAMIC SEALANT
ATTACHMENT BOLT
OUTER RETAINER RING
FWD
WINDOW


NYLON CORD
AERODYNAMIC SEALANT
AIRPLANE STRUCTURE
ATTACHMENT BOLT
OUTER RETAINER RING
FWD
WINDOW

56-11-02 Number 3 Windshield Aerodynamic Sealant

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

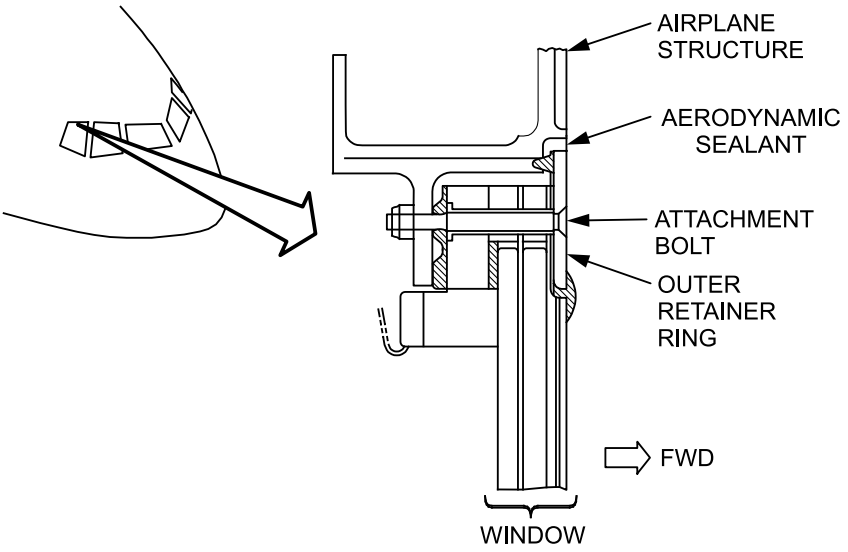
APPROACH

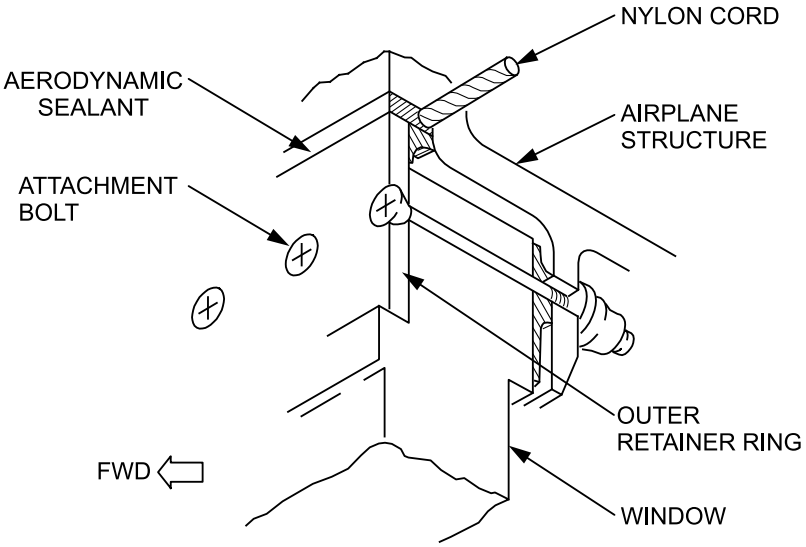
Negligible penalty

LANDING

Negligible penalty

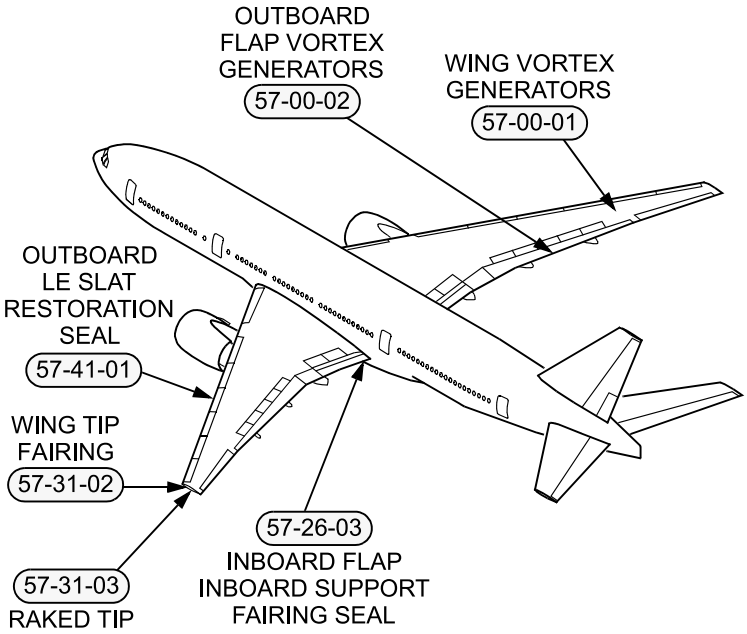
LOCATION

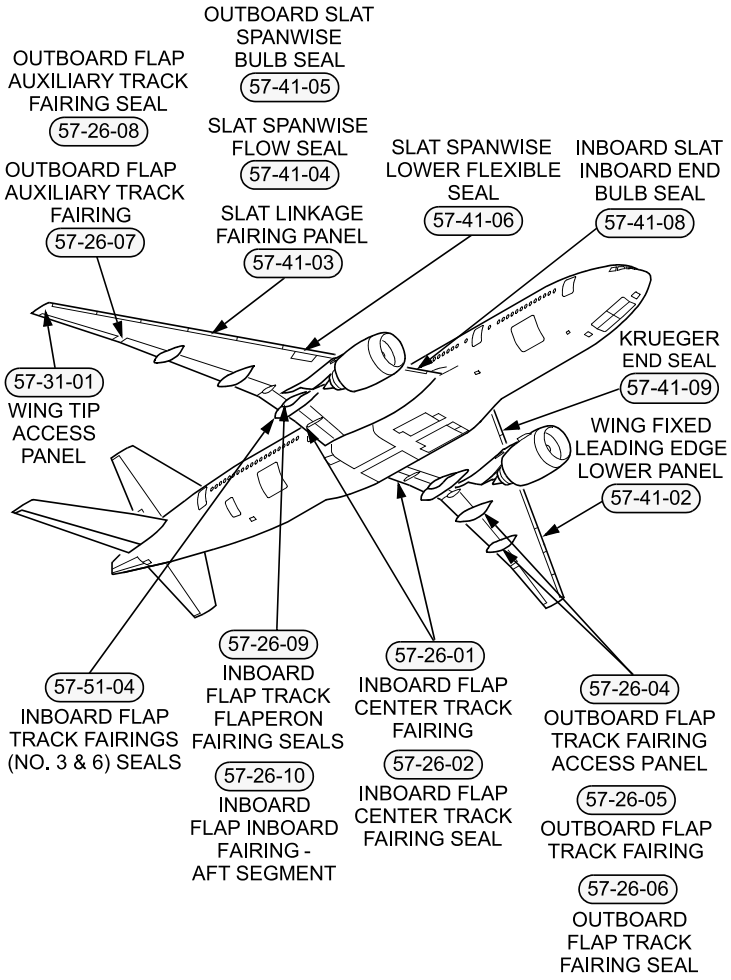

AIRPLANE STRUCTURE
AERODYNAMIC SEALANT
ATTACHMENT BOLT
OUTER RETAINER RING
FWD
WINDOW

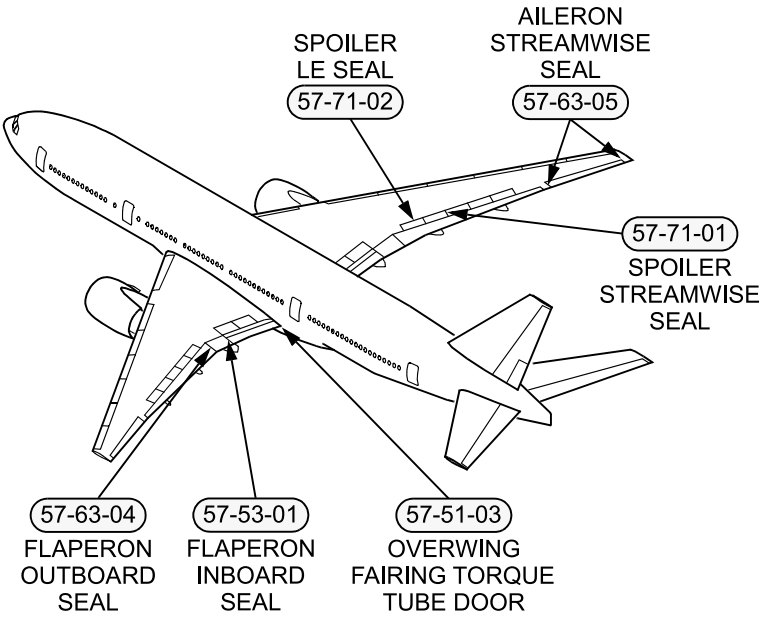

NYLON CORD
AERODYNAMIC SEALANT
AIRPLANE STRUCTURE
ATTACHMENT BOLT
OUTER RETAINER RING
FWD
WINDOW

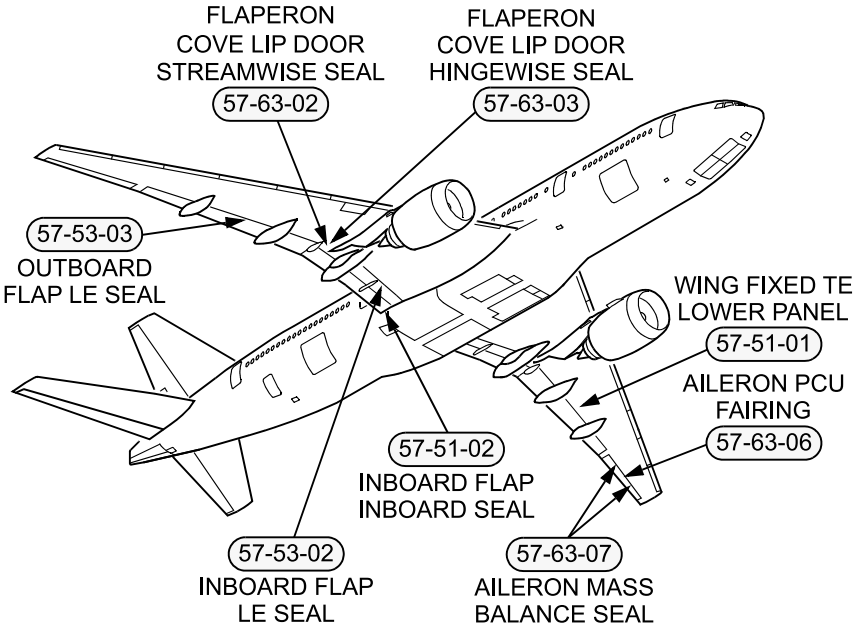
WINGS

General Locations




OUTBOARD SLAT SPANWISE BULB SEAL
57-41-05
OUTBOARD FLAP AUXILIARY TRACK FAIRING SEAL
57-26-08
SLAT SPANWISE FLOW SEAL
57-41-04
SLAT SPANWISE LOWER FLEXIBLE SEAL
57-41-06
INBOARD SLAT INBOARD END BULB SEAL
57-41-08
OUTBOARD FLAP AUXILIARY TRACK FAIRING
57-26-07
SLAT LINKAGE FAIRING PANEL
57-41-03
KRUEGER END SEAL
57-41-09
57-31-01
WING TIP ACCESS PANEL
WING FIXED LEADING EDGE LOWER PANEL
57-41-02
57-26-09
57-26-01
57-51-04
INBOARD FLAP TRACK FAIRINGS (NO. 3 & 6) SEALS
INBOARD FLAP TRACK FLAPERON FAIRING SEALS
INBOARD FLAP CENTER TRACK FAIRING
57-26-04
OUTBOARD FLAP TRACK FAIRING ACCESS PANEL
57-26-10
INBOARD FLAP INBOARD FAIRING - AFT SEGMENT
57-26-02
INBOARD FLAP CENTER TRACK FAIRING SEAL
57-26-05
OUTBOARD FLAP TRACK FAIRING
57-26-06
OUTBOARD FLAP TRACK FAIRING SEAL


SPOILER
LE SEAL
57-71-02
AILERON
STREAMWISE
SEAL
57-63-05
57-71-01
SPOILER
STREAMWISE
SEAL
57-63-04
FLAPERON
OUTBOARD
SEAL
57-53-01
FLAPERON
INBOARD
SEAL
57-51-03
OVERWING
FAIRING TORQUE
TUBE DOOR


FLAPERON
COVE LIP DOOR
STREAMWISE SEAL
57-63-02
FLAPERON
COVE LIP DOOR
HINGEWISE SEAL
57-63-03
57-53-03
OUTBOARD
FLAP LE SEAL
WING FIXED TE
LOWER PANEL
57-51-01
AILERON PCU
FAIRING
57-63-06
57-51-02
INBOARD FLAP
INBOARD SEAL
57-53-02
INBOARD FLAP
LE SEAL
57-63-07
AILERON MASS
BALANCE SEAL

57-00-01 Wing Vortex Generator

57-00-01-01 Wing Vortex Generator

-200,-200ER, -300

Interval	Installed	Required	Procedure
N/A	32	See below	**N/A**

A maximum of two per wing (four total) may be missing provided:

a. The missing vortex generators must not be adjacent.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

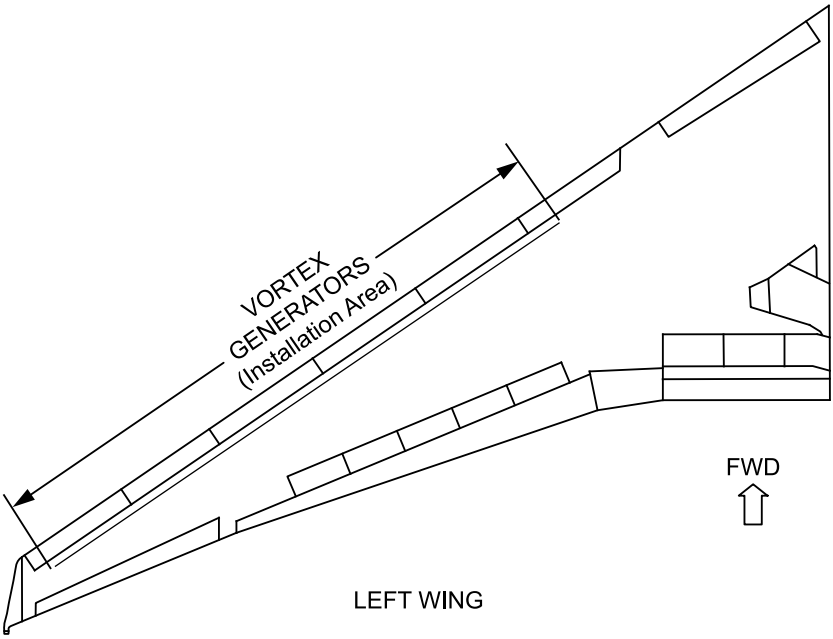
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-00-01 Wing Vortex Generator

-300ER **57-00-01-02 Wing Vortex Generator**

Interval	Installed	Required	Procedure
N/A	46	See below	**N/A**

A maximum of two per wing (four total) may be missing provided:

a. The missing vortex generators must not be adjacent.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

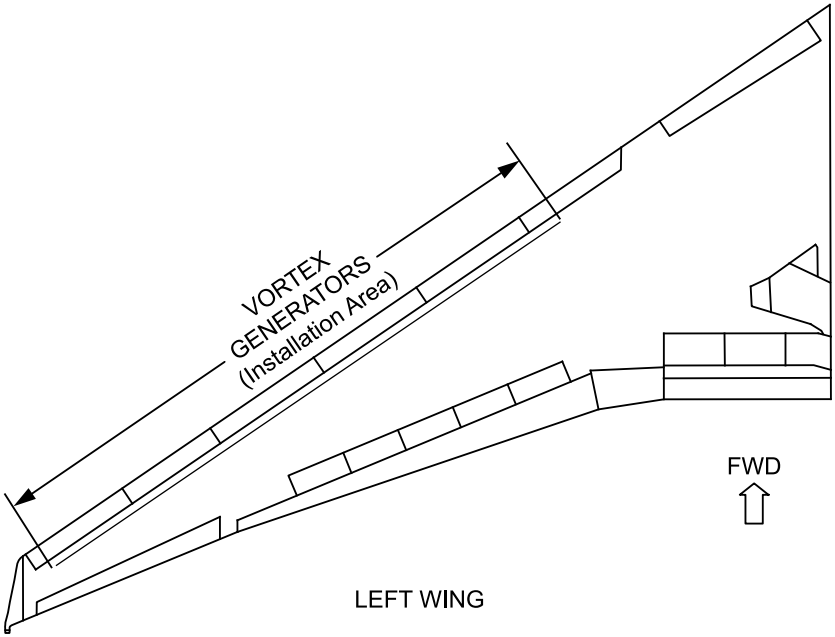
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-00-02 Outboard Flap Vortex Generator

-300 **57-00-02-01 Outboard Flap Vortex Generator**

Interval	Installed	Required	Procedure
N/A	100	See below	**(O) (MV)**

A maximum of four per wing (eight total) may be missing.

a. Landing approach speed VREF is increased by 2 knots.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

APPROACH

2,949 kg

LANDING FIELD LENGTH

6,396 kg

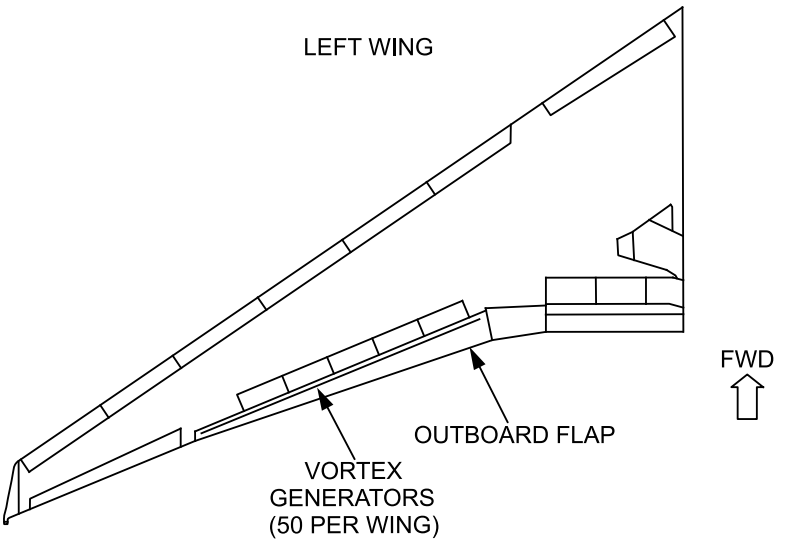
LANDING

2,949 kg

MAXIMUM QUICK TURNAROUND

2,722 kg

LOCATION



57-00-02 Outboard Flap Vortex Generator

57-00-02-02 Outboard Flap Vortex Generator -300ER

Interval	Installed	Required	Procedure
N/A	100	See below	**(O) (MV)**

A maximum of four per wing (eight total) may be missing.

a. Landing approach speed VREF is increased by 2 knots.
b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

APPROACH

227 kg

LANDING FIELD LENGTH

7,439 kg

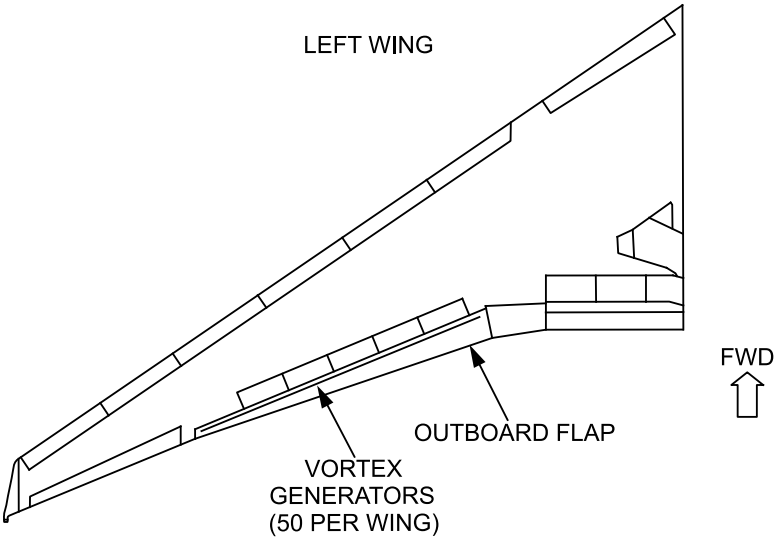
LANDING

227 kg

MAXIMUM QUICK TURNAROUND

6,079 kg

LOCATION



57-26-01 Inboard Flap Center Track Fairing

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. The aft segment of the track fairing should be removed if the forward segment is missing.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

114 kg

ENROUTE CLIMB

182 kg

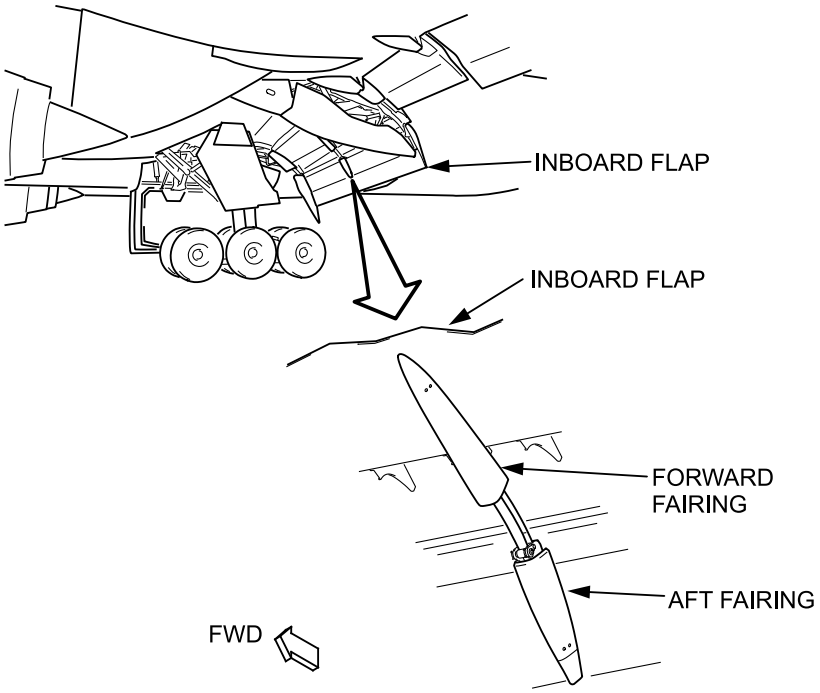
APPROACH

114 kg

LANDING

114 kg

LOCATION



INBOARD FLAP CENTER TRACK FAIRING

57-26-02 Inboard Flap Center Track Fairing Seal

Interval	Installed	Required	Procedure
N/A	16	8	**(O) (MV)**

A maximum of eight may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

46 kg

ENROUTE CLIMB

46 kg

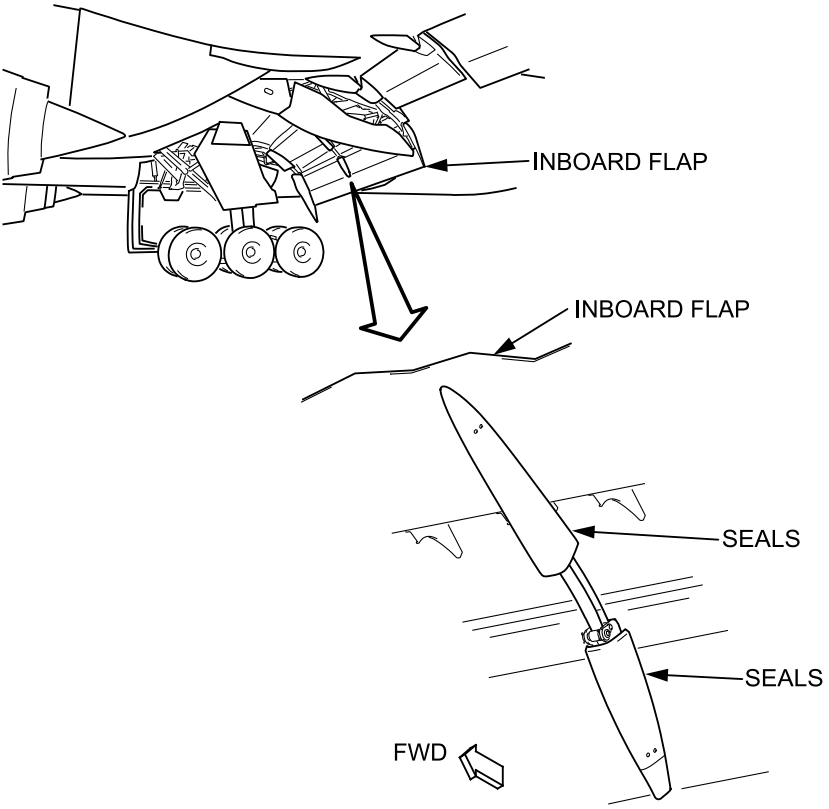
APPROACH

46 kg

LANDING

46 kg

LOCATION



INBOARD FLAP CENTER TRACK FAIRING

57-26-03 Inboard Flap Inboard Support Fairing Seal

Interval	Installed	Required	Procedure
N/A	22	11	**(O) (MV)**

A maximum of eleven may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

137 kg

ENROUTE CLIMB

205 kg

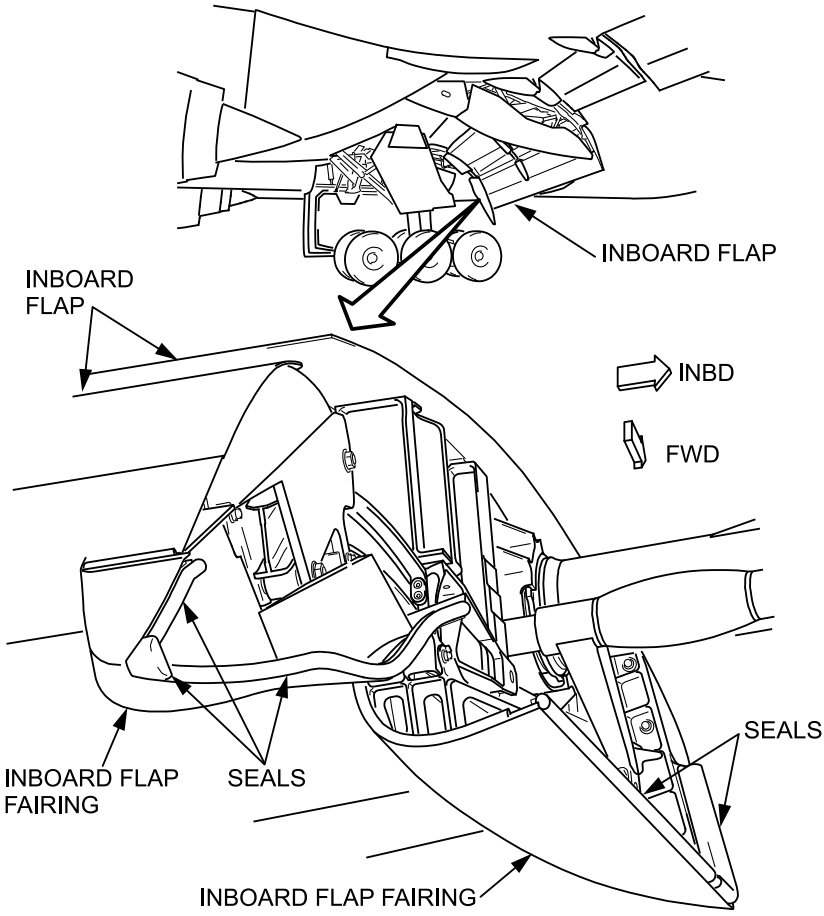
APPROACH

No penalty

LANDING

No penalty

LOCATION


INBOARD FLAP
INBOARD FLAP
INBD
FWD
SEALS
INBOARD FLAP FAIRING
SEALS
INBOARD FLAP FAIRING

57-26-04 Outboard Flap Track Fairing Access Panel

Interval	Installed	Required	Procedure
N/A	20	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

