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Master Minimum Equipment List

Revision: 29b
Date: 07/20/2015

Boeing 747

B-747-400, B-747-400D, B-747-400F

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(BOEING B-747-400)

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Highlights of Change

EFFECTIVE ABOVE DATE, the Boeing 747-400 Master Minimum Equipment List has been revised. The changes in this revision were made to increase flexibility and improve consistency. All changes are reflected in the highlights of change listed below and are indicated by revision bars. For any change affecting an ATA section, all pages in the associated ATA section are dated for the current revision.

ATA 21 Air Conditioning

ITEM 51-2 Sub item 3) Added NASI PACK FCS-ECO MODE

ATA 28 FUEL

ITEM 21-4 Added Fueling Receptacle Caps

ITEM 21-5 Added Refuel Adapter Valve Handle Extensions/Stop Assemblies

ATA 38 Water/waste

ITEM 30-1 Revised description to comply with PL 104

ATA 52 Doors

ITEM 11-1 Revised proviso to comply with PL 001

Definitions

For the Master Minimum Equipment List, Definitions addendum, refer to the current FAA MMEL Policy Letter PL-25, Policy Concerning MMEL Definitions, as found on the Flight Standards Information Management System (FSIMS) website.

FSIMS - Publications - MMEL Policy Letters

Preamble

For the Master Minimum Equipment List, Preamble addendum as used for operations under 14 CFR Parts 121, 125, 129, and 135, refer to the current FAA Policy Letter PL-34, *MMEL and MEL Preamble*, as found on the Flight Standards Information Management System (FSIMS) website,.

FSIMS – Publications - MMEL and MEL Preamble

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-20-1 ***	A/C Ozone Converters				
1)	Passenger/Combi	C	-	0	As required by 14 CFR
2)	Freighter	D	-	0	
-24-1 ***	Gasper Fan	D	1	0	
-25-1	Recirculation Fans	C	4	0	(M)(O) May be inoperative provided: a) Fuel burn penalty is observed, and b) Associated fan is deactivated.
-25-2	Flight Deck Vent Fan (Freighter)				
1)	With Draw-Through Smoke Detection System	C	1	0	
2)	Without Draw-Through Smoke Detection System	C	1	0	May be inoperative provided Flight Deck Window Heater Systems (No. 1 and No. 2) operate normally.
-26-1 ***	Forward Cargo Air Conditioning (A/C) Overboard Valves	C	2	0	(M) May be inoperative provided one of the valves remains closed. NOTE: Forward Cargo A/C will be unavailable.
-26-2 ***	Forward Cargo A/C Ground Exhaust Fans	C	2	0	
-26-3 ***	Forward Cargo A/C Ground Exhaust Shutoff Valves	C	4	2	(M) Two may be inoperative provided one left and one right valve operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-26-4 ***	Forward Cargo A/C Overboard Check Valve	C	1	0	(M) May be inoperative provided forward Cargo Air Conditioning is not used.
		C	1	0	May be inoperative provided extended overwater flight is prohibited.
-26-5	ECS Misc Card	C	1	0	(M)(O) May be inoperative provided: a) Forward Overboard Valve is deactivated closed, b) Operation is limited to two Air Conditioning Packs, c) Procedures are established and used to verify the aft cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, d) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, e) For Passenger/Combi, one Lavatory/Galley fan is verified to operate normally, f) Aft Cargo Heat remains OFF, g) If installed, humidifiers are operated manually, h) If installed, Fwd Cargo Heat (electrical) is deactivated, and i) If installed, the main cabin exhaust valve(s) is deactivated closed. NOTE: Operator MELs must define Items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-26-5	ECS Misc Card (Cont'd)				
		C	1	0	(M)(O) May be inoperative provided: a) Forward Overboard Valve is deactivated open, b) Extended overwater flight is prohibited, c) Operation is limited to two Air Conditioning Packs, d) Procedures are established and used to verify the forward lower lobe cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, e) For Freighter, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, f) For Passenger/Combi, one Lavatory/Galley fan is verified to operate normally, g) Aft Cargo Heat remains OFF, h) If installed, humidifiers are operated manually, i) If installed, Fwd Cargo Heat (electrical) is deactivated, and j) If installed, the main cabin exhaust valve(s) is deactivated closed. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-26-6	Chiller Boost Fan	C	1	0	(M) May be inoperative deactivated.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-28-1 ***	Cargo A/C Card	C	1	0	(M)(O) May be inoperative provided: a) Valves A, B and Trim Shutoff are secured closed, b) Cabin shutoff valve is secured open, and c) Cabin A/C FLOW RATE remains OFF.
		C	1	0	(M) May be inoperative provided Pack 3 Flow Control and Shutoff Valve is secured closed.
-28-2 ***	Cargo A/C Shutoff Valves A and B	C	2	1	(M) One may be inoperative secured closed.
		C	2	0	(M)(O) May be inoperative provided: a) Valves are secured closed, b) Cargo A/C FLOW RATE Selector remains OFF, and c) Cabin shutoff valve is secured open.
		C	2	0	(M) May be inoperative provided Pack 3 Flow Control and Shutoff Valve is secured closed.
-28-3	Lower Lobe Cargo A/C Cabin Shutoff Valve(s)				
1) ***	Passenger/Combi	C	1	0	(M) May be inoperative provided valve is secured open.
		C	1	0	(M) May be inoperative provided Pack 3 Flow Control and Shutoff Valve is secured closed.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-28-3	Lower Lobe Cargo A/C Cabin Shutoff Valve(s) (Cont'd)				
2)	Freighter	C	2	1	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
		C	2	0	(M) May be inoperative provided: a) Lower lobe cargo A/C FLOW RATE remains in OFF or LOW position, and b) Associated valve is verified open.
		C	2	0	(M) May be inoperative provided associated valve is secured open.
-28-4	Lower Lobe Cargo A/C Trim Shutoff Valve(s)				
1) ***	Passenger/Combi	C	1	0	(M) May be inoperative secured closed.
2)	Freighter	C	2	0	(M) May be inoperative secured closed.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-28-5	Lower Lobe Cargo A/C Trim Modulating Valve(s)				
1) ***	Passenger/Combi	C	1	0	(M) May be inoperative provided lower lobe cargo A/C is operated in MAN mode and it is verified that operation in MAN mode is normal.
		C	