137 kg

ENROUTE CLIMB

227 kg

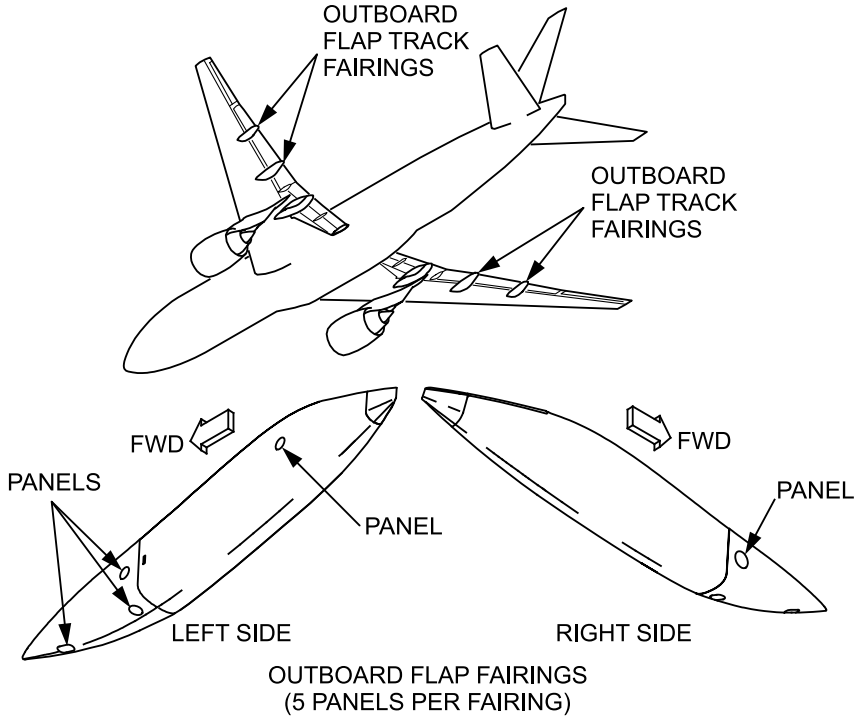
APPROACH

137 kg

LANDING

137 kg

LOCATION



OUTBOARD FLAP FAIRINGS
(5 PANELS PER FAIRING)

57-26-05 Outboard Flap Track Fairing

57-26-05-01 Outboard Flap Track Fairing -200

Interval	Installed	Required	Procedure
N/A	4	3	**(O) (MV)**

One may be missing.

a. The aft segment of the track fairing should be removed if the forward segment is missing.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

1,043 kg

ENROUTE CLIMB

2,245 kg

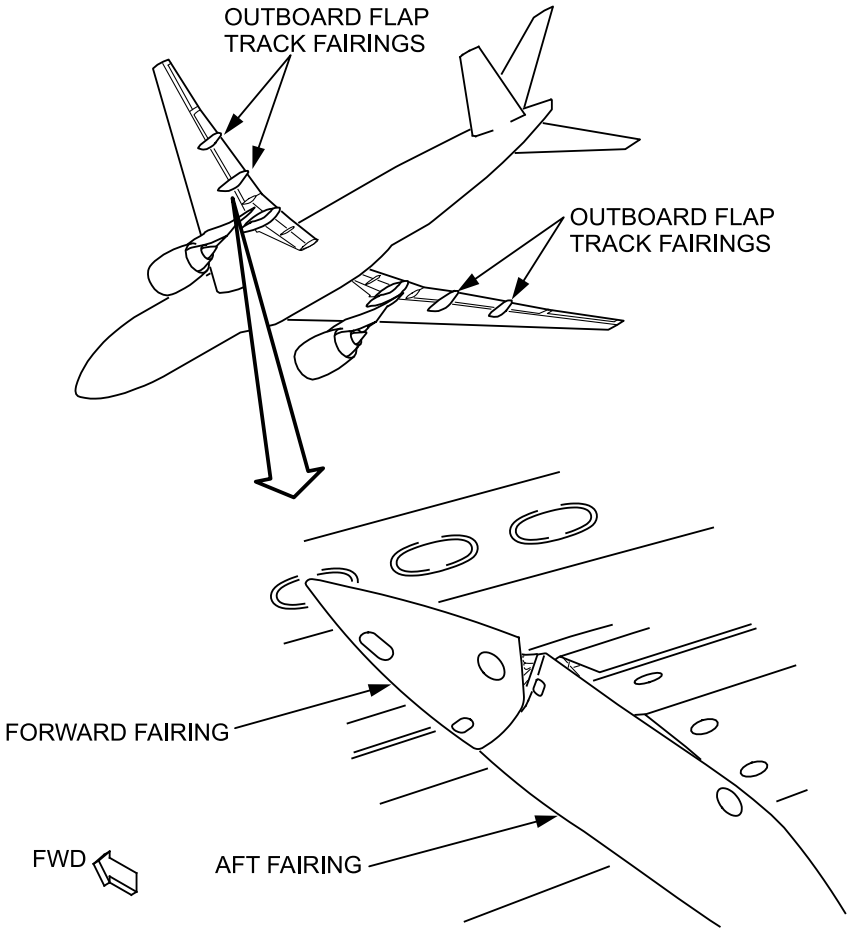
APPROACH

907 kg

LANDING

907 kg

LOCATION


OUTBOARD FLAP
TRACK FAIRINGS
OUTBOARD FLAP
TRACK FAIRINGS
FORWARD FAIRING
FWD
AFT FAIRING

57-26-05 Outboard Flap Track Fairing

57-26-05-02 Outboard Flap Track Fairing -200ER

Interval	Installed	Required	Procedure
N/A	4	3	**(O) (MV)**

One may be missing.

a. The aft segment of the track fairing should be removed if the forward segment is missing.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

1,632 kg

ENROUTE CLIMB

2,540 kg

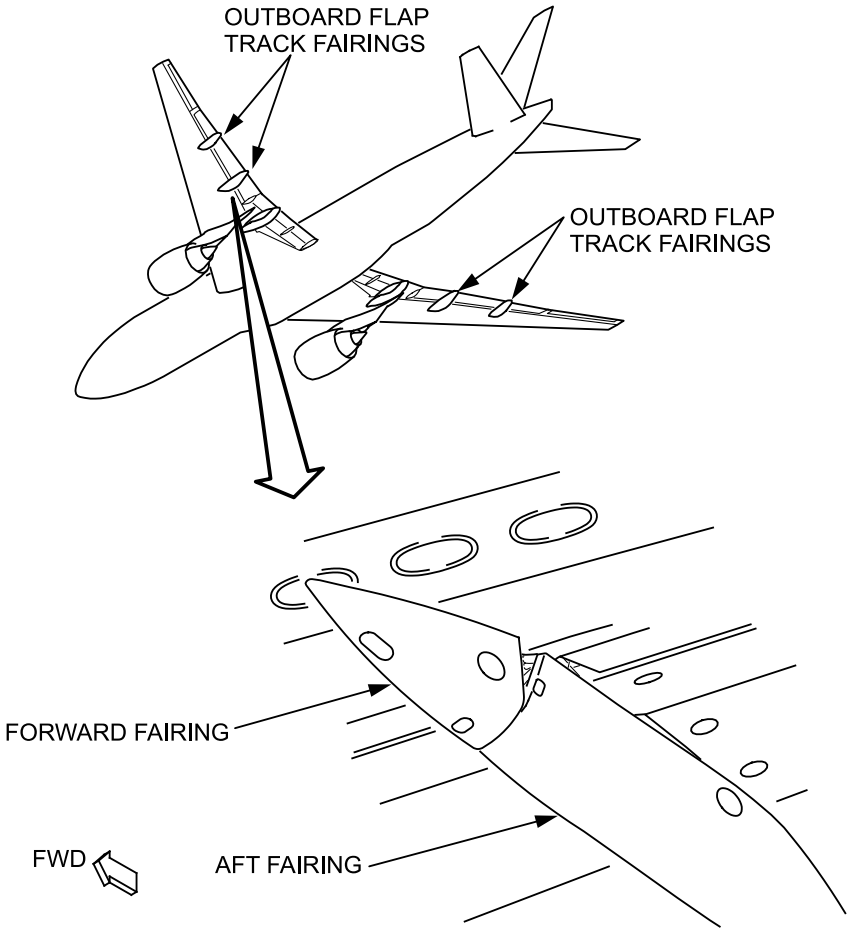
APPROACH

1,043 kg

LANDING

1,043 kg

LOCATION


OUTBOARD FLAP
TRACK FAIRINGS
OUTBOARD FLAP
TRACK FAIRINGS
FORWARD FAIRING
FWD
AFT FAIRING

57-26-05 Outboard Flap Track Fairing

57-26-05-03 Outboard Flap Track Fairing -300

Interval	Installed	Required	Procedure
N/A	4	3	**(O) (MV)**

One may be missing.

a. The aft segment of the track fairing should be removed if the forward segment is missing.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

1,202 kg

ENROUTE CLIMB

2,381 kg

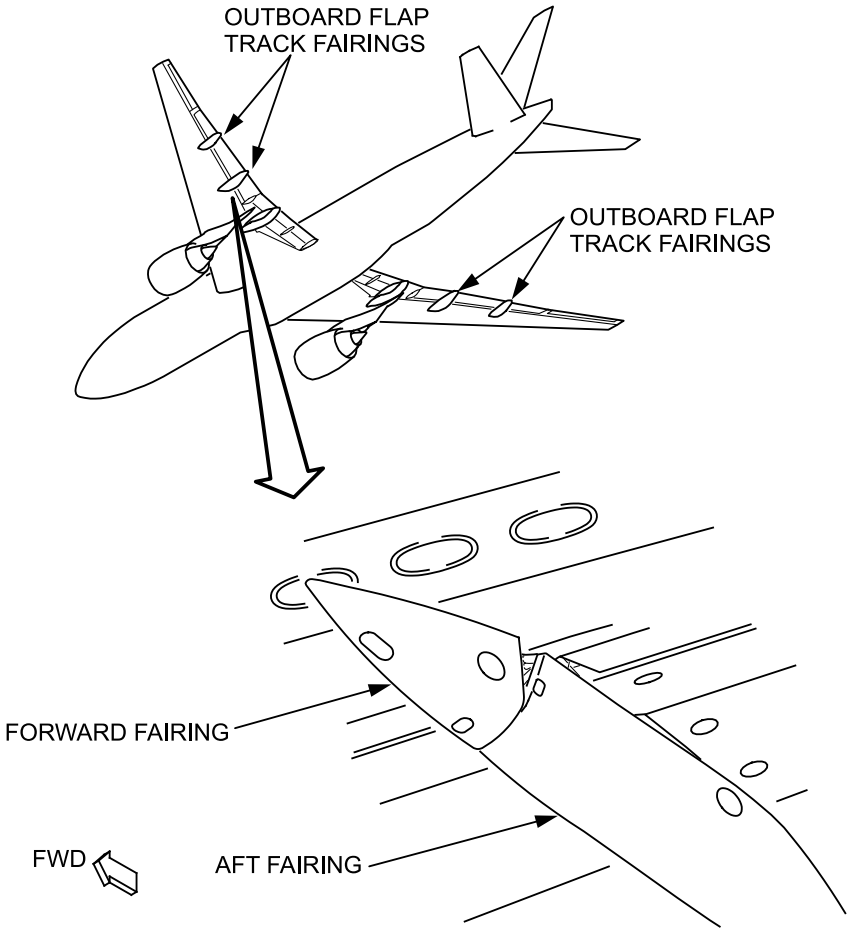
APPROACH

907 kg

LANDING

907 kg

LOCATION


OUTBOARD FLAP
TRACK FAIRINGS
OUTBOARD FLAP
TRACK FAIRINGS
FORWARD FAIRING
FWD
AFT FAIRING

57-26-05 Outboard Flap Track Fairing

57-26-05-04 Outboard Flap Track Fairing -300ER

Interval	Installed	Required	Procedure
N/A	4	3	**(O) (MV)**

One may be missing.

a. The aft segment of the track fairing should be removed if the forward segment is missing.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

1,271 kg

ENROUTE CLIMB

2,676 kg

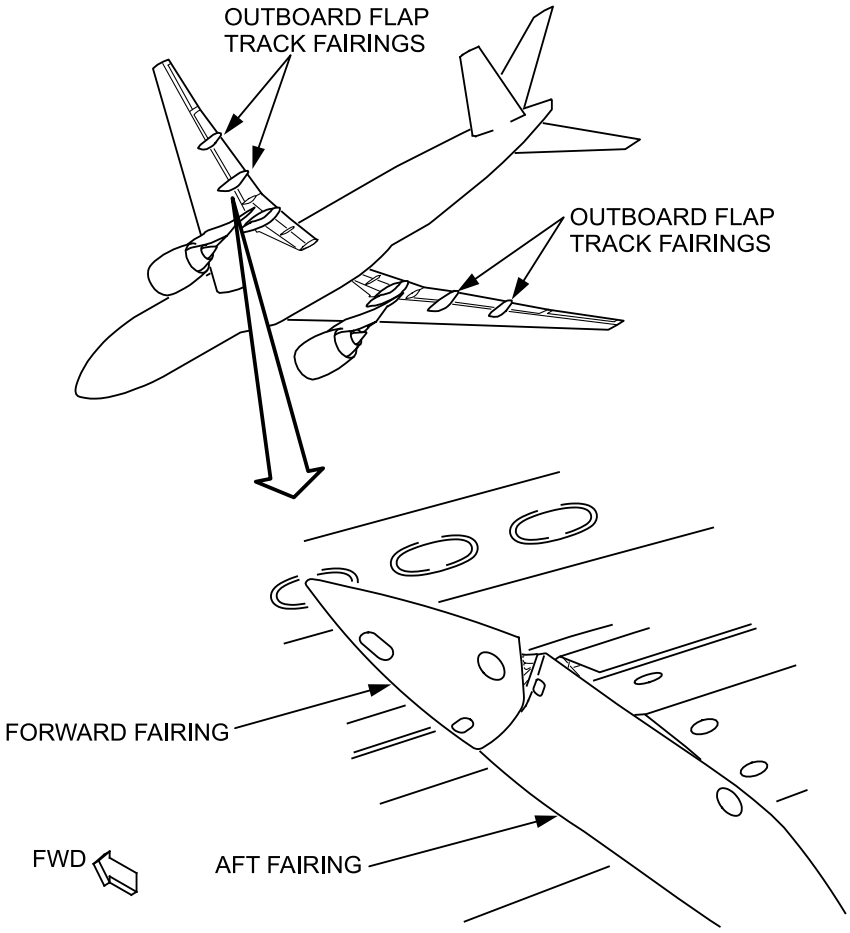
APPROACH

907 kg

LANDING

907 kg

LOCATION


OUTBOARD FLAP
TRACK FAIRINGS
OUTBOARD FLAP
TRACK FAIRINGS
FORWARD FAIRING
FWD
AFT FAIRING

57-26-06 Outboard Flap Track Fairing Seal

Interval	Installed	Required	Procedure
N/A	32	See below	**(O) (MV)**

A maximum of four per wing (eight total) may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

46 kg

ENROUTE CLIMB

69 kg

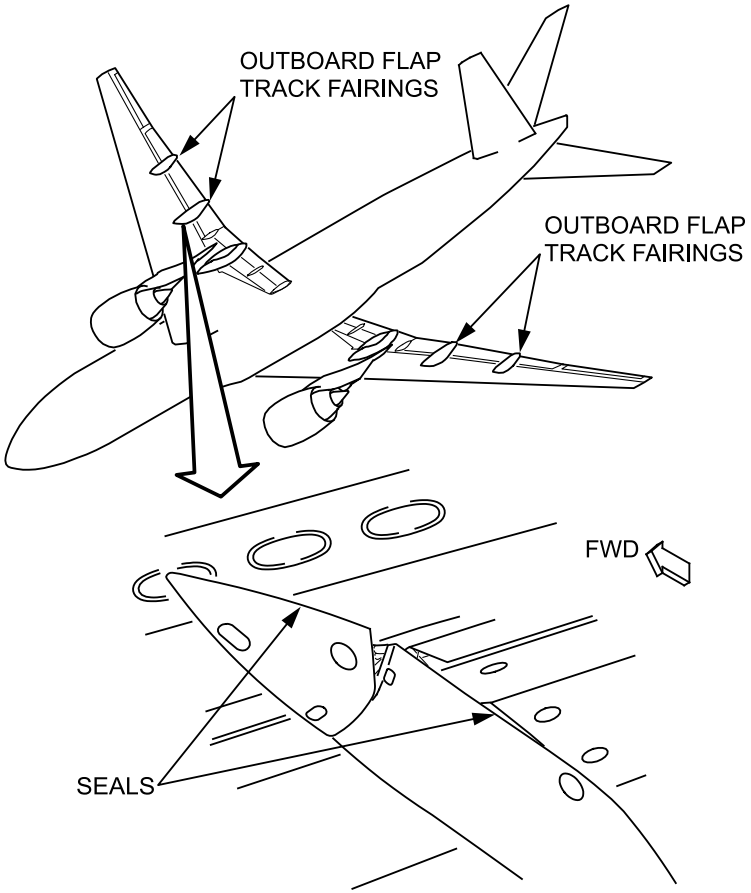
APPROACH

46 kg

LANDING

46 kg

LOCATION


OUTBOARD FLAP
TRACK FAIRINGS
OUTBOARD FLAP
TRACK FAIRINGS
FWD
SEALS

57-26-07 Outboard Flap Auxiliary Track Fairing

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

68 kg

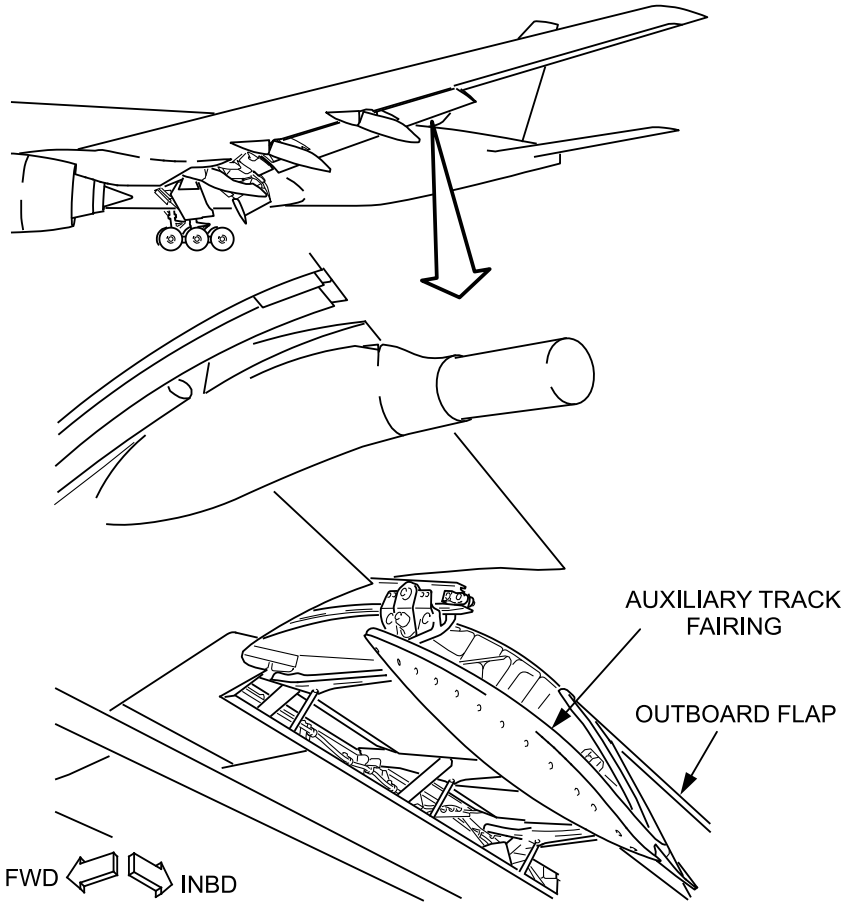
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



57-26-08 Outboard Flap Auxiliary Track Fairing Seal

Interval	Installed	Required	Procedure
N/A	4	2	**N/A**

A maximum of two may be missing.

a. Performance Limited weights are reduced by the following for each foot of missing seals:

OPERATIONS (O)

TAKE-OFF

23 kg

ENROUTE CLIMB

23 kg

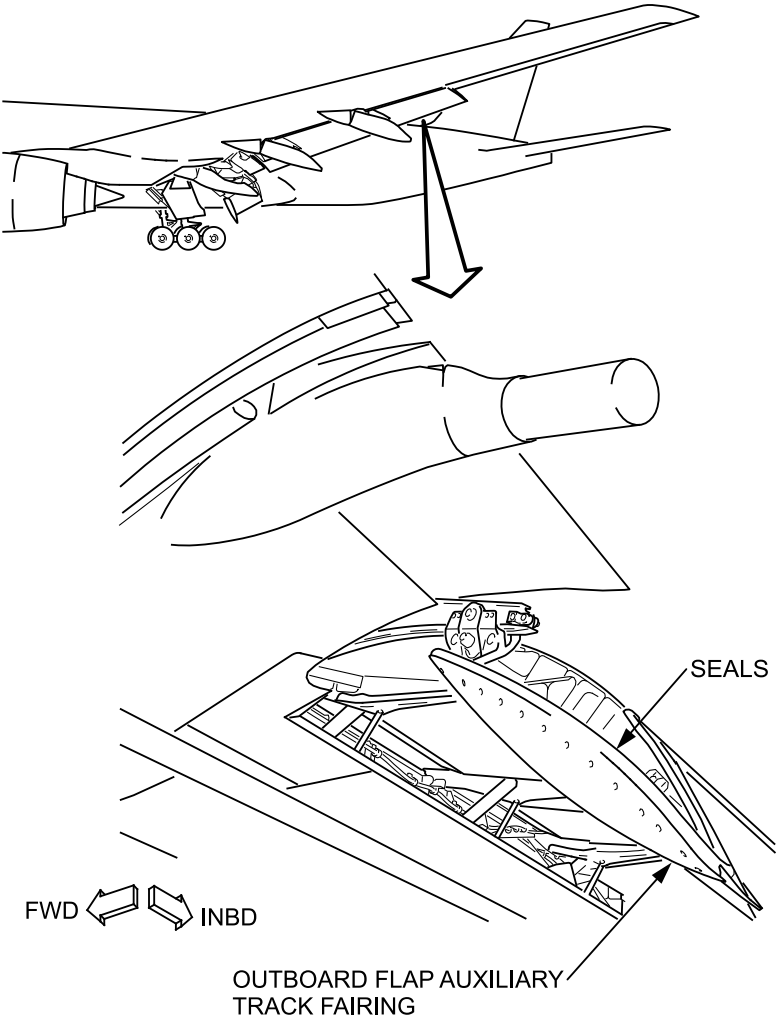
APPROACH

23 kg

LANDING

23 kg

LOCATION



57-26-09 Inboard Flap Track Flaperon Fairing Seals

Interval	Installed	Required	Procedure
N/A	18	See below	**(O) (MV)**

Any number may be missing.

a. For missing forward seal(s), the associated aft seals must be removed.

b. Performance limited weights are reduced by the following for each flaperon with missing seals:

Notes: 1. Each flaperon has 5 forward seals, 1 intermediate seal and 3 aft seals (9 per flaperon).

2. The penalties shown are for one or more seals missing from only one fairing. If one or more seals are missing from both fairings, the penalties are doubled.

OPERATIONS (O)

TAKE-OFF

182 kg

ENROUTE CLIMB

295 kg

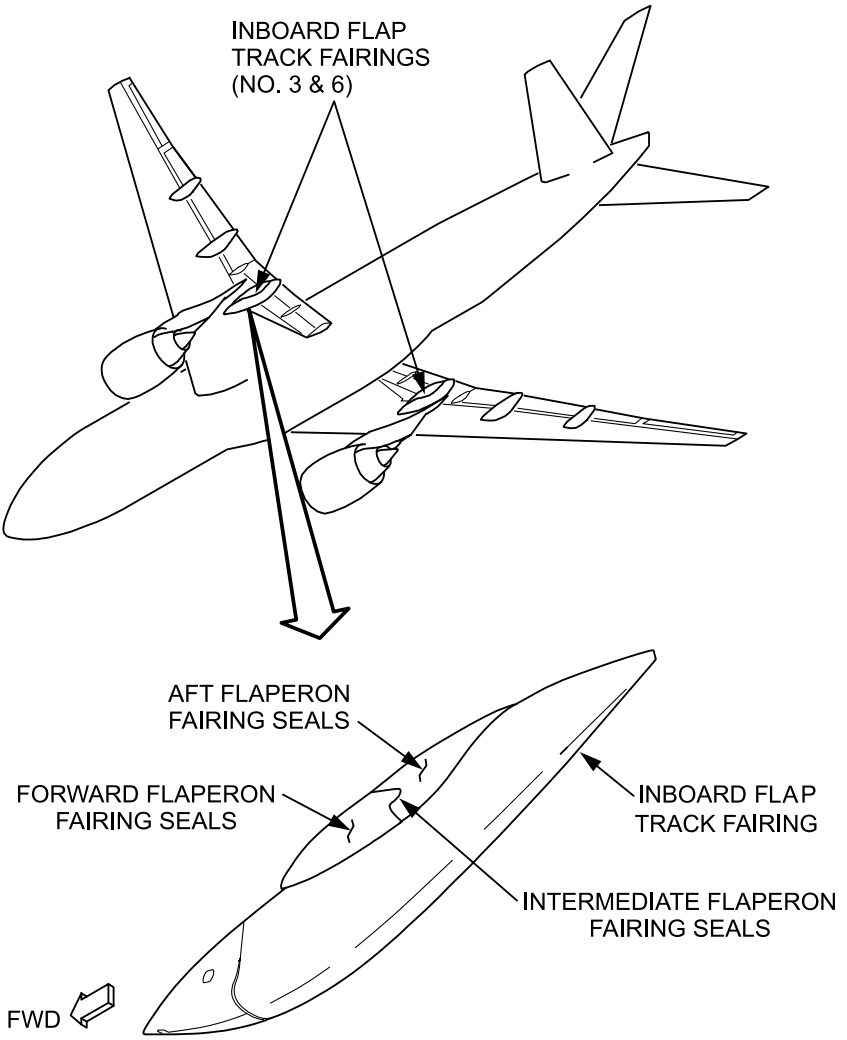
APPROACH

No penalty

LANDING

No penalty

LOCATION


INBOARD FLAP
TRACK FAIRINGS
(NO. 3 & 6)
AFT FLAPERON
FAIRING SEALS
FORWARD FLAPERON
FAIRING SEALS
INBOARD FLAP
TRACK FAIRING
INTERMEDIATE FLAPERON
FAIRING SEALS
FWD

57-26-10 Inboard Flap Inboard Fairing–Aft Segment

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

68 kg

ENROUTE CLIMB

113 kg

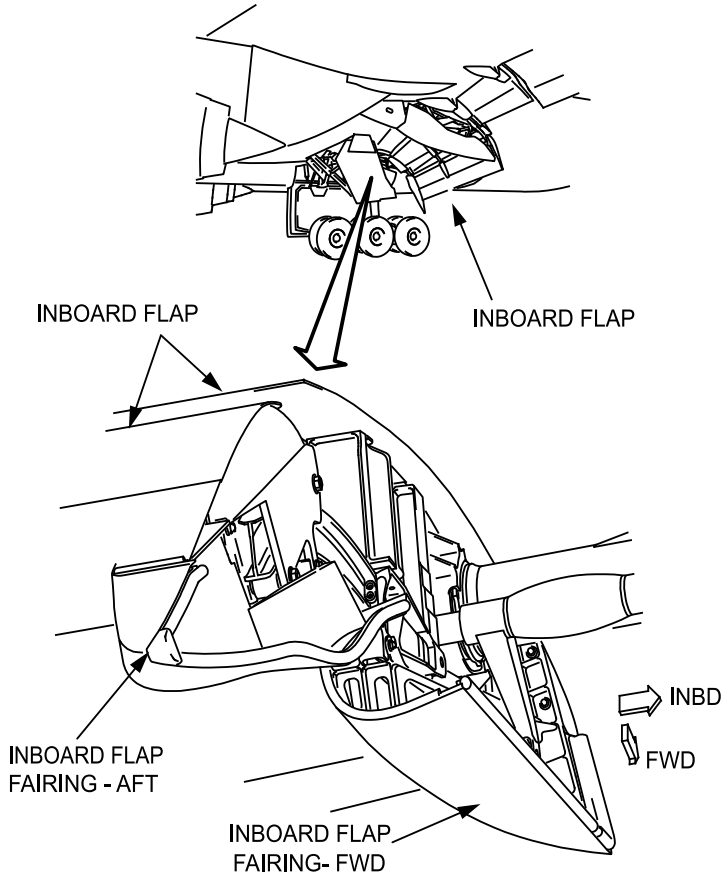
APPROACH

68 kg

LANDING

68 kg

LOCATION


INBOARD FLAP
INBOARD FLAP
INBOARD FLAP
FAIRING - AFT
INBOARD FLAP
FAIRING- FWD
INBD
FWD

57-31-01 Wing Tip Access Panel (-200/-200ER/-300)

-200,-200ER,-300

Interval	Installed	Required	Procedure
N/A	4	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

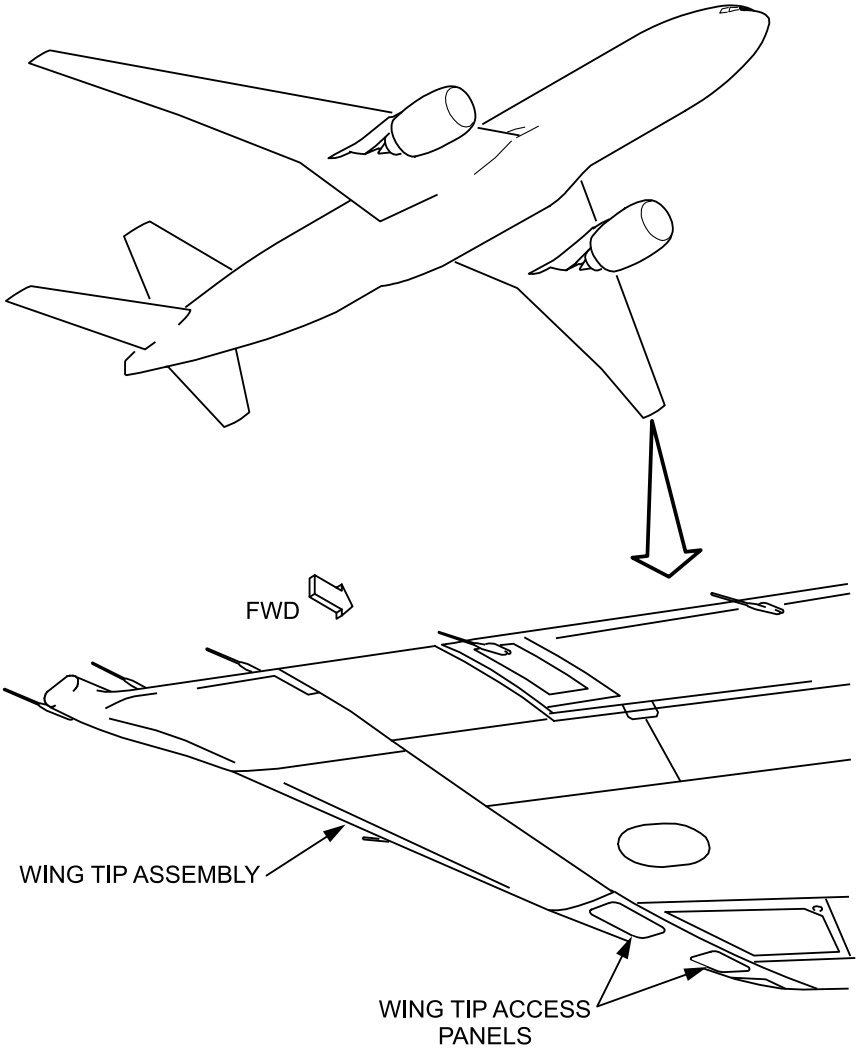
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



57-31-02 Wing Tip Fairing

57-31-02-01 Wing Tip Fairing (-200/-200ER/-300)

-200

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. For inoperative Position Lights, dispatch using MEL Item 33-43-01.

b. For inoperative Anti-collision Lights, dispatch using MEL Item 33-44-01.

c. Performance limited weights are reduced by the following:

Note: Static dischargers that are removed with the wing tip fairing are not considered missing.

OPERATIONS (O)

TAKE-OFF

6,328 kg

ENROUTE CLIMB

2,540 kg

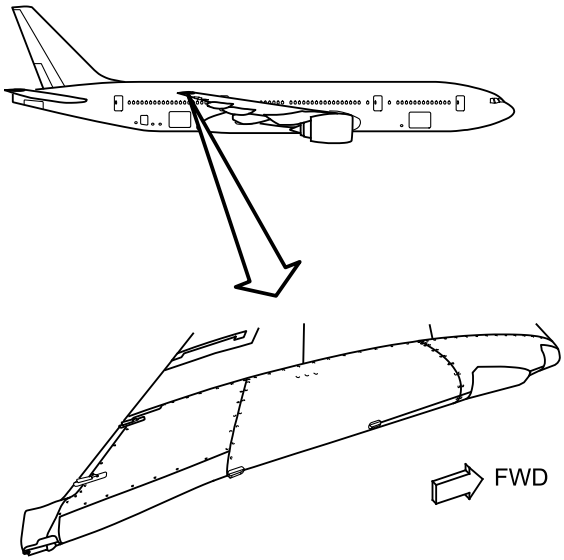
APPROACH

5,420 kg

LANDING

5,420 kg

LOCATION



WING TIP FAIRING

57-31-02 Wing Tip Fairing

-200ER **57-31-02-02 Wing Tip Fairing**

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. For inoperative Position Lights, dispatch using MEL item 33-43-01.

b. For inoperative Anti-collision Lights, dispatch using MEL item 33-44-01.

c. Performance limited weights are reduced by the following:

Note: Static dischargers that are removed with the wing tip fairing are not considered missing.

OPERATIONS (O)

TAKE-OFF

9,933 kg

ENROUTE CLIMB

2,858 kg

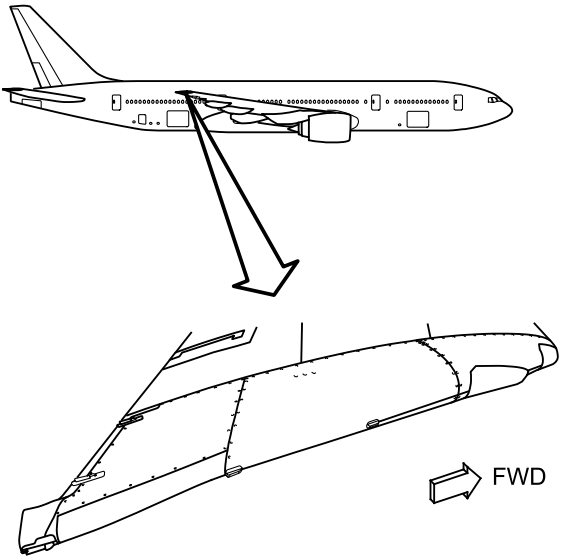
APPROACH

6,328 kg

LANDING

6,328 kg

LOCATION



WING TIP FAIRING

57-31-02 Wing Tip Fairing

-300 **57-31-02-03 Wing Tip Fairing**

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. For inoperative Position Lights, dispatch using MEL item 33-43-01.

b. For inoperative Anti-collision Lights, dispatch using MEL item 33-44-01.

c. Performance limited weights are reduced by the following:

Note: Static dischargers that are removed with the wing tip fairing are not considered missing.

OPERATIONS (O)

TAKE-OFF

7,235 kg

ENROUTE CLIMB

2,699 kg

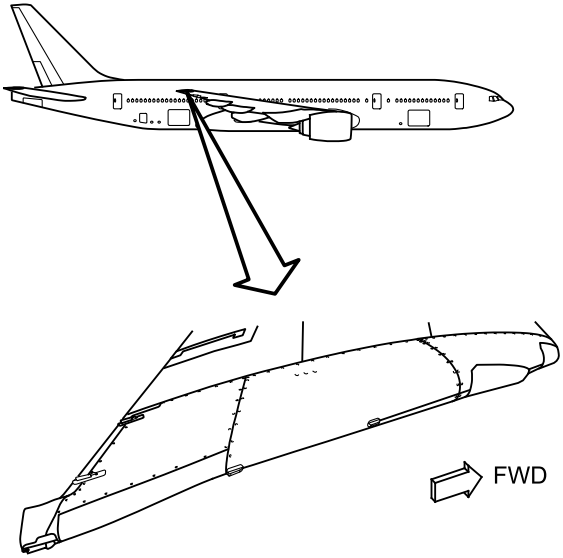
APPROACH

5,420 kg

LANDING

5,420 kg

LOCATION



WING TIP FAIRING

-300ER **57-31-03 Raked Tip (-300ER)**

Interval	Installed	Required	Procedure
N/A	2	See below	**(MV)**

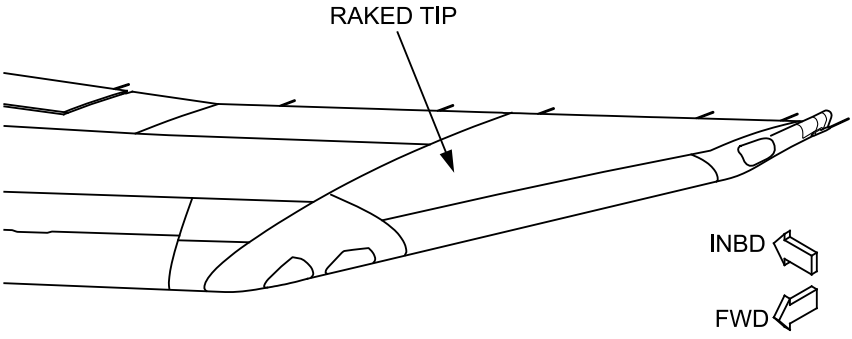
Raked wing tips may only be missing as a set.

a. For one raked wing tip missing, the other raked wing tip must be removed.
b. For inoperative position lights, dispatch using MEL Item 33-43-01.
c. For inoperative anti-collision lights, dispatch using MEL Item 33-44-01.
d. Static dischargers that are removed with the raked wing tips are not considered missing.

Both raked wing tips may be missing provided:

a. Night time operation with the raked wingtips removed is prohibited.
b. Increase VR, V2 and VREF speeds by 2 knots.
c. Reduce Takeoff performance limited weight by 11,385 kg.
d. Reduce Landing performance limited weight by 26,081 kg.
e. Reduce Enroute climb performance limited weight by 5,307 kg.
f. Reduce Maximum Quick Turnaround limited weight by 3,129 kg.
g. Observe the following Maximum Gross Weights:
    1) Taxi Weight is 300,277 kg.
    2) Takeoff Weight is 299,370 kg.
    3) Landing Weight is 237,682 kg.
    4) Zero Fuel Weight is 224,528 kg.
h. Observe Aft Center of Gravity limit of 38.5% MAC for weight above 287,123 kg.

LOCATION



-200LR/-300ER

57-41-01 Outboard Leading Edge Slat Restoration Seal Assembly

-200 **57-41-01-01 Outboard Leading Edge Slat Restoration Seal Assembly**

Interval	Installed	Required	Procedure
N/A	24	See below	**(O) (MV)**

One symmetrical set of seals may be missing.

a. For one seal missing, the symmetrical seal assembly on the opposite wing must be removed.

b. VREF is increased by 2 knots.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

1,905 kg

ENROUTE CLIMB

No penalty

APPROACH

1,632 kg

LANDING FIELD LENGTH

6,396 kg or increase landing field length by 150 ft/46 m

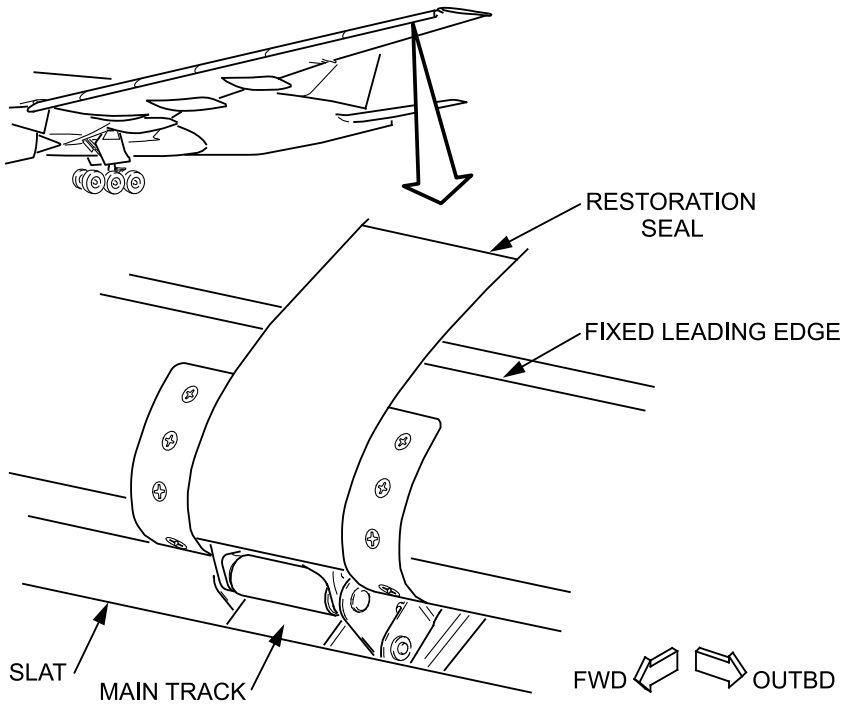
LANDING

1,632 kg

MAXIMUM QUICK TURNAROUND

2,722 kg

LOCATION



57-41-01 Outboard Leading Edge Slat Restoration Seal Assembly

57-41-01-02 Outboard Leading Edge Slat Restoration Seal Assembly -200ER

Interval	Installed	Required	Procedure
N/A	24	See below	**(O) (MV)**

One symmetrical set of seals may be missing.

a. For one seal missing, the symmetrical seal assembly on the opposite wing must be removed.

b. VREF is increased by 2 knots.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

2,993 kg

ENROUTE CLIMB

No penalty

APPROACH CLIMB

1,905 kg

LANDING FIELD LENGTH

6,396 kg or increase landing field length by 150 ft/ 46 m

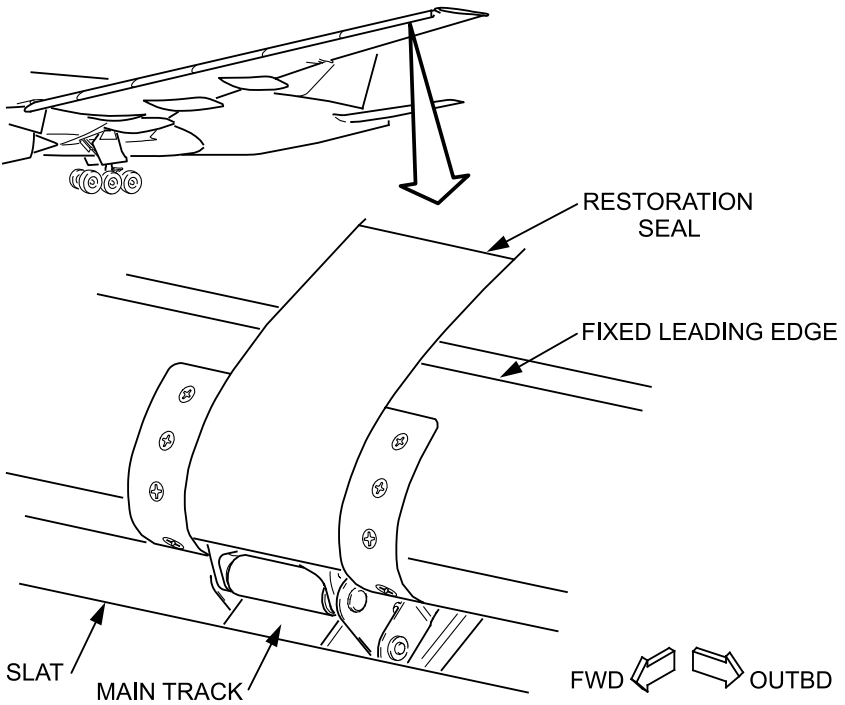
LANDING CLIMB

1,905 kg

MAXIMUM QUICK TURNAROUND

2,722 kg

LOCATION



57-41-01 Outboard Leading Edge Slat Restoration Seal Assembly

57-41-01-03 Outboard Leading Edge Slat Restoration Seal Assembly -300

Interval	Installed	Required	Procedure
N/A	24	See below	**(O) (MV)**

One symmetrical set of seals may be missing.

a. For one seal missing, the symmetrical seal assembly on the opposite wing must be removed.

b. VREF is increased by 2 knots.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

2,177 kg

ENROUTE CLIMB

No penalty

APPROACH

1,632 kg

LANDING FIELD LENGTH

6,396 kg or increase landing field length by 150 ft/46 m

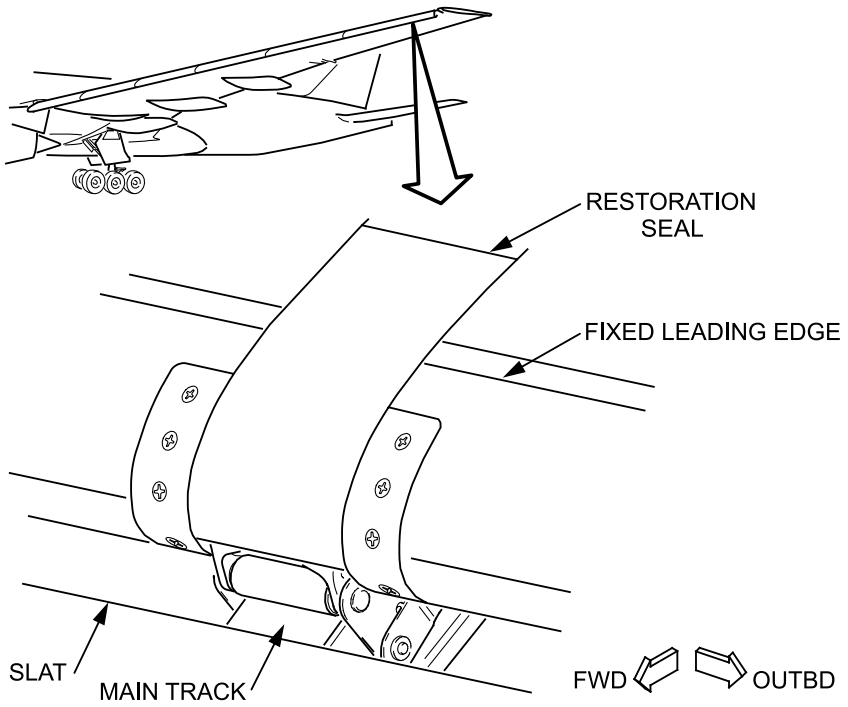
LANDING

1,632 kg

MAXIMUM QUICK TURNAROUND

2,722 kg

LOCATION



57-41-01 Outboard Leading Edge Slat Restoration Seal Assembly

57-41-01-04 Outboard Leading Edge Slat Restoration Seal Assembly -300ER

Interval	Installed	Required	Procedure
N/A	26	See below	**(O) (MV)**

One symmetrical set of seals may be missing.

a. For one seal missing, the symmetrical seal assembly on the opposite wing must be removed.

b. VREF is increased by 2 knots.

c. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

2,314 kg

ENROUTE CLIMB

No penalty

APPROACH

1,633 kg

LANDING FIELD LENGTH

7,438 kg

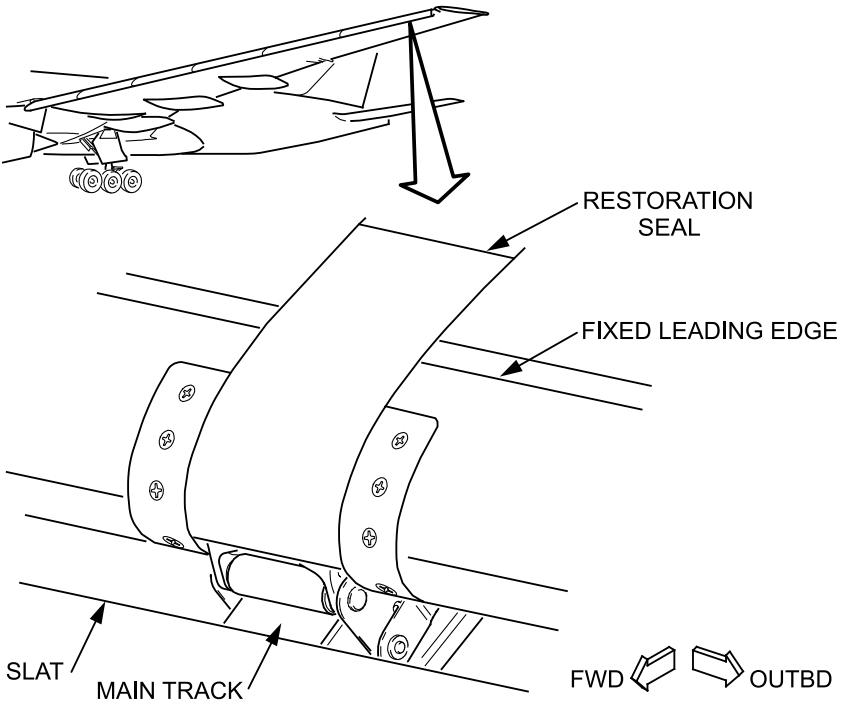
LANDING

1,633 kg

MAXIMUM QUICK TURNAROUND

6,078 kg

LOCATION


RESTORATION SEAL
FIXED LEADING EDGE
SLAT
MAIN TRACK
FWD
OUTBD

57-41-02 Wing Fixed Leading Edge Lower Panel

-200,-200ER, -300

57-41-02-01 Inboard/Outboard Panels

Interval	Installed	Required	Procedure
N/A	70	See below	**(O) (MV)**

A maximum of two per wing (four total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Inboard 386 kg/Outboard 114 kg

ENROUTE CLIMB

Inboard 613 kg/Outboard 159 kg

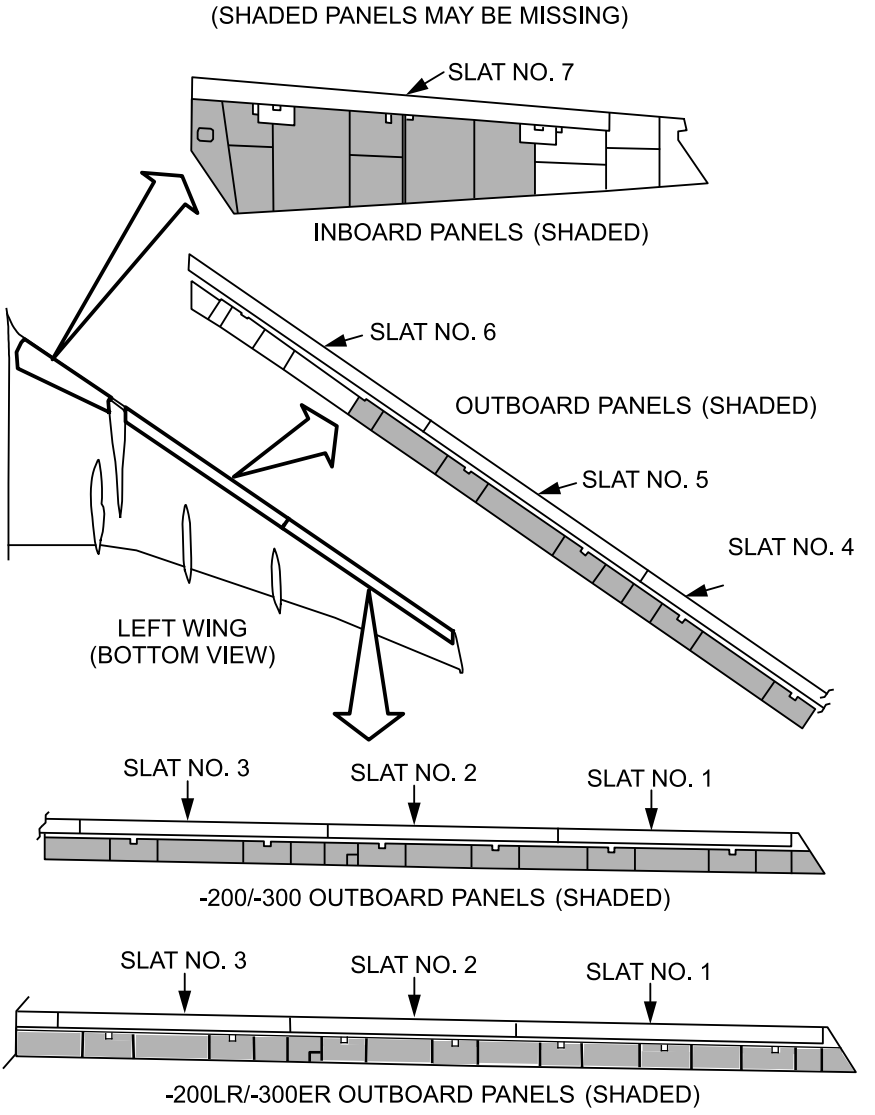
APPROACH

Inboard 341 kg/Outboard 91 kg

LANDING

Inboard 341 kg/Outboard 91 kg

LOCATION


(SHADED PANELS MAY BE MISSING)
SLAT NO. 7
INBOARD PANELS (SHADED)
SLAT NO. 6
OUTBOARD PANELS (SHADED)
SLAT NO. 5
SLAT NO. 4
LEFT WING
(BOTTOM VIEW)
SLAT NO. 3
SLAT NO. 2
SLAT NO. 1
-200/-300 OUTBOARD PANELS (SHADED)
SLAT NO. 3
SLAT NO. 2
SLAT NO. 1
-200LR/-300ER OUTBOARD PANELS (SHADED)

57-41-02 Wing Fixed Leading Edge Lower Panel

-300ER

57-41-02-02 Inboard/Outboard Panels

Interval	Installed	Required	Procedure
N/A	74	See below	**(O) (MV)**

A maximum of two per wing (four total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Inboard 273 kg/Outboard 69 kg

ENROUTE CLIMB

Inboard 567 kg/Outboard 159 kg

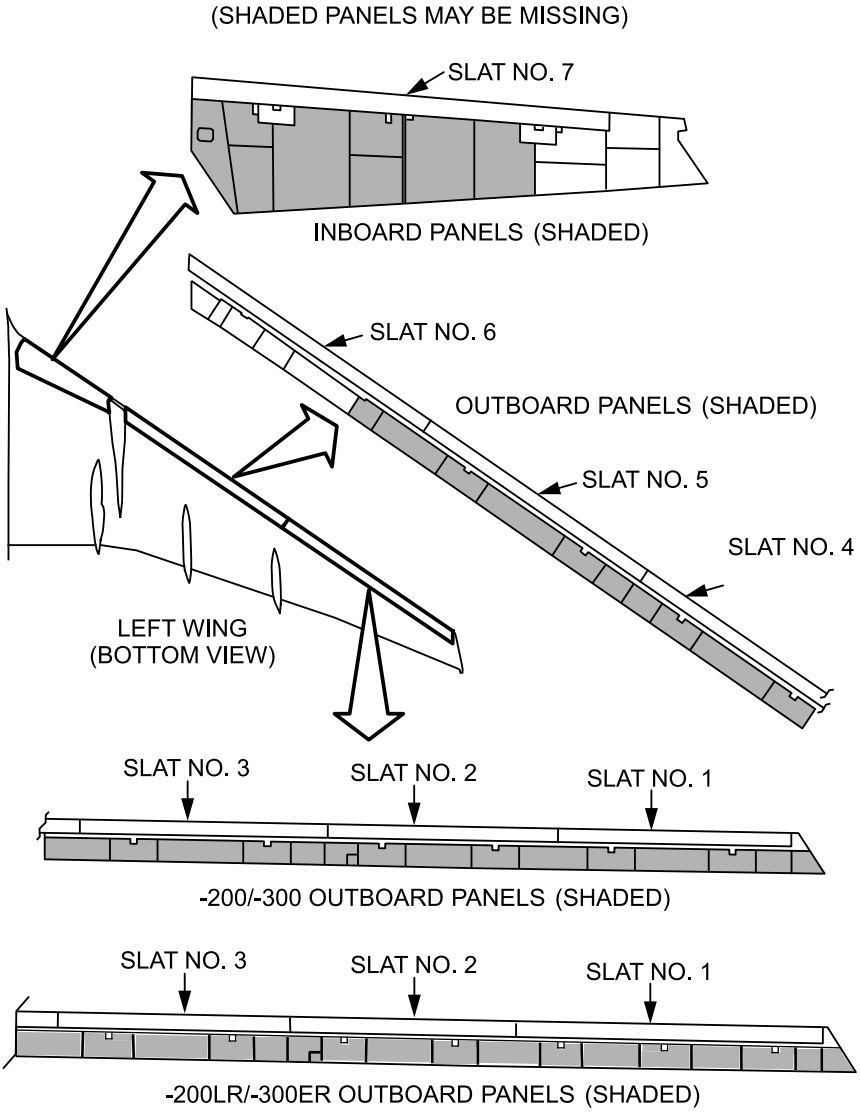
APPROACH

Inboard 205 kg/Outboard 69 kg

LANDING

Inboard 205 kg/Outboard 69 kg

LOCATION


(SHADED PANELS MAY BE MISSING)
SLAT NO. 7
INBOARD PANELS (SHADED)
SLAT NO. 6
OUTBOARD PANELS (SHADED)
SLAT NO. 5
SLAT NO. 4
LEFT WING
(BOTTOM VIEW)
SLAT NO. 3
SLAT NO. 2
SLAT NO. 1
-200/-300 OUTBOARD PANELS (SHADED)
SLAT NO. 3
SLAT NO. 2
SLAT NO. 1
-200LR/-300ER OUTBOARD PANELS (SHADED)

57-41-03 Slat Linkage Fairing Panel

-200,-200ER, -300

57-41-03-01 Slat Linkage Fairing Panel

Interval	Installed	Required	Procedure
N/A	32	See below	**N/A**

A maximum of six per wing (twelve total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

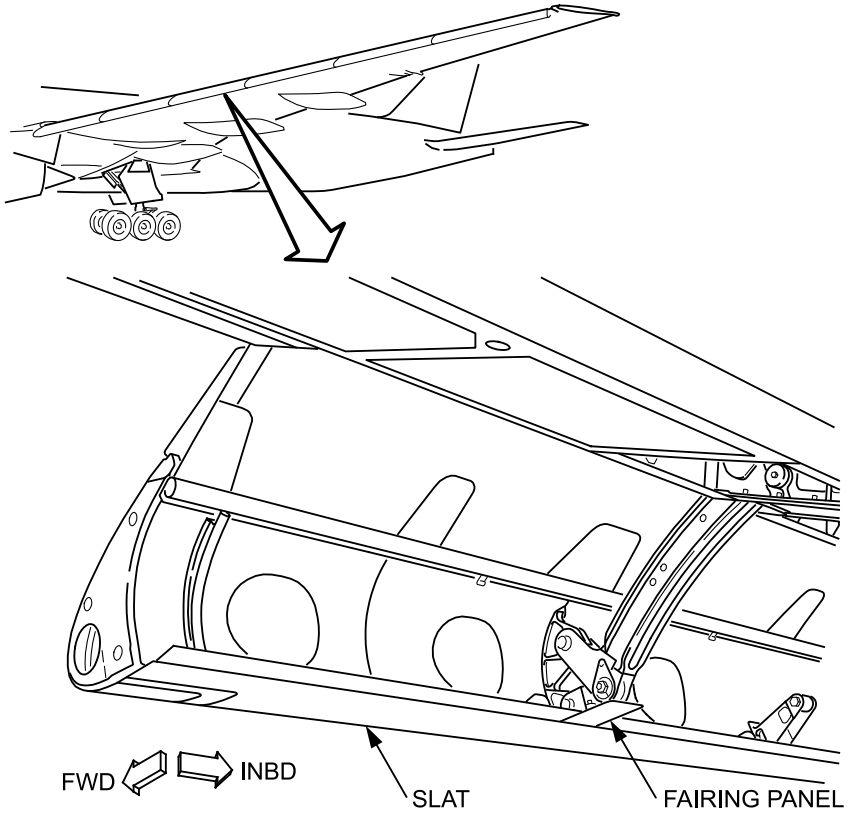
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-41-03 Slat Linkage Fairing Panel

-300ER **57-41-03-02 Slat Linkage Fairing Panel**

Interval	Installed	Required	Procedure
N/A	34	22	**N/A**

A maximum of six per wing (twelve total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

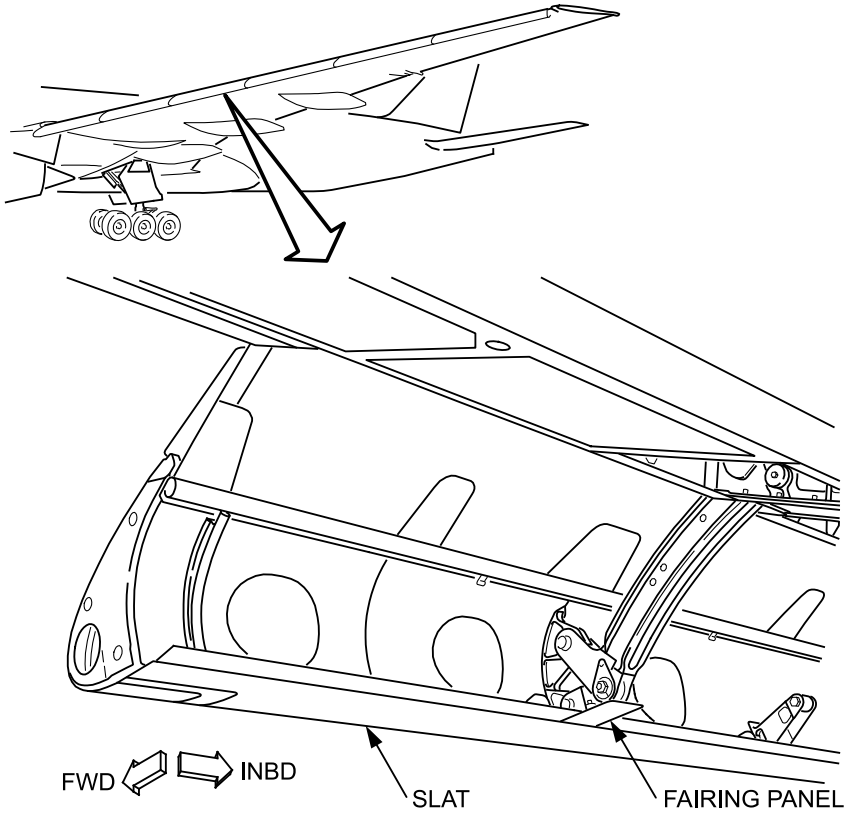
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-41-04 Slat Spanwise Flow Seal

Interval	Installed	Required	Procedure
N/A	28	See below	**(O) (MV)**

A maximum of two per wing (four total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible Penalty

ENROUTE CLIMB

91 kg

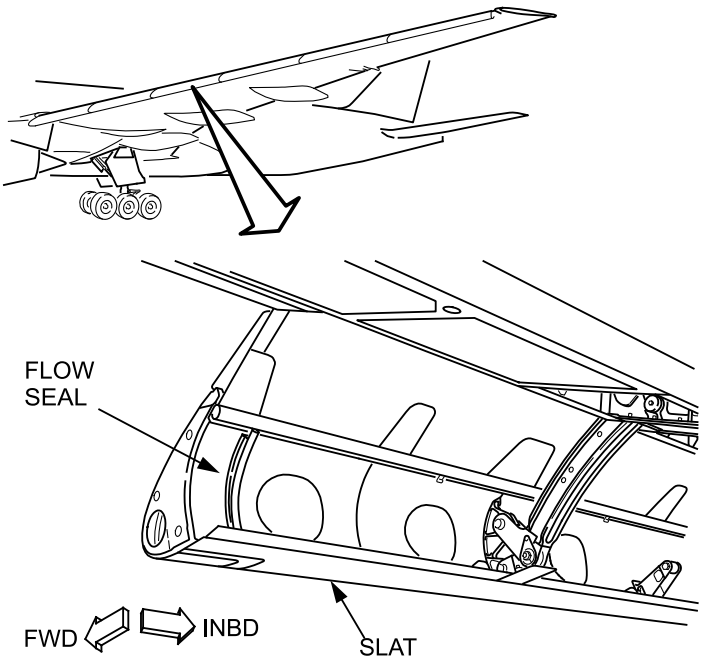
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-41-05 Outboard Slat Spanwise Bulb Seal

-200,-200ER, -300

57-41-05-01 Outboard Slat Spanwise Bulb Seal

Interval	Installed	Required	Procedure
N/A	12	See below	**(O) (MV)**

One per wing (two total) may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

Note: Airplanes affected by FAA Airworthiness Directive 2002-11-06 must comply with the Alternate Method of Compliance (AMOC) to AD 2002-11-06 (approved by FAA letter: 120S-02-636, dated 09-Aug-02) when operating with missing seals. AD 2002-11-06 is effective for airplane line number 1 through 369. Under the AMOC, airplanes affected by AD 2002-11-06 can operate with missing seals for a maximum of 50 flight hours provided the SB 777-57A0034 inspection is performed on the affected slat prior to further flight and at the time of seal replacement.

OPERATIONS (O)

TAKE-OFF

159 kg

ENROUTE CLIMB

227 kg

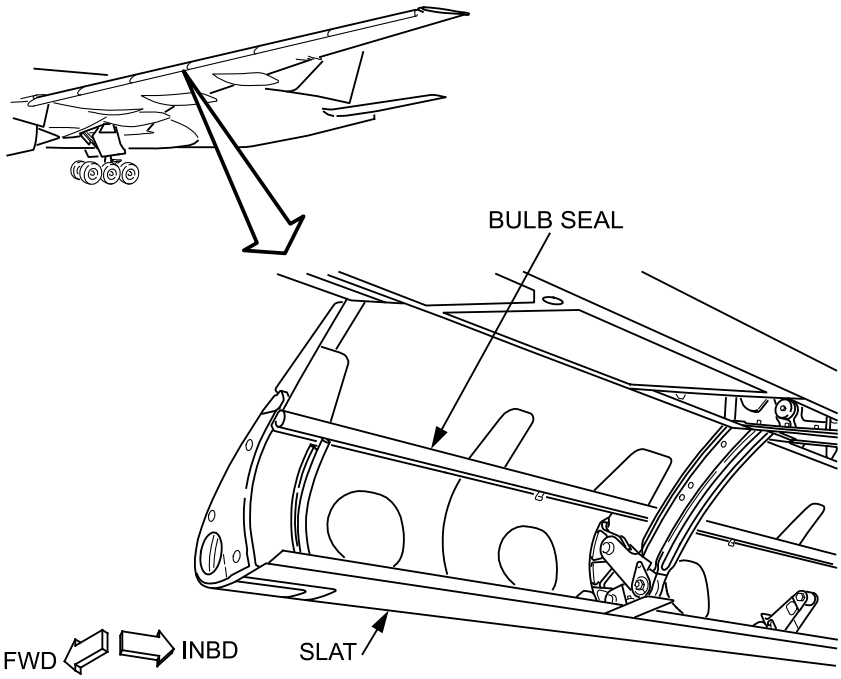
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-41-05 Outboard Slat Spanwise Bulb Seal

57-41-05-02 Outboard Slat Spanwise Bulb Seal -300ER

Interval	Installed	Required	Procedure
N/A	12	10	**(O) (MV)**

One per wing (two total) may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

Note: Airplanes affected by FAA Airworthiness Directive 2002-11-06 must comply with the Alternate Method of Compliance (AMOC) to AD 2002-11-06 (approved by FAA letter: 120S-02-636, dated 09-Aug-02) when operating with missing seals. AD 2002-11-06 is effective for airplane

line number 1 through 369. Under the AMOC, airplanes affected by AD 2002-11-06 can operate with missing seals for a maximum of 50 flight hours provided the SB 777-57A0034 inspection is performed on the affected slat prior to further flight and at the time of seal replacement.

OPERATIONS (O)

TAKE-OFF

137 kg

ENROUTE CLIMB

250 kg

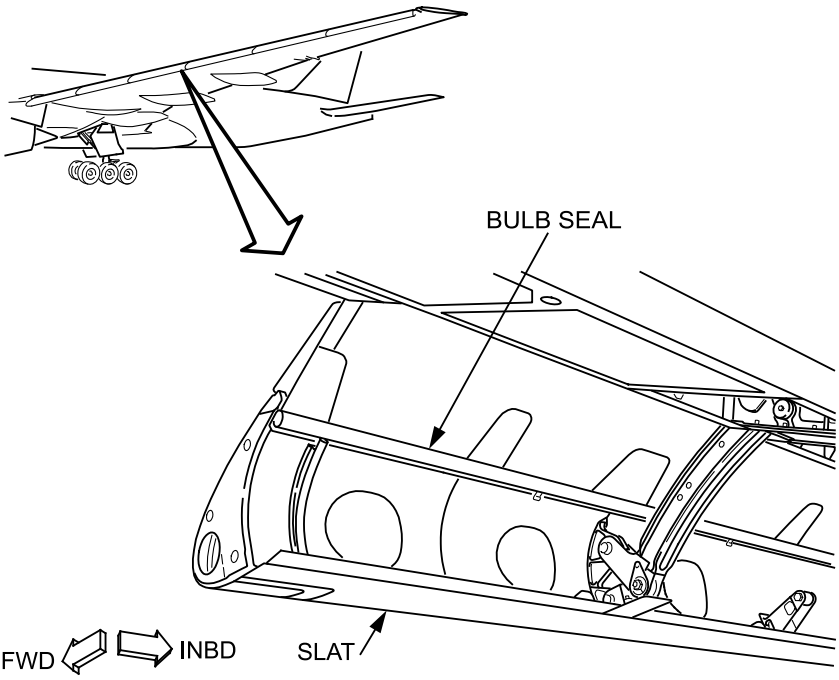
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-41-06 Slat Spanwise Lower Flexible Seal

-200,-200ER, -300 **57-41-06-01 Slat Spanwise Lower Flexible Seal**

Interval	Installed	Required	Procedure
N/A	40	See below	**N/A**

A maximum of four per wing (eight total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

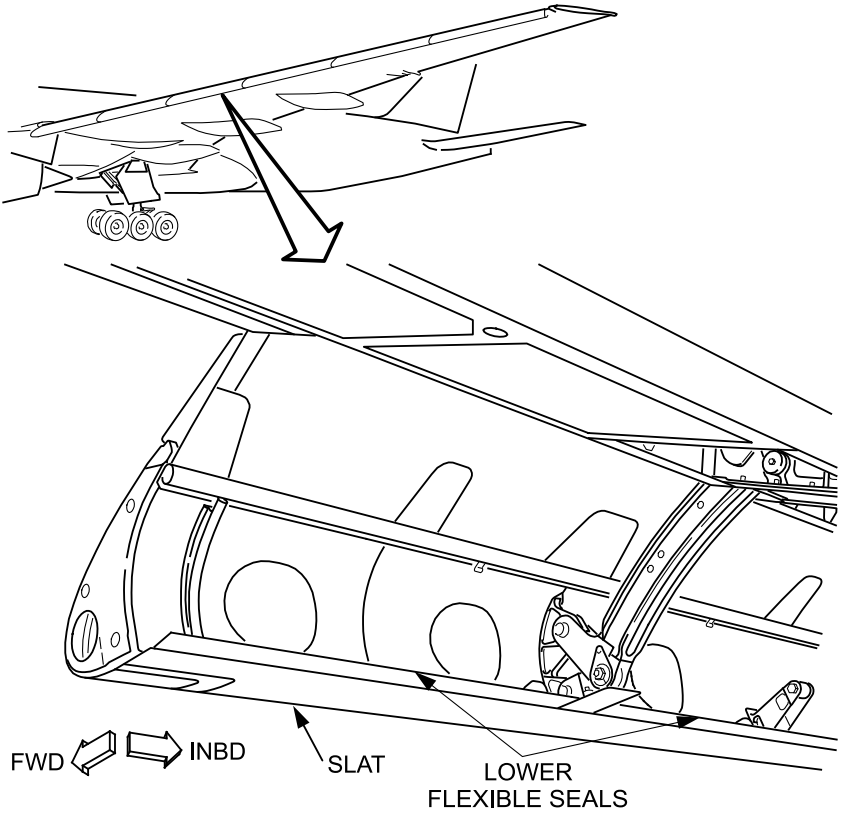
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-41-06 Slat Spanwise Lower Flexible Seal

-300ER **57-41-06-02 Slat Spanwise Lower Flexible Seal**

Interval	Installed	Required	Procedure
N/A	42	See below	**N/A**

A maximum of four per wing (eight total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

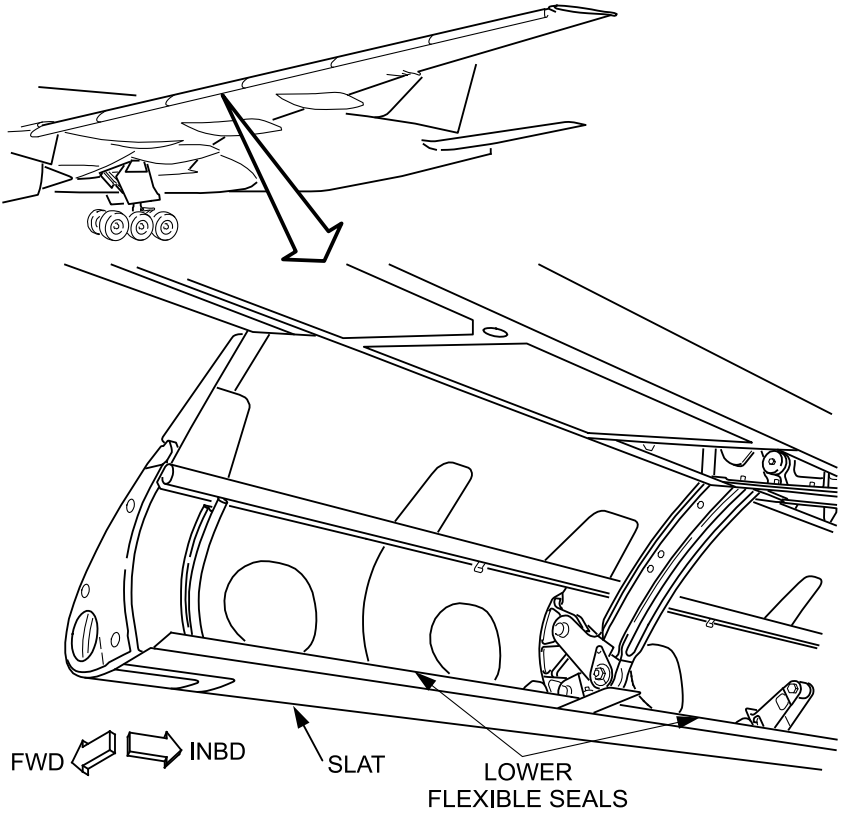
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-41-08 Inboard Slat Inboard End Bulb Seal

Interval	Installed	Required	Procedure
N/A	4	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

69 kg

ENROUTE CLIMB

113 kg

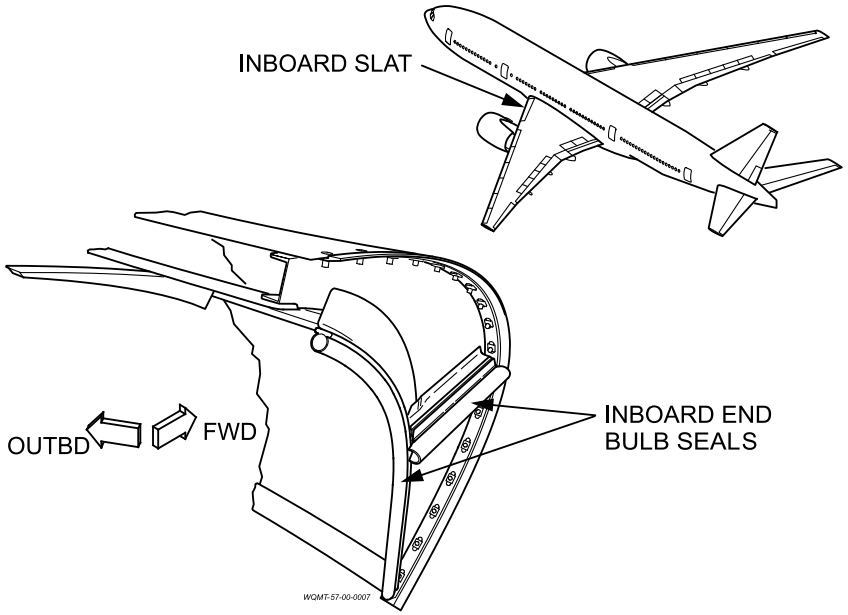
APPROACH

69 kg

LANDING

69 kg

LOCATION


INBOARD SLAT
OUTBD
FWD
INBOARD END
BULB SEALS
WQMT-57-00-0007

57-41-09 Krueger End Seal

-200 **57-41-09-01 Krueger End Seal**

Interval	Installed	Required	Procedure
N/A	6	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

477 kg

ENROUTE CLIMB

Negligible penalty

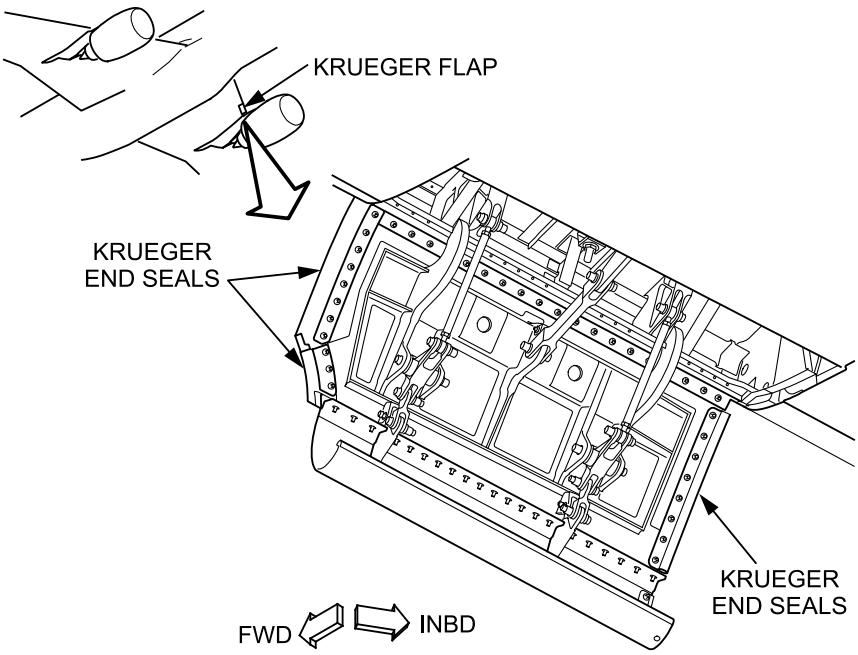
APPROACH

409 kg

LANDING

409 kg

LOCATION



57-41-09 Krueger End Seal

57-41-09-02 Krueger End Seal -200ER

Interval	Installed	Required	Procedure
N/A	6	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

749 kg

ENROUTE CLIMB

Negligible penalty

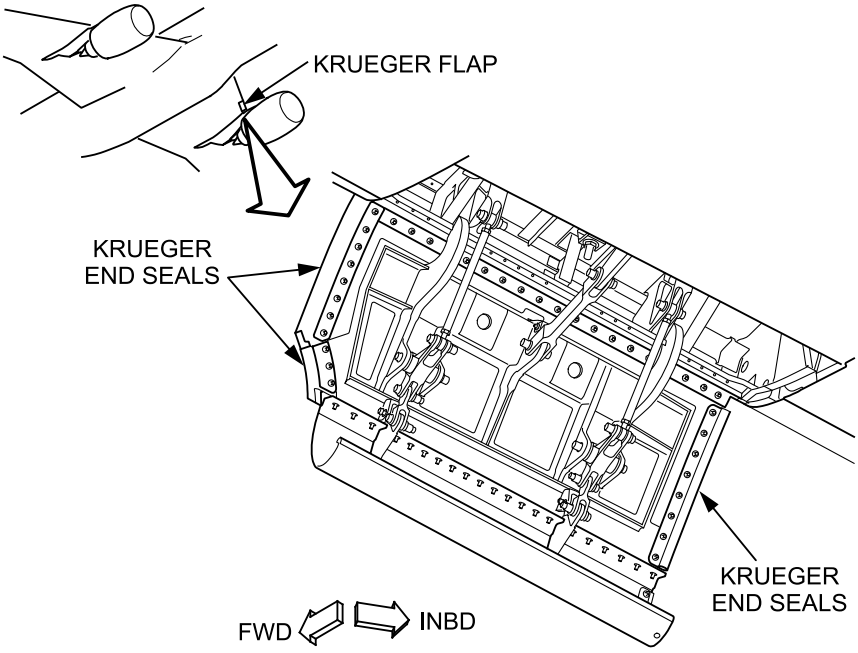
APPROACH

477 kg

LANDING

477 kg

LOCATION



57-41-09 Krueger End Seal

57-41-09-03 Krueger End Seal -300

Interval	Installed	Required	Procedure
N/A	6	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

545 kg

ENROUTE CLIMB

Negligible penalty

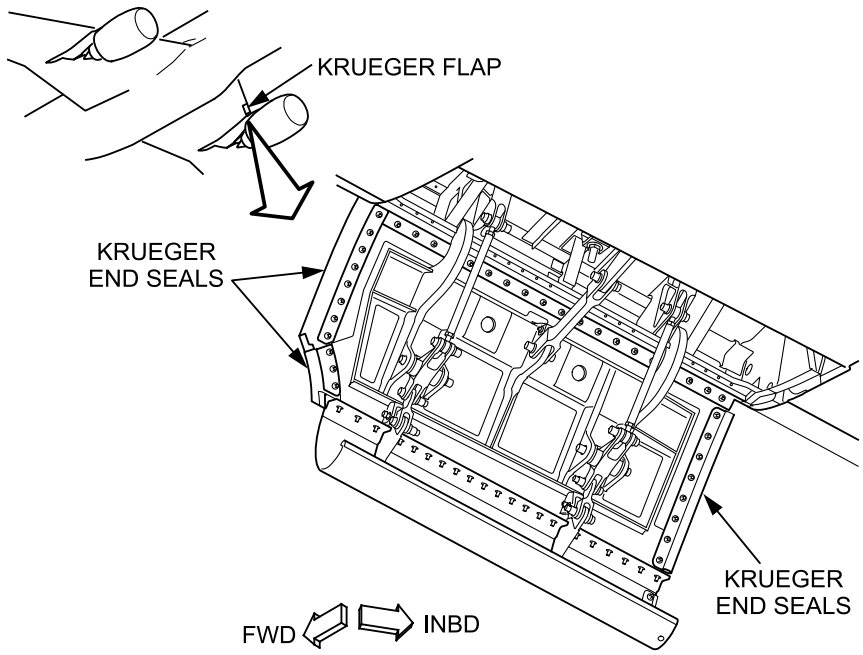
APPROACH

409 kg

LANDING

409 kg

LOCATION



57-41-09 Krueger End Seal

-300ER **57-41-09-04 Krueger End Seal**

Interval	Installed	Required	Procedure
N/A	6	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

590 kg

ENROUTE CLIMB

Negligible penalty

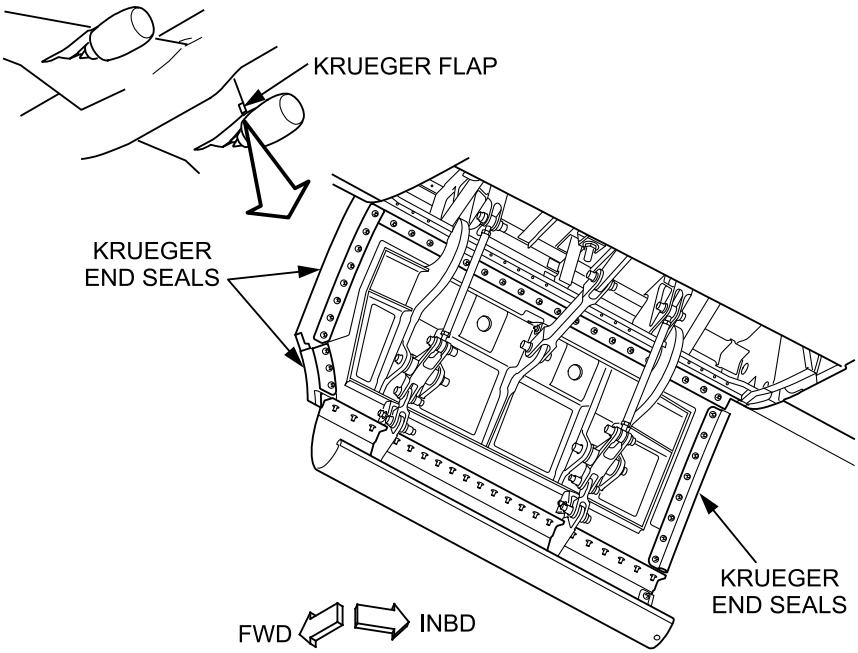
APPROACH

409 kg

LANDING

409 kg

LOCATION



57-51-01 Wing Fixed Trailing Edge Lower Panel

-200 **57-51-01-01 Wing Fixed Trailing Edge Lower Panel**

Interval	Installed	Required	Procedure
N/A	30	See below	**(O) (MV)**

Revenue flight is not permitted. A maximum of two per wing (four total) may be missing (Inboard or Outboard).

a. This item may not be missing in combination with CDL items 32-12-01 or 32-12-02.

b. For missing Inboard panels (forward of the inboard flaps), the maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

c. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

2,019 kg

ENROUTE CLIMB

4,332 kg

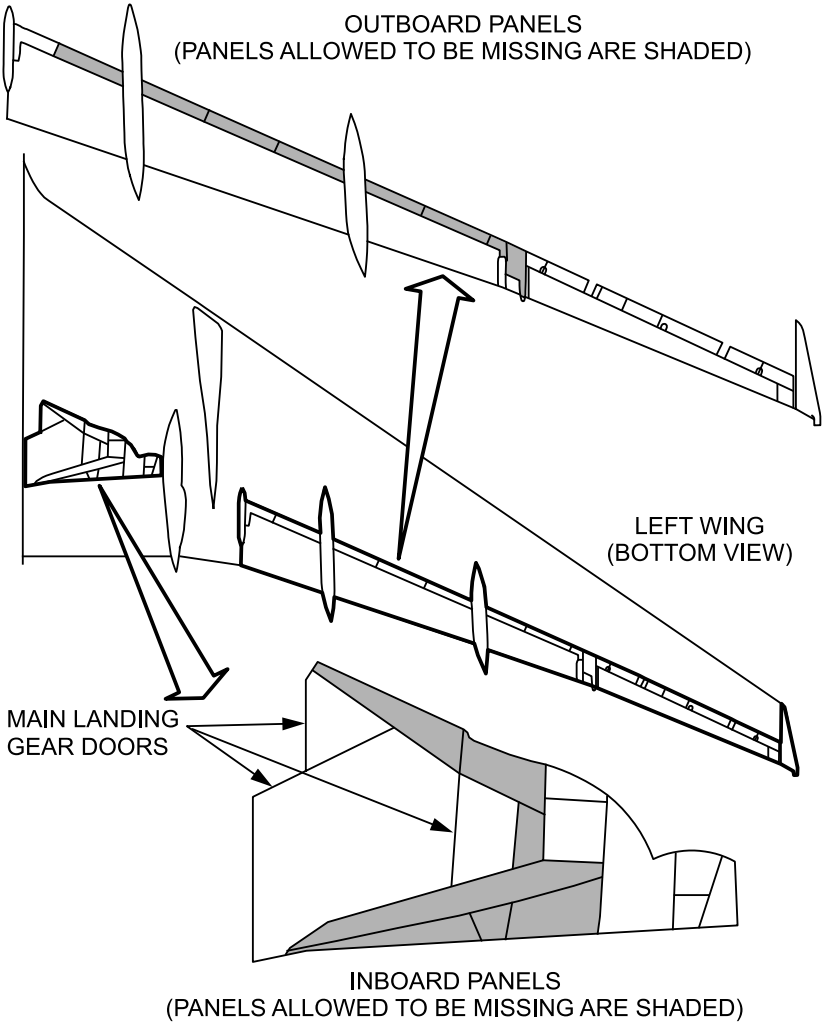
APPROACH

69 kg

LANDING

69 kg

LOCATION


OUTBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)
LEFT WING
(BOTTOM VIEW)
MAIN LANDING
GEAR DOORS
INBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)

57-51-01 Wing Fixed Trailing Edge Lower Panel

-200ER **57-51-01-02 Wing Fixed Trailing Edge Lower Panel**

Interval	Installed	Required	Procedure
N/A	30	See below	**(O) (MV)**

Revenue flight is not permitted. A maximum of two per wing (four total) may be missing (Inboard or Outboard).

a. This item may not be missing in combination with CDL items 32-12-01 or 32-12-02.

b. For missing Inboard panels (forward of the inboard flaps), the maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

c. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

3,176 kg

ENROUTE CLIMB

4,899 kg

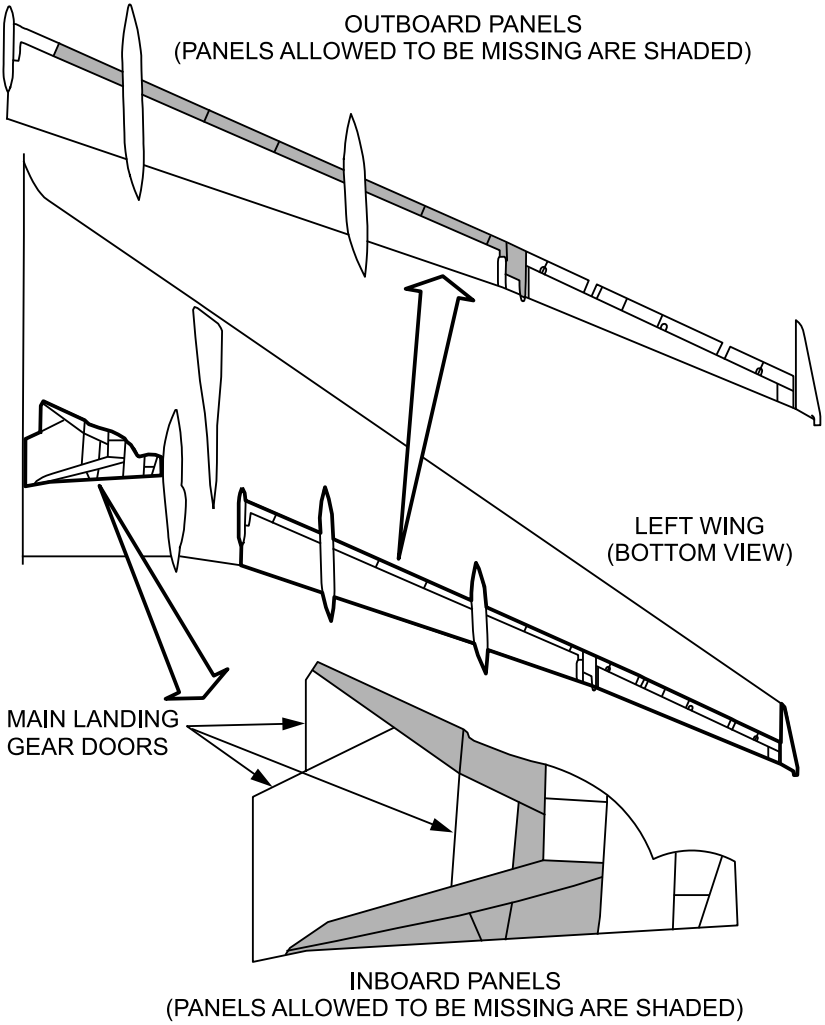
APPROACH

114 kg

LANDING

114 kg

LOCATION


OUTBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)
LEFT WING
(BOTTOM VIEW)
MAIN LANDING
GEAR DOORS
INBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)

57-51-01 Wing Fixed Trailing Edge Lower Panel

-300 **57-51-01-03 Wing Fixed Trailing Edge Lower Panel**

Interval	Installed	Required	Procedure
N/A	30	See below	**(O) (MV)**

Revenue flight is not permitted. A maximum of two per wing (four total) may be missing (Inboard or Outboard).

a. This item may not be missing in combination with CDL items 32-12-01 or 32-12-02.

b. For missing Inboard panels (forward of the inboard flaps), the maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

c. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

2,314 kg

ENROUTE CLIMB

4,604 kg

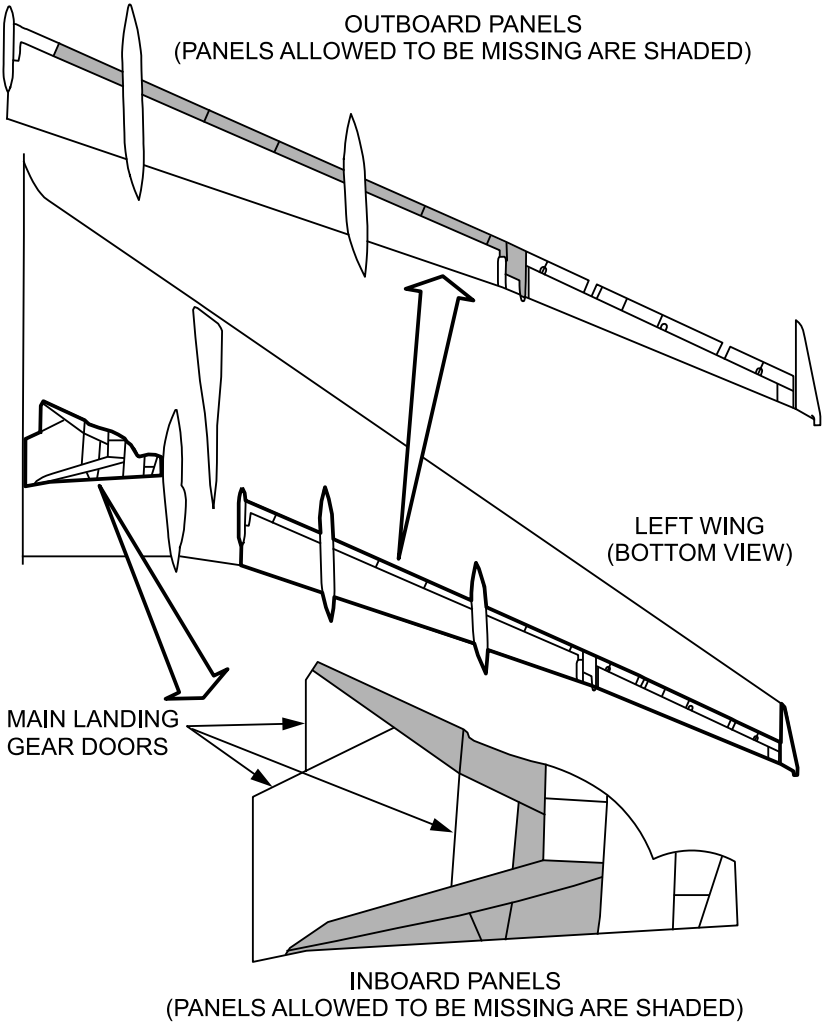
APPROACH

69 kg

LANDING

69 kg

LOCATION


OUTBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)
LEFT WING
(BOTTOM VIEW)
MAIN LANDING
GEAR DOORS
INBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)

57-51-01 Wing Fixed Trailing Edge Lower Panel

-300ER **57-51-01-04 Wing Fixed Trailing Edge Lower Panel**

Interval	Installed	Required	Procedure
N/A	30	See below	**(O) (MV)**

Revenue flight is not permitted. A maximum of two per wing (four total) may be missing (Inboard or Outboard).

a. This item may not be missing in combination with CDL items 32-12-01 or 32-12-02.

b. For missing Inboard panels (forward of the inboard flaps), the maximum airspeed limits (VMO/MMO) are 270 KIAS/0.73 Mach.

c. Alternate Gear Down Dispatch switch (Main Equipment Center, if installed) is placed in VMO position. The Warning Electronics System (WES) will set VMO/MMO to 270 KIAS/0.73 Mach and EICAS memo message VMO GEAR DOWN will be displayed.

d. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

2,450 kg

ENROUTE CLIMB

5,194 kg

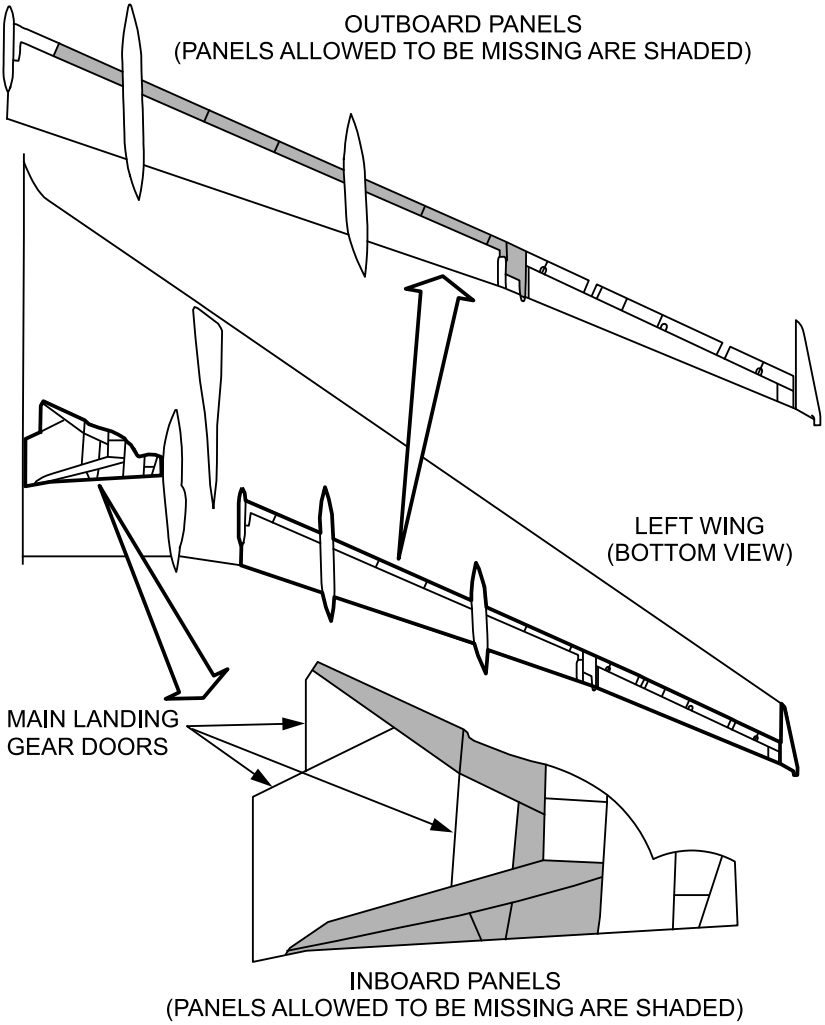
APPROACH

69 kg

LANDING

69 kg

LOCATION


OUTBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)
LEFT WING
(BOTTOM VIEW)
MAIN LANDING
GEAR DOORS
INBOARD PANELS
(PANELS ALLOWED TO BE MISSING ARE SHADED)

57-51-02 Inboard Flap Inboard Seal

-200,-200ER, -300

57-51-02-01 Inboard Flap Inboard Seal

Interval	Installed	Required	Procedure
N/A	6	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing seal:

OPERATIONS (O)

TAKE-OFF

137 kg

ENROUTE CLIMB

205 kg

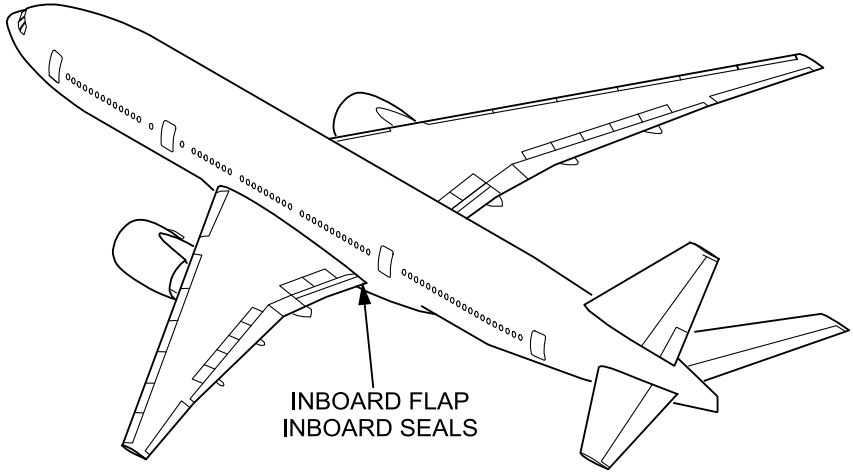
APPROACH

318 kg

LANDING

318 kg

LOCATION



57-51-02 Inboard Flap Inboard Seal

57-51-02-02 Inboard Flap Inboard Seal -300ER

Interval	Installed	Required	Procedure
N/A	6	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing seal:

OPERATIONS (O)

TAKE-OFF

114 kg

ENROUTE CLIMB

182 kg

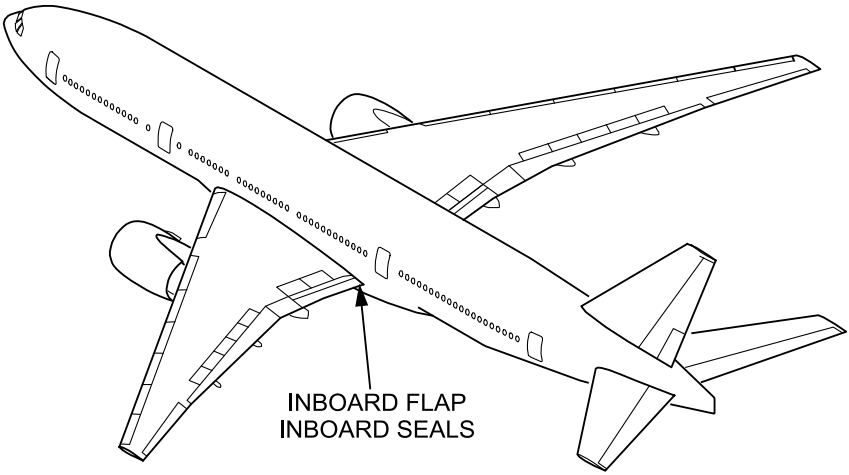
APPROACH

227 kg

LANDING

227 kg

LOCATION



57-51-03 Overwing Fairing Torque Tube Door

57-51-03-01 Overwing Fairing Torque Tube Door -200

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

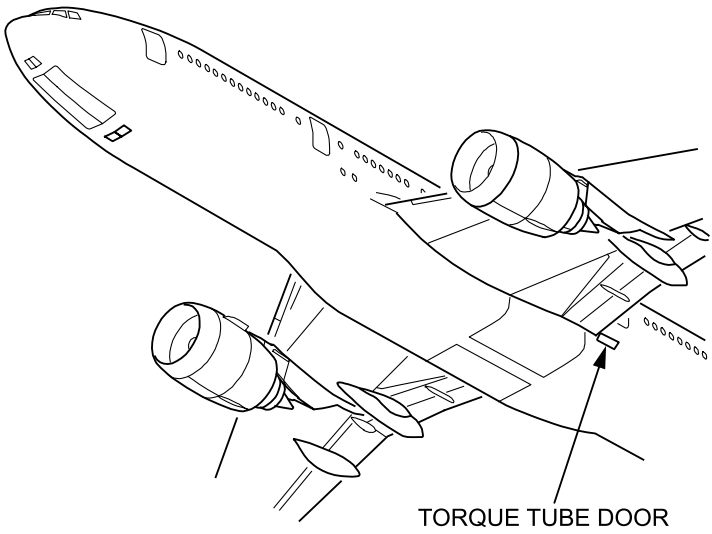
APPROACH

3,198 kg

LANDING

3,198 kg

LOCATION



57-51-03 Overwing Fairing Torque Tube Door

-200ER **57-51-03-02 Overwing Fairing Torque Tube Door**

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

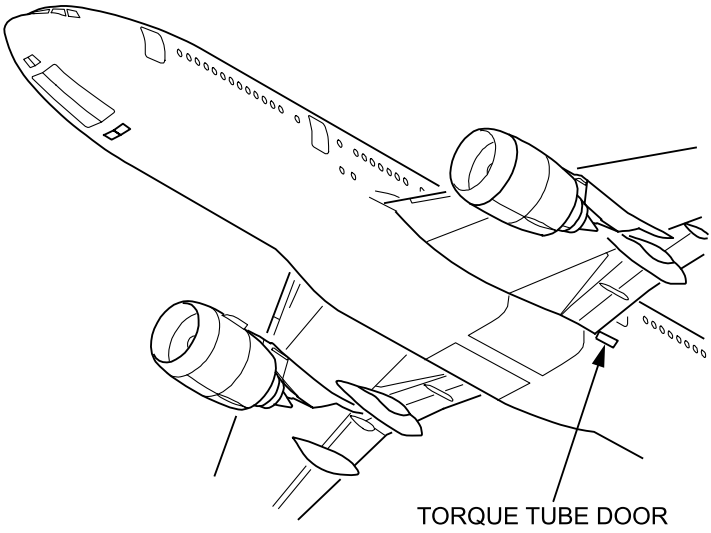
APPROACH

3,719 kg

LANDING

3,719 kg

LOCATION



57-51-03 Overwing Fairing Torque Tube Door

57-51-03-03 Overwing Fairing Torque Tube Door -300

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

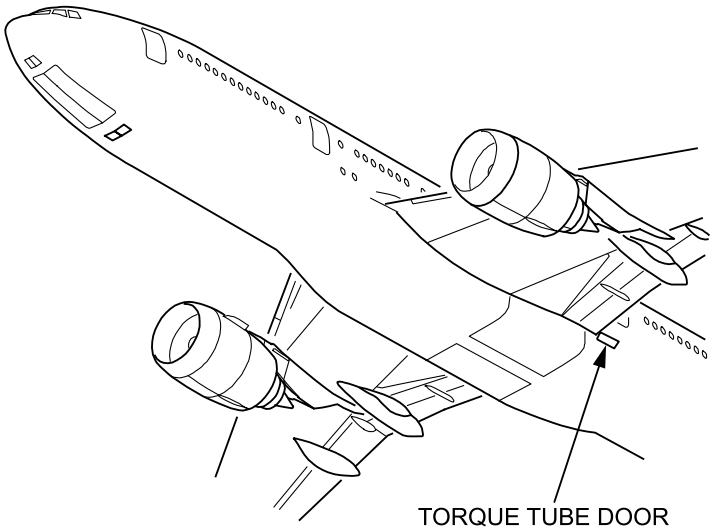
APPROACH

3,198 kg

LANDING

3,198 kg

LOCATION



57-51-03 Overwing Fairing Torque Tube Door

57-51-03-04 Overwing Fairing Torque Tube Door -300ER

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

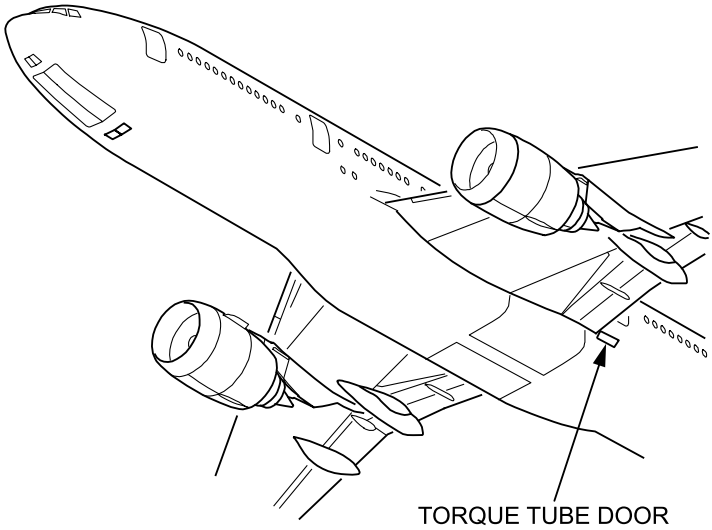
APPROACH

3,198 kg

LANDING

3,198 kg

LOCATION



57-51-04 Number 3 & 6 Flap Fairings Seals

Interval	Installed	Required	Procedure
N/A	20	See below	**(O) (MV)**

A maximum of seven seals (including hinge on aft-most seal) per fairing (fourteen total) may be missing.

a. Performance limited weights are reduced by the following:

Note: The penalties shown are for one or more seals missing from only one fairing. If one or more seals are missing from both fairings, the penalties are doubled.

OPERATIONS (O)

TAKE-OFF

68 kg

ENROUTE CLIMB

113 kg

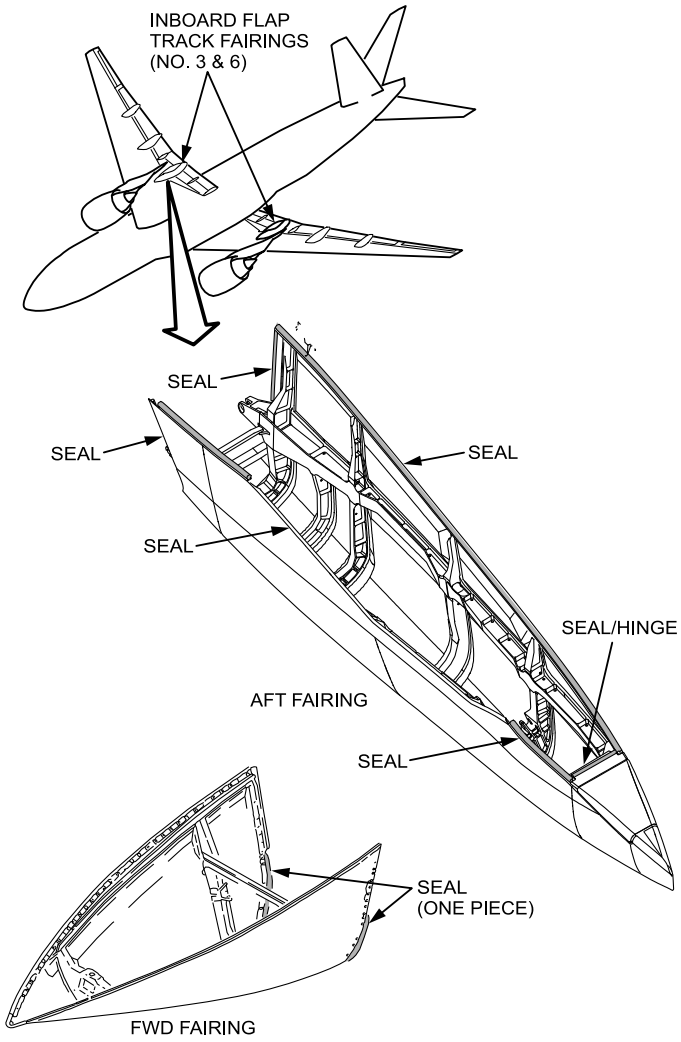
APPROACH

No penalty

LANDING

No penalty

LOCATION


INBOARD FLAP
TRACK FAIRINGS
(NO. 3 & 6)
SEAL
SEAL
SEAL
SEAL
SEAL/HINGE
AFT FAIRING
SEAL
SEAL
(ONE PIECE)
FWD FAIRING

57-53-01 Flaperon Inboard Seal

Interval	Installed	Required	Procedure
N/A	12	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

91 kg

ENROUTE CLIMB

159 kg

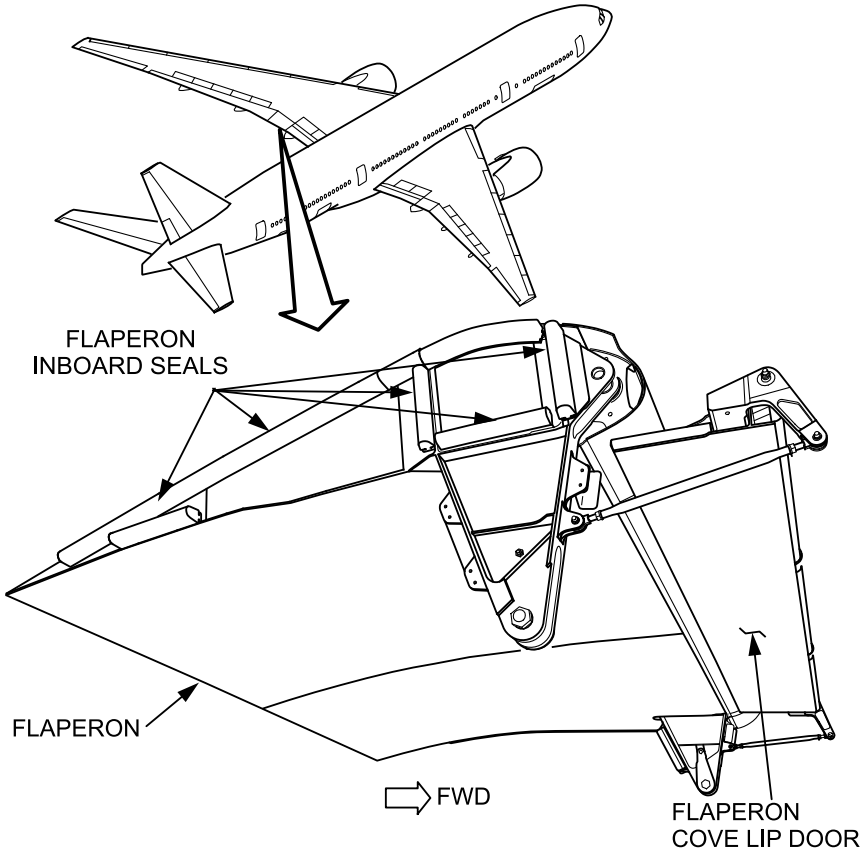
APPROACH

91 kg

LANDING

91 kg

LOCATION


FLAPERON
INBOARD SEALS
FLAPERON
FWD
FLAPERON
COVE LIP DOOR

57-53-02 Inboard Flap Leading Edge Seal

Interval	Installed	Required	Procedure
N/A	20	See below	**(O) (MV)**

A maximum of two per wing (four total) may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

68 kg

ENROUTE CLIMB

113 kg

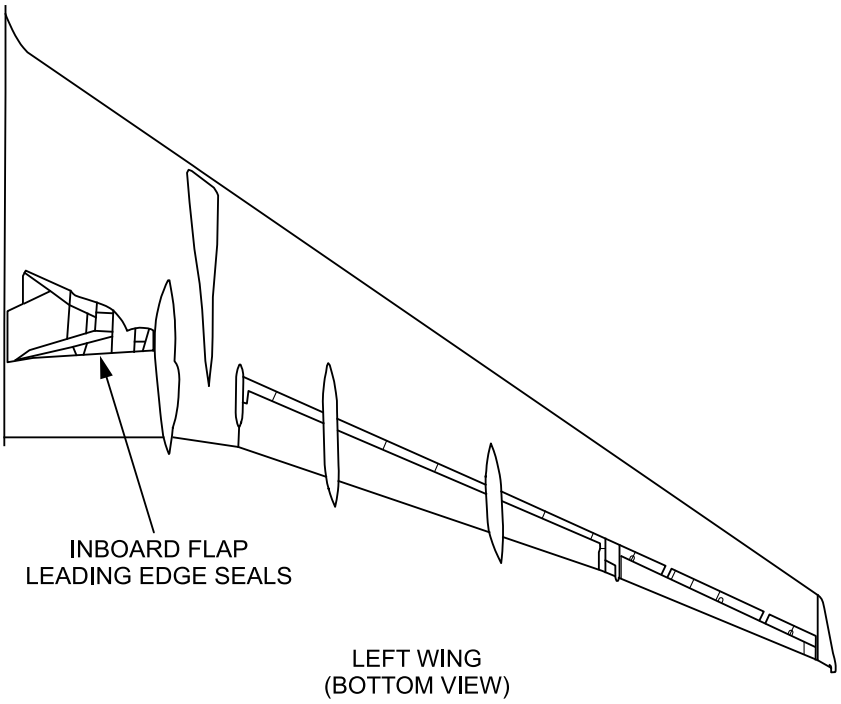
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-53-03 Outboard Flap Leading Edge Seal

Interval	Installed	Required	Procedure
N/A	8	See below	**(O) (MV)**

One per wing (two total) may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

68 kg

ENROUTE CLIMB

113 kg

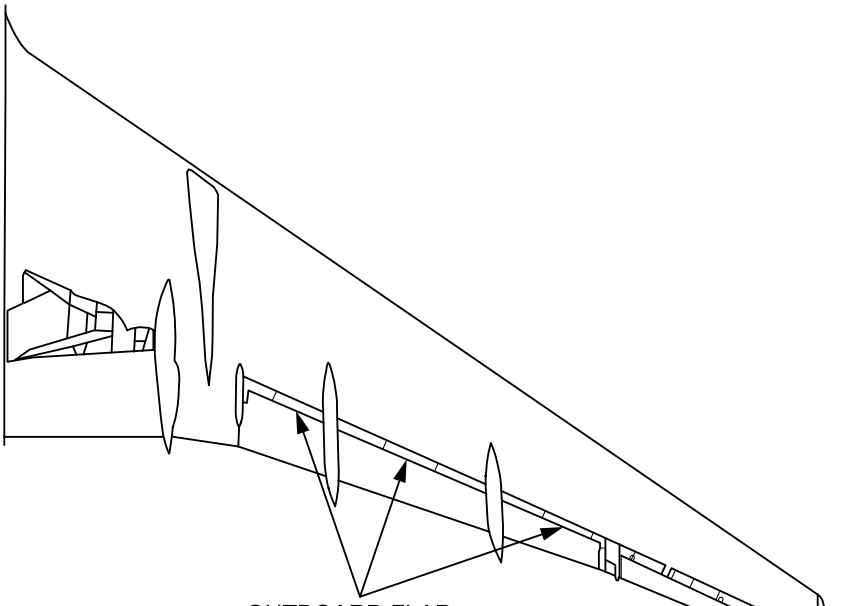
APPROACH

No penalty

LANDING

No penalty

LOCATION



LEFT WING
(BOTTOM VIEW)

57-63-02 Flaperon Cove Lip Door Streamwise Seal

Interval	Installed	Required	Procedure
N/A	4	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

68 kg

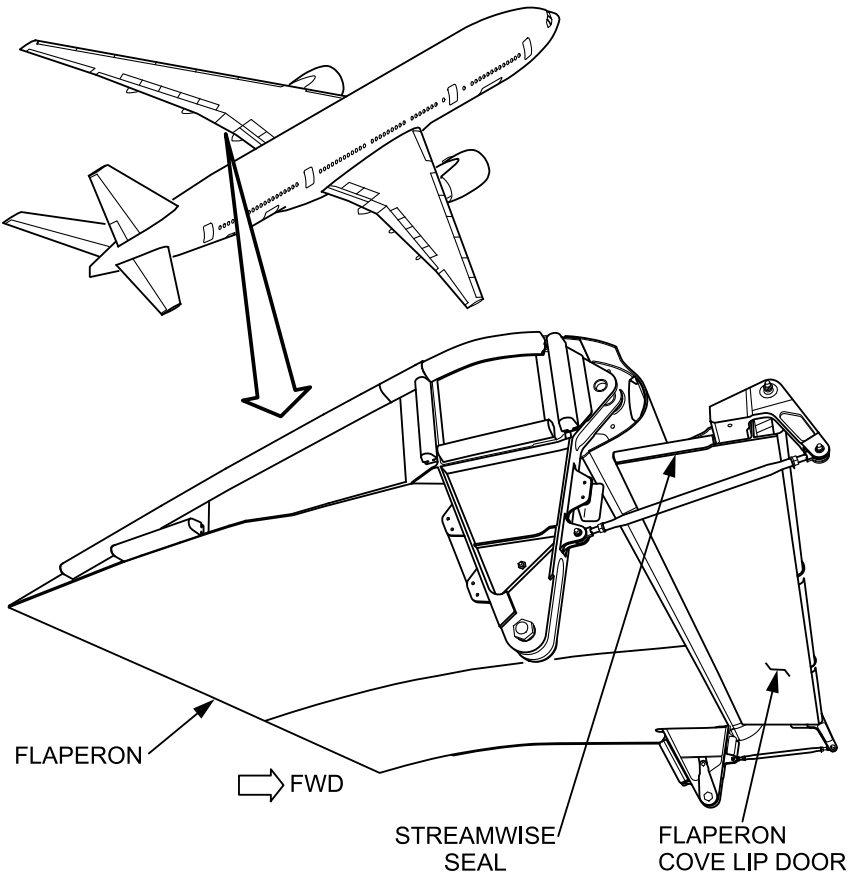
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-63-03 Flaperon Cove Lip Door Hingewise Seal

57-63-03-01 Flaperon Cove Lip Door Hingewise Seal -200

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

363 kg

ENROUTE CLIMB

771 kg

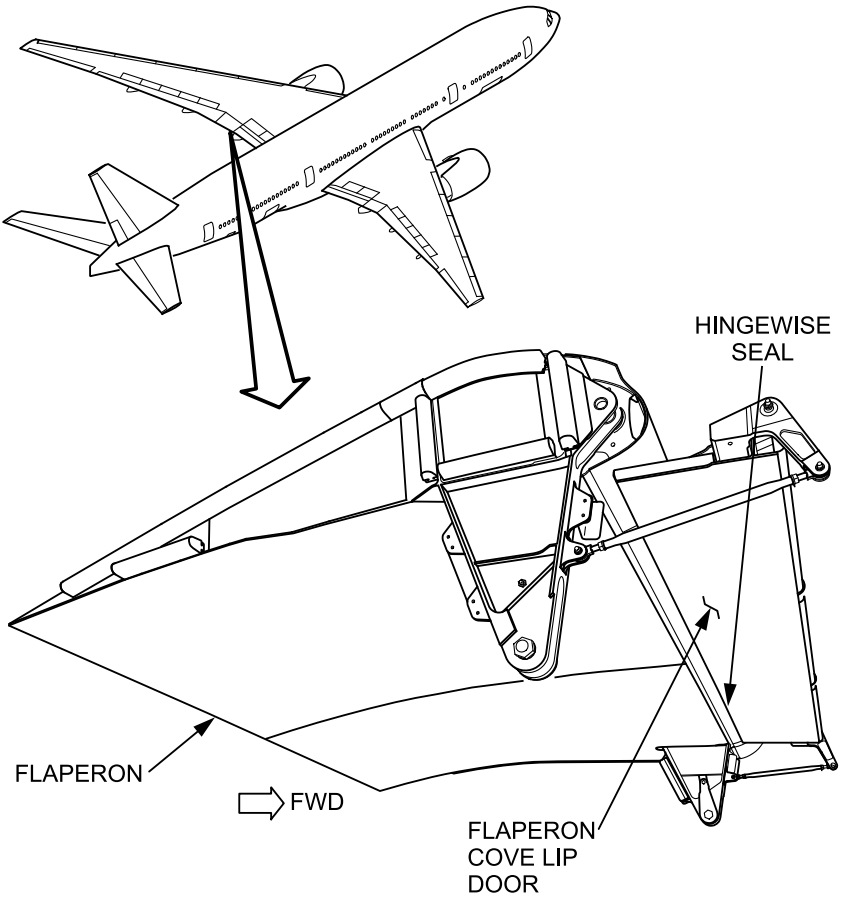
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-63-03 Flaperon Cove Lip Door Hingewise Seal

57-63-03-02 Flaperon Cove Lip Door Hingewise Seal -200ER

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

567 kg

ENROUTE CLIMB

862 kg

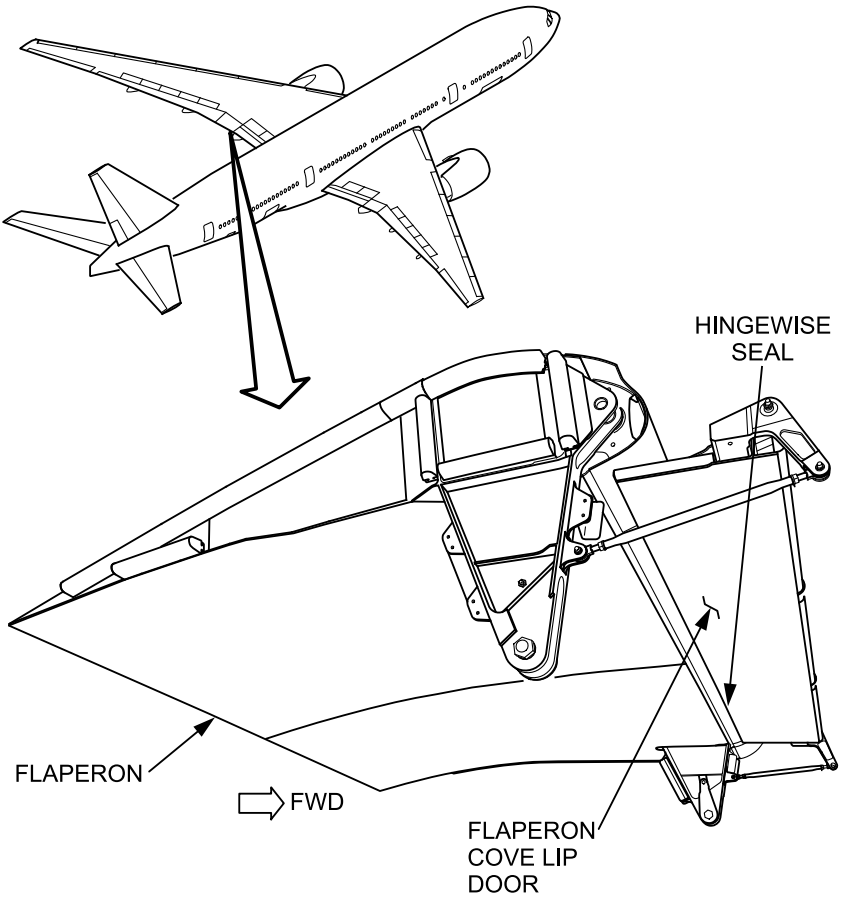
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-63-03 Flaperon Cove Lip Door Hingewise Seal

57-63-03-03 Flaperon Cove Lip Door Hingewise Seal -300

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

409 kg

ENROUTE CLIMB

817 kg

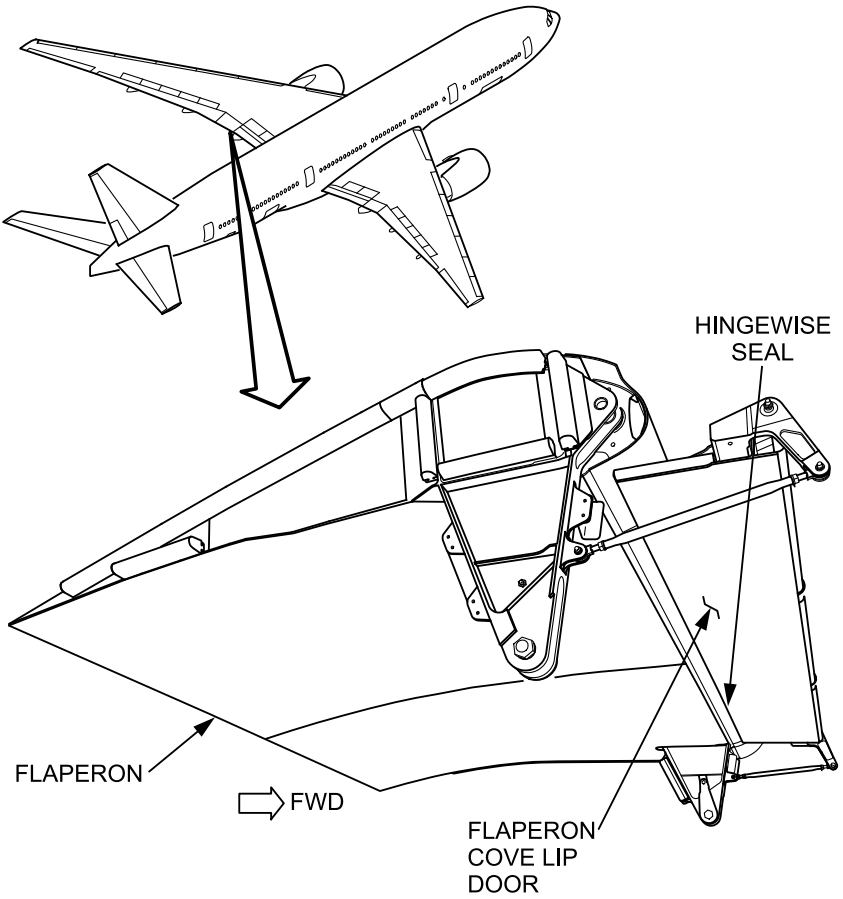
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-63-03 Flaperon Cove Lip Door Hingewise Seal

57-63-03-04 Flaperon Cove Lip Door Hingewise Seal -300ER

Interval	Installed	Required	Procedure
N/A	2	1	**(O) (MV)**

One may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

453 kg

ENROUTE CLIMB

908 kg

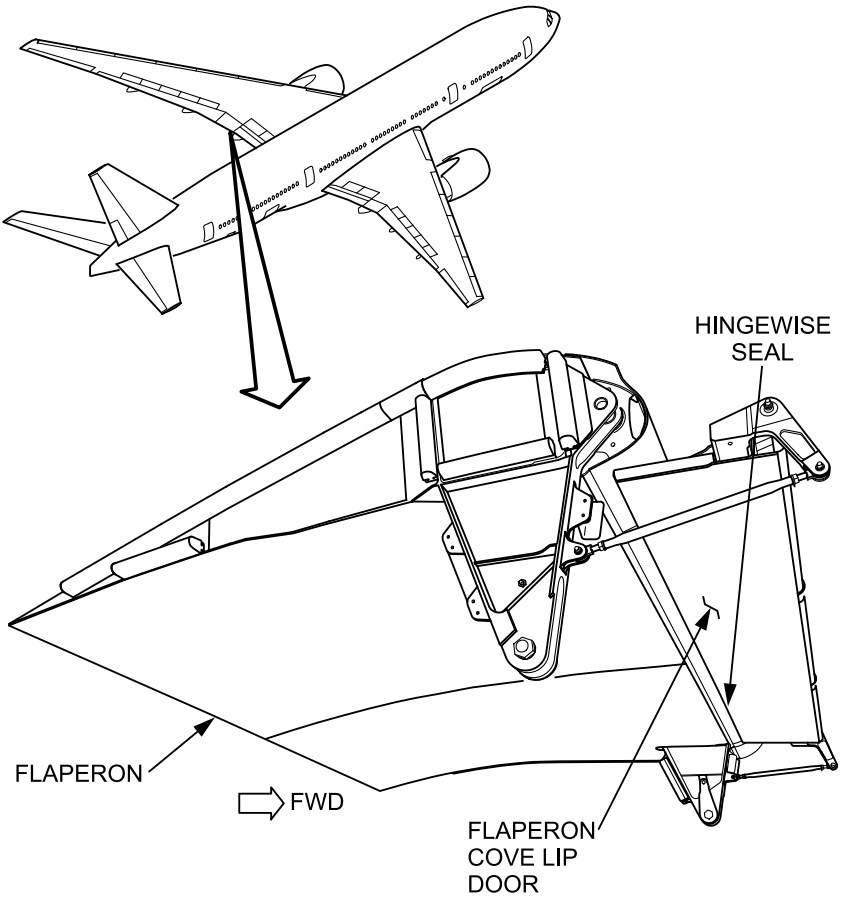
APPROACH

No penalty

LANDING

No penalty

LOCATION



57-63-04 Flaperon Outboard Seal

Interval	Installed	Required	Procedure
N/A	4	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

91 kg

ENROUTE CLIMB

159 kg

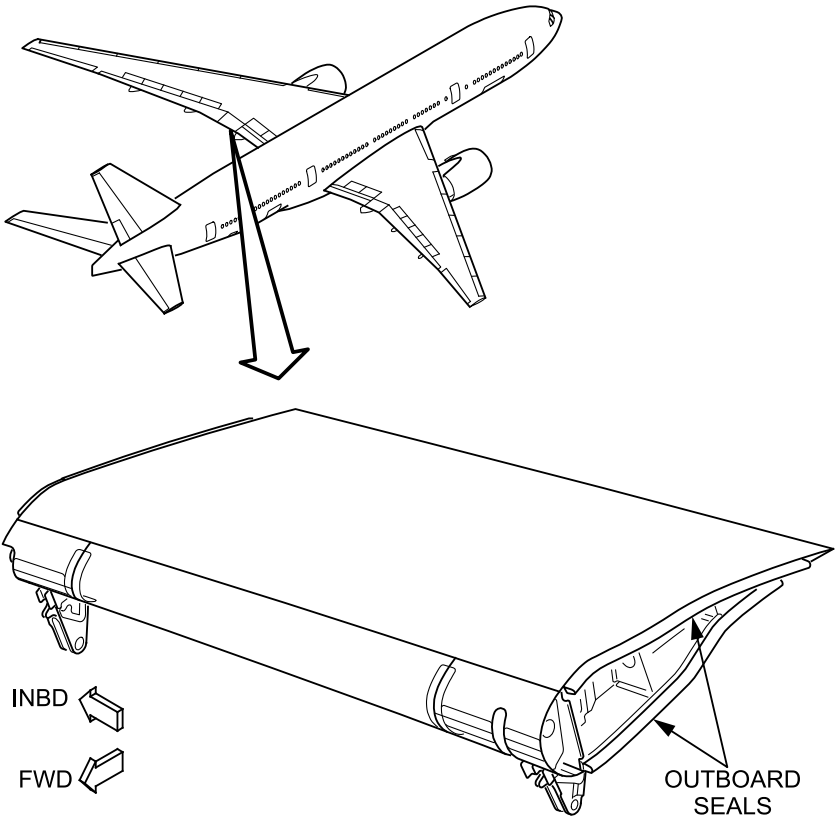
APPROACH

91 kg

LANDING

91 kg

LOCATION



FLAPERON

57-63-05 Aileron Streamwise Seal

Interval	Installed	Required	Procedure
N/A	8	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

91 kg

ENROUTE CLIMB

136 kg

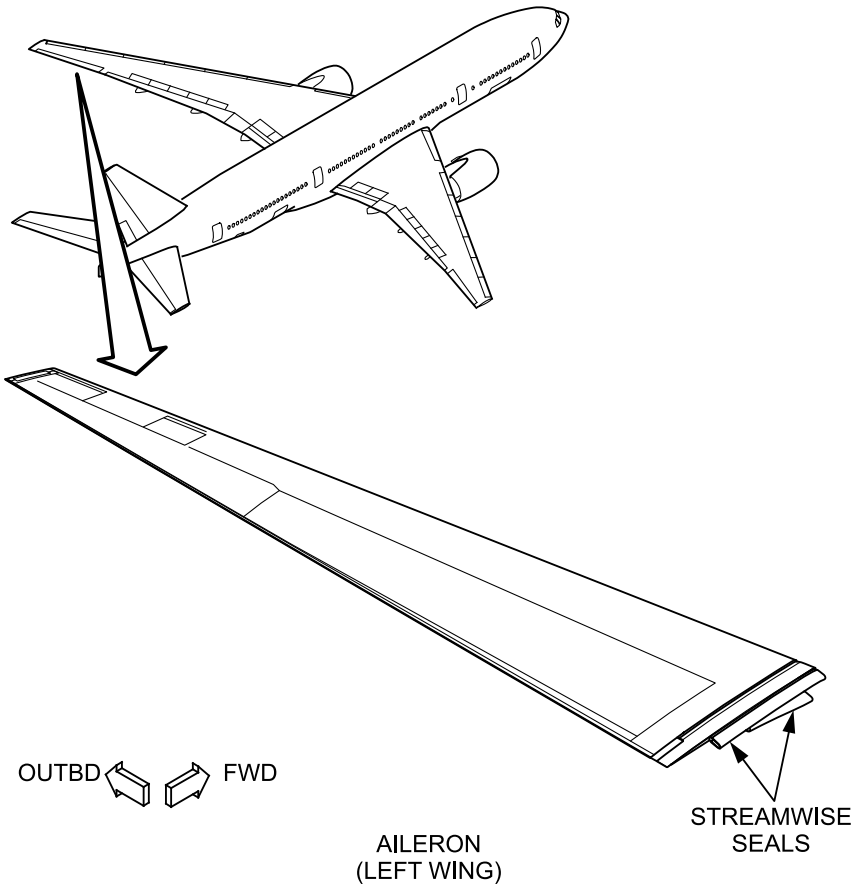
APPROACH

91 kg

LANDING

91 kg

LOCATION



57-63-06 Aileron Power Control Unit Fairing

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

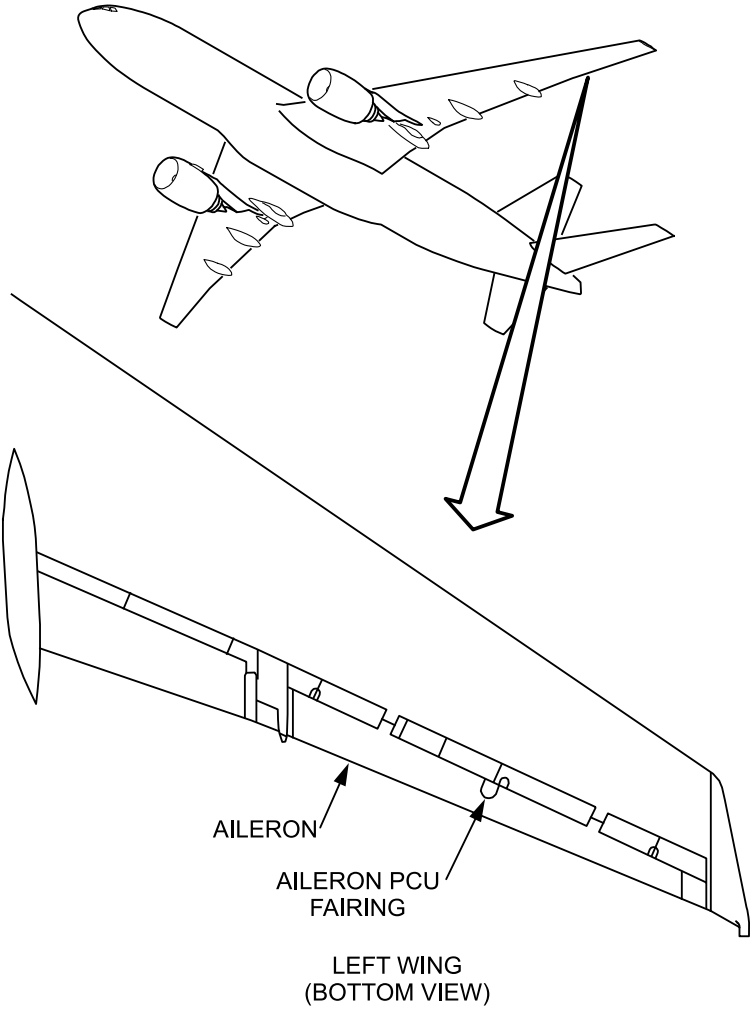
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



57-63-07 Aileron Mass Balance Seal

Interval	Installed	Required	Procedure
N/A	12	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

23 kg

ENROUTE CLIMB

46 kg

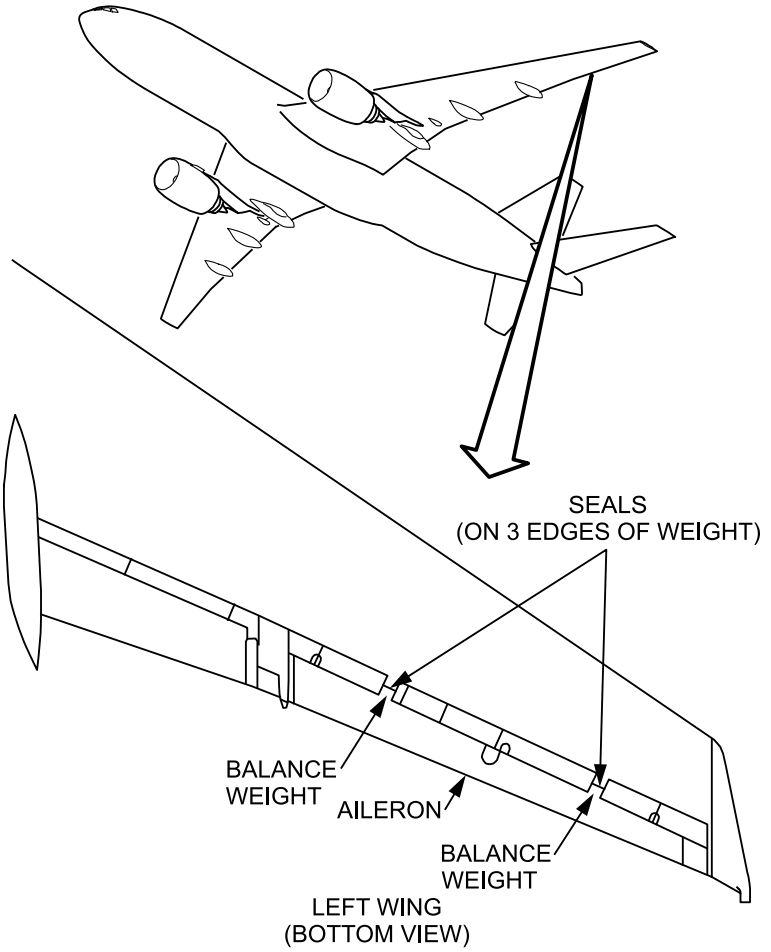
APPROACH

23 kg

LANDING

23 kg

LOCATION


SEALS
(ON 3 EDGES OF WEIGHT)
BALANCE
WEIGHT
AILERON
BALANCE
WEIGHT
LEFT WING
(BOTTOM VIEW)

57-71-01 Spoiler Streamwise Seal

Interval	Installed	Required	Procedure
N/A	28	See below	**(O) (MV)**

A maximum of two per wing (four total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

272 kg

ENROUTE CLIMB

454 kg

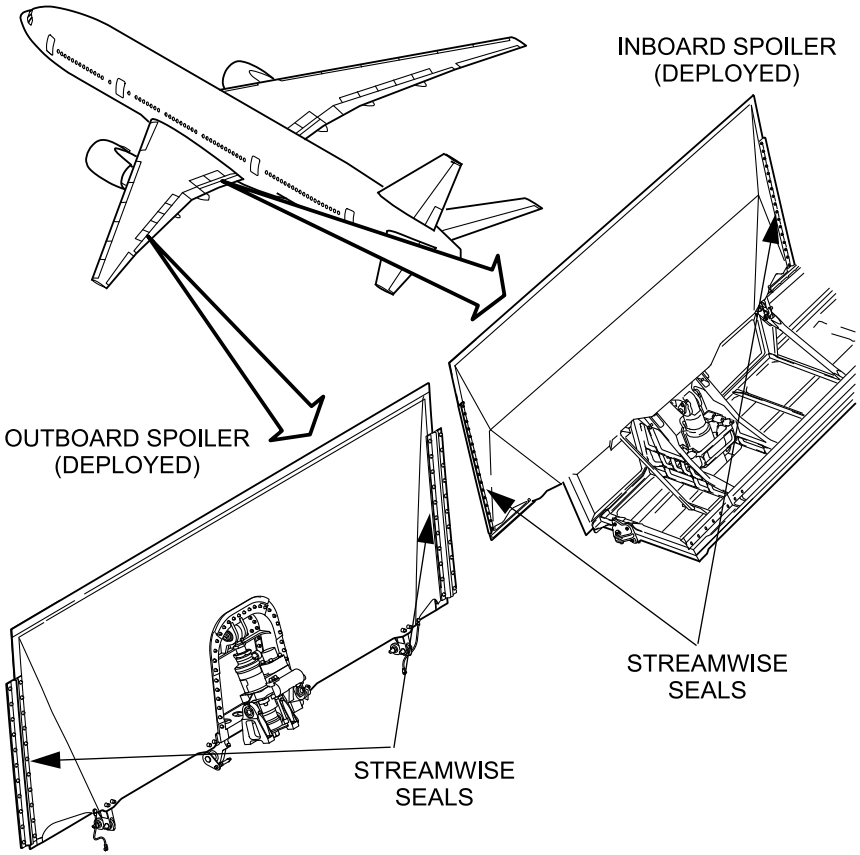
APPROACH

272 kg

LANDING

272 kg

LOCATION


INBOARD SPOILER
(DEPLOYED)
OUTBOARD SPOILER
(DEPLOYED)
STREAMWISE
SEALS
STREAMWISE
SEALS

57-71-02 Spoiler Leading Edge Seal

Interval	Installed	Required	Procedure
N/A	36	See below	**(O) (MV)**

One per wing (two total) may be missing.

a. Performance limited weights are reduced by the following for each foot of missing seal:

OPERATIONS (O)

TAKE-OFF

68 kg

ENROUTE CLIMB

113 kg

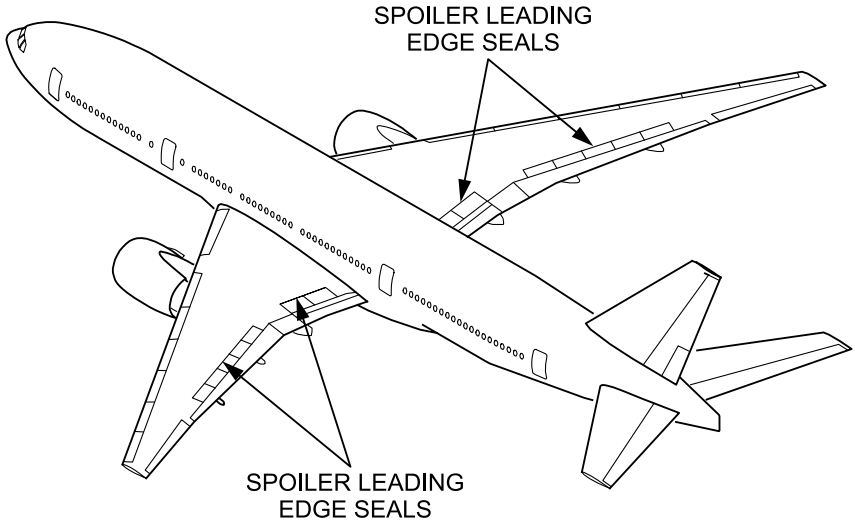
APPROACH

68 kg

LANDING

68 kg

LOCATION

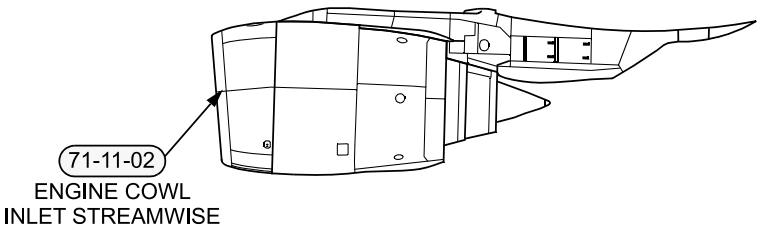


POWER PLANT

General Locations

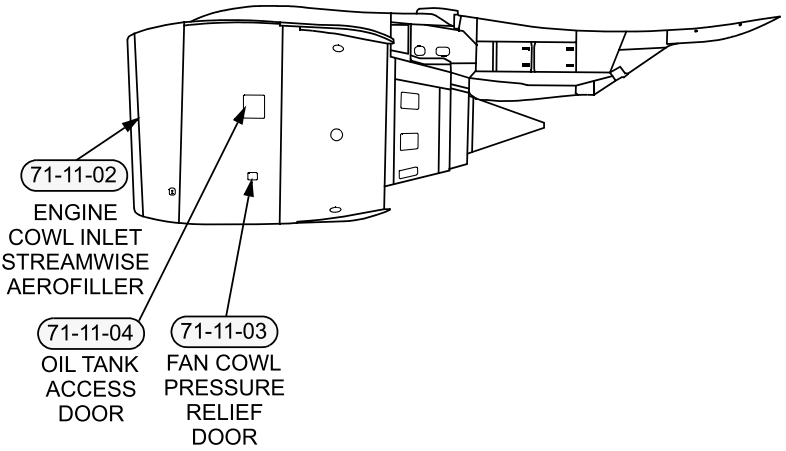
RR

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF



GE

TKK to TKR, TKU to TKZ



71-11-02 Engine Cowl Inlet Streamwise Aerofiller

Interval	Installed	Required	Procedure
N/A	2	See below	**N/A**

Any number may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

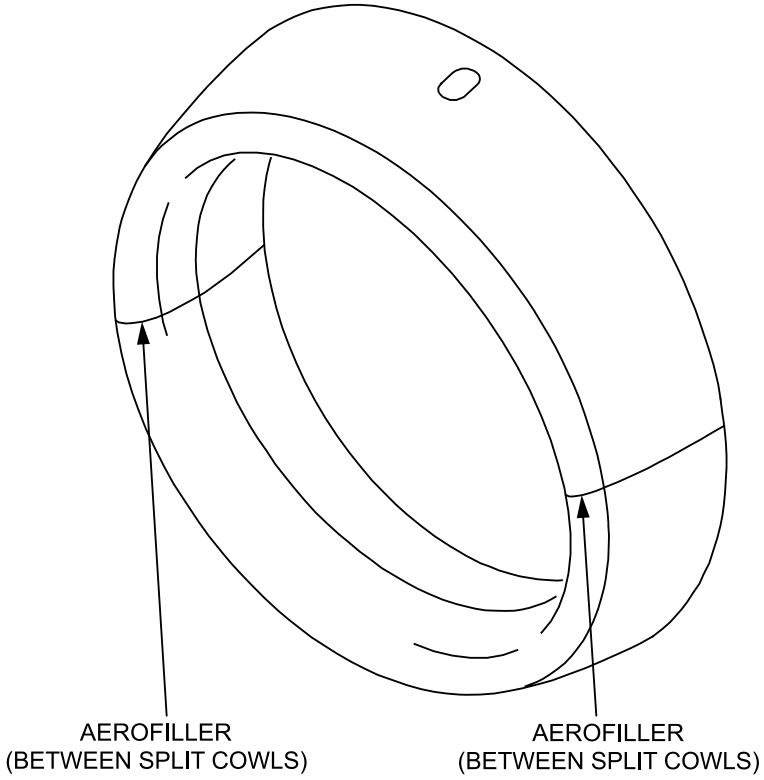
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



ENGINE INLET COWL

71-11-04 Oil Tank Access Door (GE)

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
N/A	2	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

91 kg

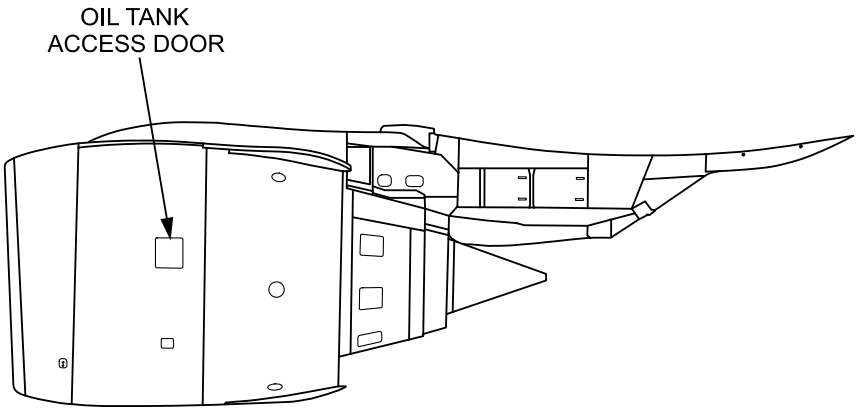
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



LEFT SIDE OF ENGINE

71-11-05 Fan Cowl Hoist Point Plugs

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
N/A	12	See below	**(O) (MV)**

Any number may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

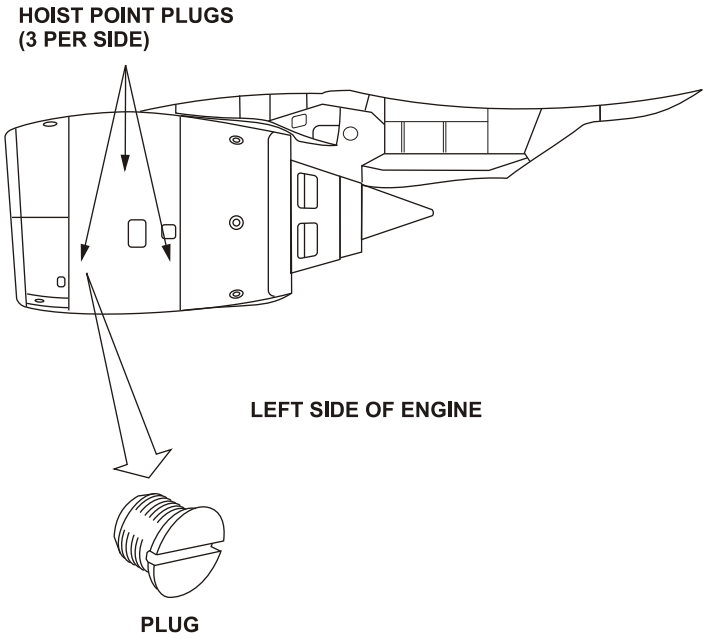
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION

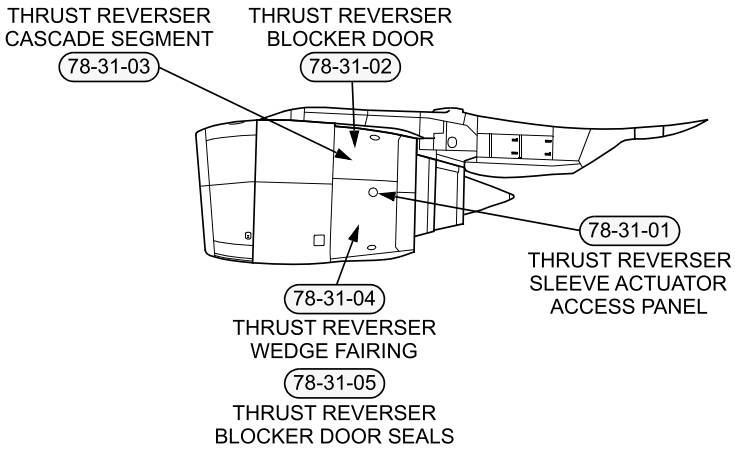


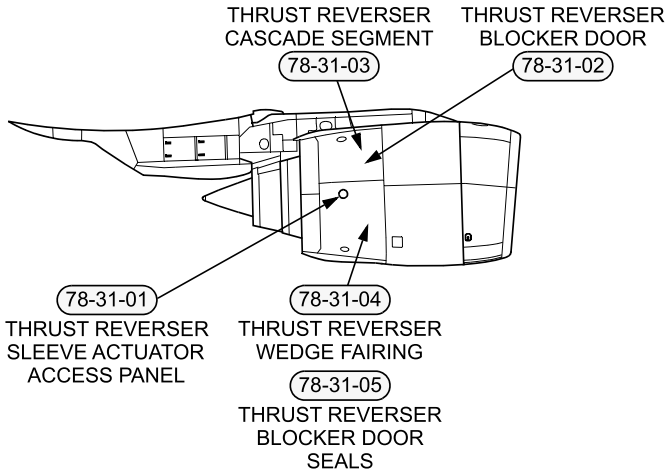
ENGINE EXHAUST

General Locations

RR

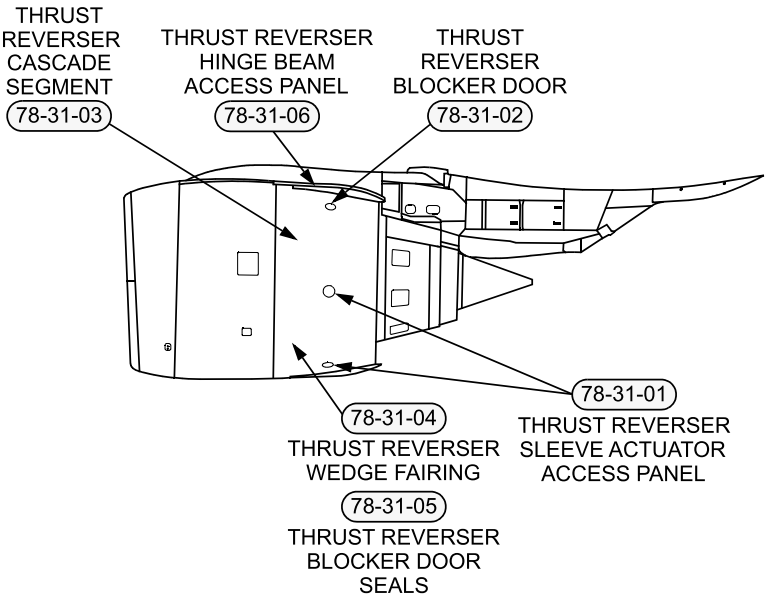
TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF





TKK to TKR, TKU to TKZ

GE



78-31-01 Thrust Reverser Sleeve Actuator Access Panel

78-31-01-01 Thrust Reverser Sleeve Actuator Access Panel

TJA,B,C,D,G,H,
TJR to TJW,
TKA to TKF

Interval	Installed	Required	Procedure
N/A	12	See below	**N/A**

The center actuator panel on each reverser sleeve (four total) may be missing.

a. The top and bottom actuator access panels on each reverser sleeve are not allowed to be missing.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

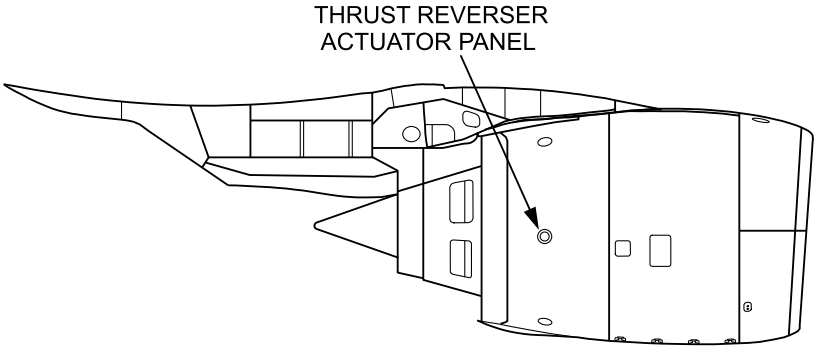
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



78-31-01 Thrust Reverser Sleeve Actuator Access Panel

TKK to TKR, TKU to TKZ **78-31-01-02 Thrust Reverser Sleeve Actuator Access Panel**

Interval	Installed	Required	Procedure
N/A	12	See below	**N/A**

The lower two actuator panels on each reverser sleeve (eight total) may be missing.

a. The top actuator access panel on each reverser sleeve is not allowed to be missing.

b. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

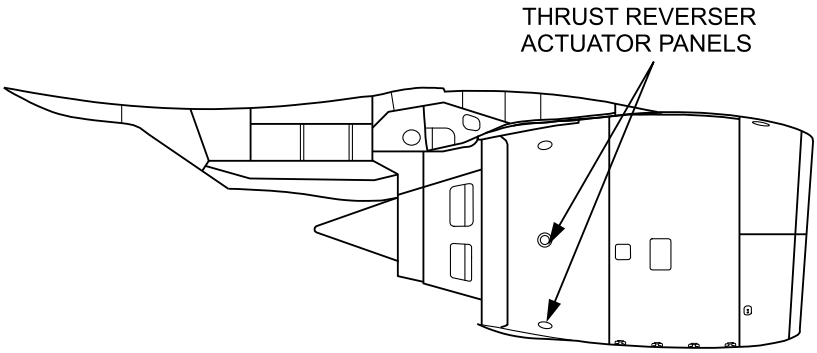
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



78-31-02 Thrust Reverser Blocker Door

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

78-31-02-01 Thrust Reverser Blocker Door

Interval	Installed	Required	Procedure
N/A	24	See below	**(O) (MV)**

One per nacelle half (four total) may be missing.

a. The drag links for missing blocker doors must be removed (AMM 78-31-15/401).

b. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

476 kg

ENROUTE CLIMB

272 kg

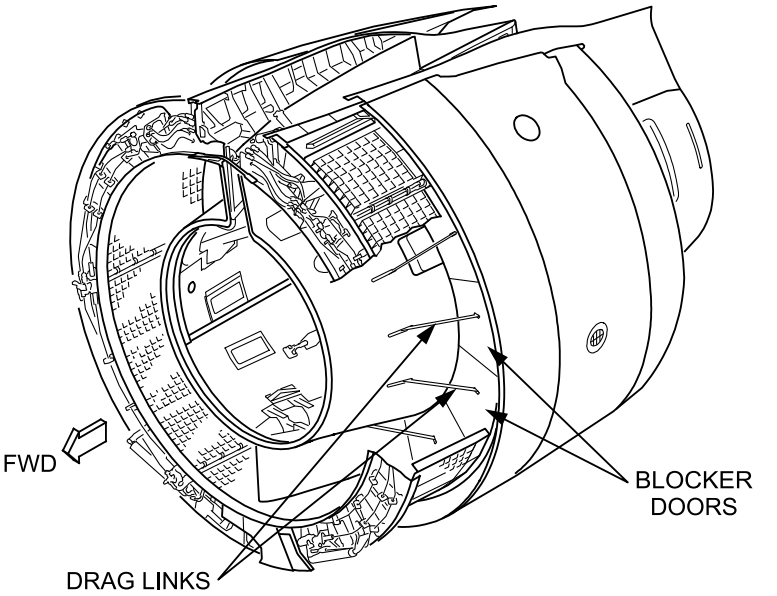
APPROACH

362 kg

LANDING

362 kg

LOCATION



THRUST REVERSER SLEEVE
(EXTENDED)

78-31-02 Thrust Reverser Blocker Door

78-31-02-02 Thrust Reverser Blocker Door

TKK to TKR, TKU to TKZ

Interval	Installed	Required	Procedure
N/A	32	See below	**(O) (MV)**

One per nacelle half (four total) may be missing.

a. The drag links for missing blocker doors must be removed (AMM 78-31-15/401).

b. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

749 kg

ENROUTE CLIMB

636 kg

APPROACH

704 kg

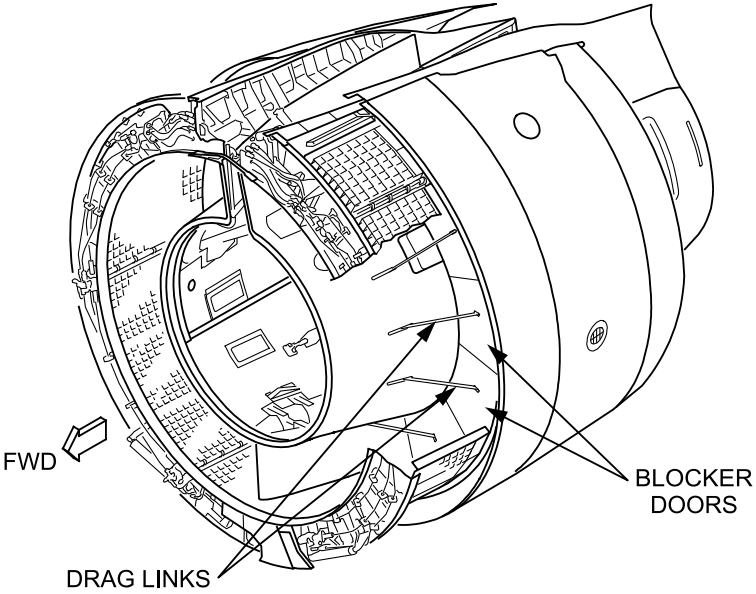
LANDING

704 kg

On Wet/Contaminated Runways for one or two missing doors, reduce performance limited weights by:

	Takeoff/Wet	Takeoff/ Contaminated	Landing/ Contaminated
One door	5,693 kg	11,907 kg	9,526 kg
Two doors	16,330 kg	34,972 kg	28,577 kg

LOCATION



THRUST REVERSER SLEEVE
(EXTENDED)

78-31-03 Thrust Reverser Cascade Segment

Interval	Installed	Required	Procedure
N/A	32	See below	**N/A**

A maximum of six segments on one engine may be missing.

a. Only one engine has segments missing.
b. Missing segments are not adjacent.
c. Top and bottom segments are not missing.
d. Associated thrust reverser is deactivated.
e. Dispatch using MEL item 78-31-01.
f. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

No penalty

ENROUTE CLIMB

No penalty

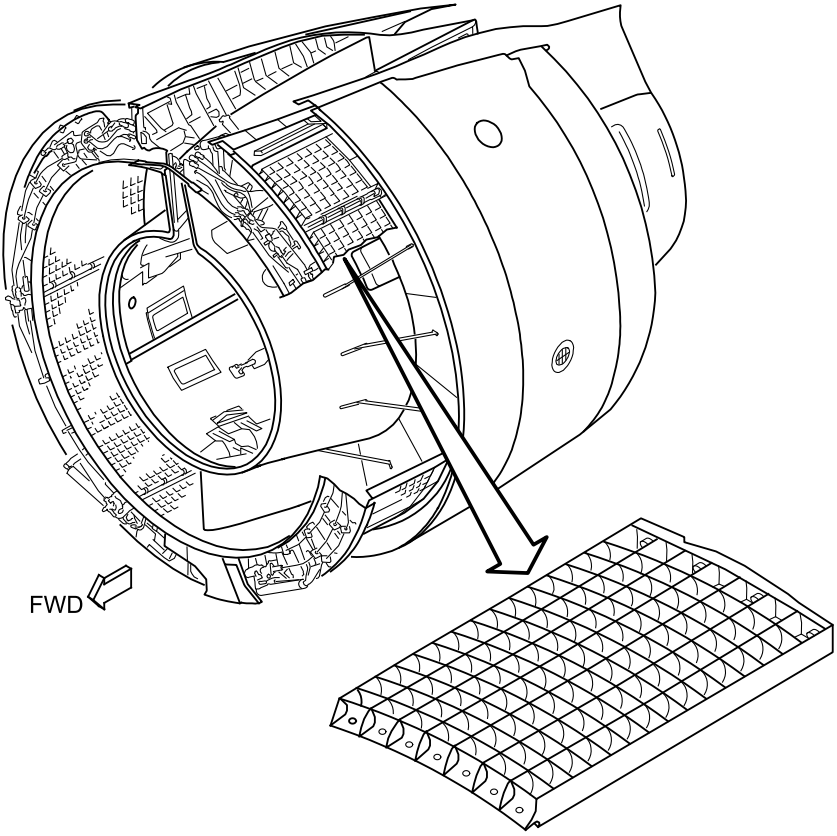
APPROACH

No penalty

LANDING

No penalty

LOCATION



THRUST REVERSER
CASCADE SEGMENT

78-31-04 Thrust Reverser Wedge Fairing

Interval	Installed	Required	Procedure
N/A	28	See below	**(O) (MV)**

A maximum of two per nacelle half (eight total) may be missing.

a. Performance limited weights are reduced by the following for each missing item:

OPERATIONS (O)

TAKE-OFF

114 kg

ENROUTE CLIMB

114 kg

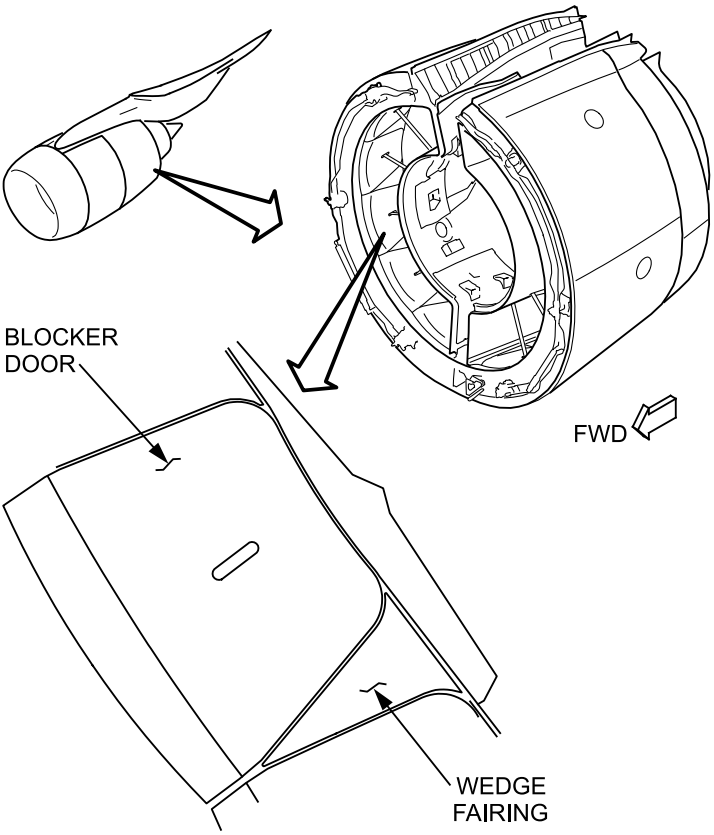
APPROACH

114 kg

LANDING

114 kg

LOCATION



78-31-05 Thrust Reverser Blocker Door Seals

TJA,B,C,D,G, H, TJR to TJW, TKA to TKF

78-31-05-01 Thrust Reverser Blocker Door Seals

Interval	Installed	Required	Procedure
N/A	24	17	**N/A**

A maximum of seven may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

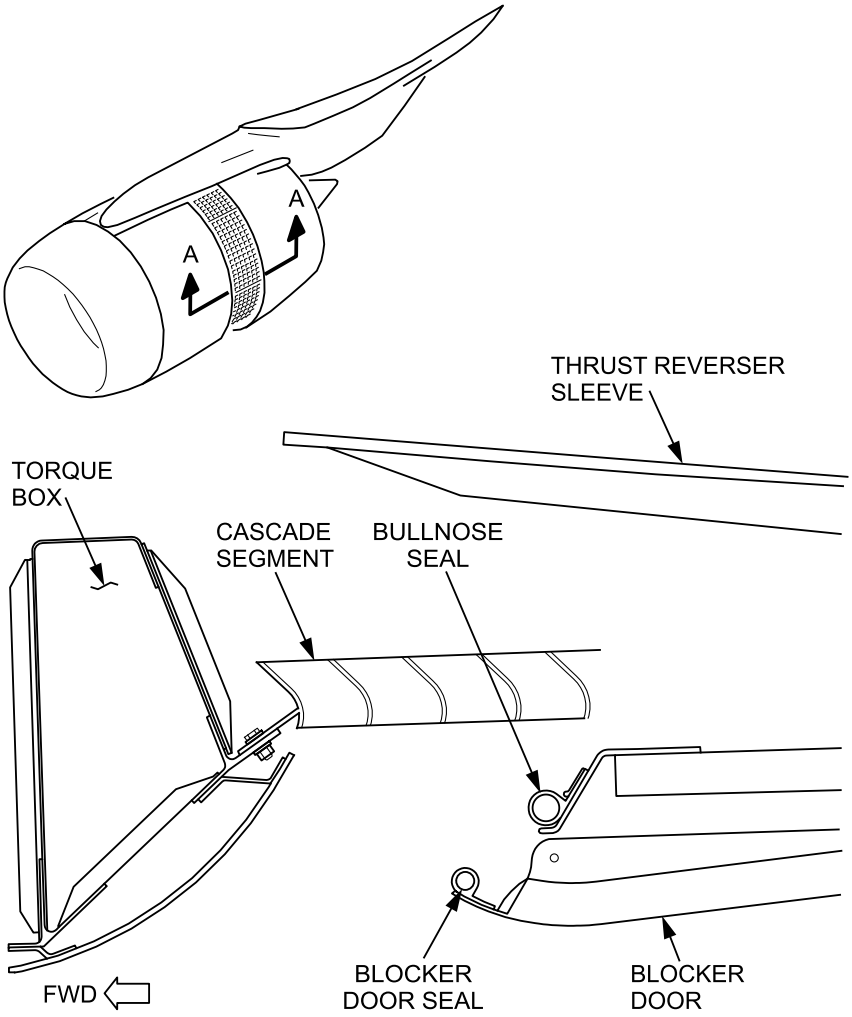
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



VIEW A-A

78-31-05 Thrust Reverser Blocker Door Seals

TKK to TKR, TKU to TKZ

78-31-05-02 Thrust Reverser Blocker Door Seals

Interval	Installed	Required	Procedure
N/A	32	25	**N/A**

A maximum of seven may be missing.

a. Performance limited weights are reduced by the following:

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

Negligible penalty

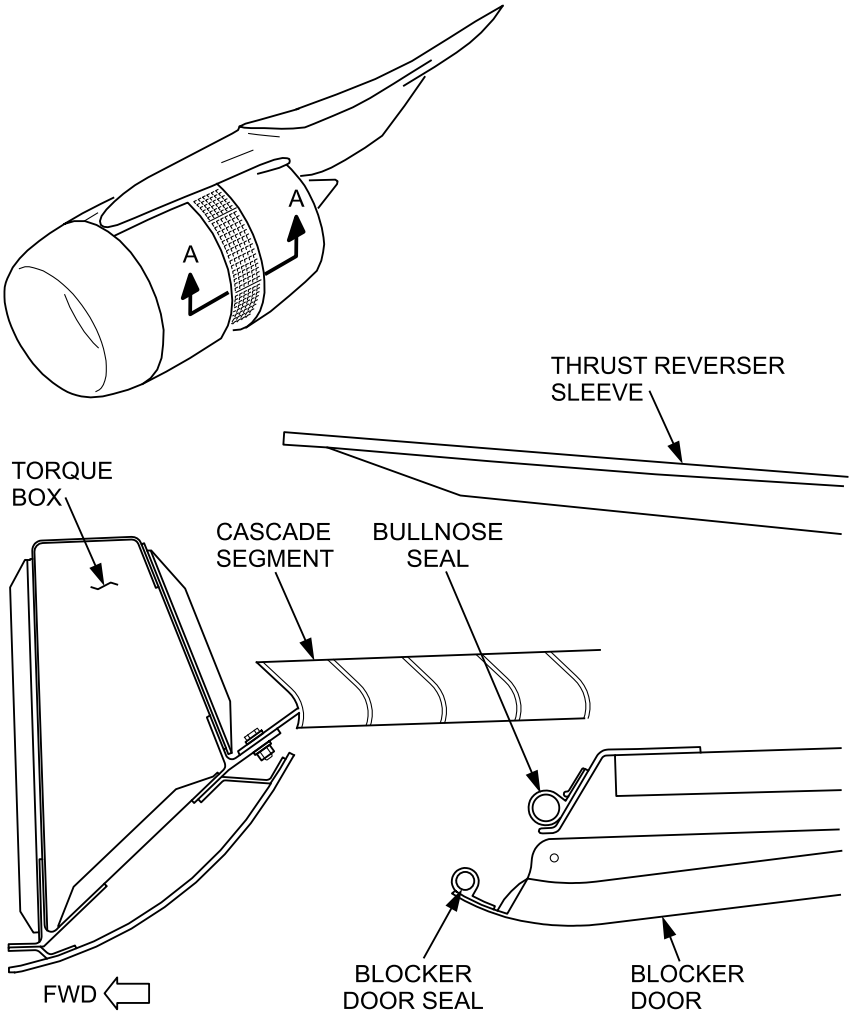
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



VIEW A-A

TKK to TKR, TKU to TKZ

78-31-06 Thrust Reverser Hinge Beam Forward Fairing Access Door

Interval	Installed	Required	Procedure
N/A	8	See below	**(O) (MV)**

Any Number of aft access doors from the forward fairing may be missing.

a. Performance limited weights are reduced by the following for each engine with missing panels:

Note: Forward access doors from the forward fairing and access doors from the Mid and Aft Fairing may not be missing.

OPERATIONS (O)

TAKE-OFF

Negligible penalty

ENROUTE CLIMB

91 kg

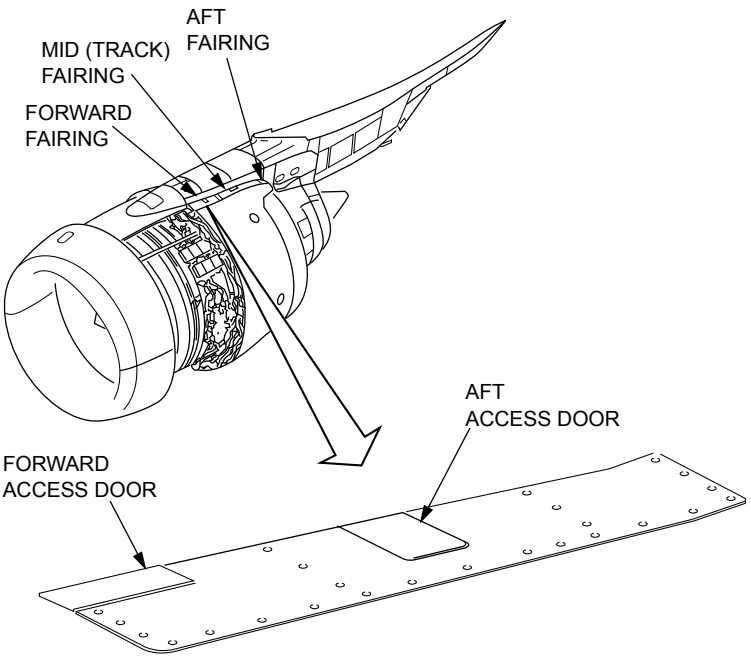
APPROACH

Negligible penalty

LANDING

Negligible penalty

LOCATION



THRUST REVERSER HINGE BEAM FORWARD FAIRING ACCESS DOORS
(GE90-100 SERIES ENGINES)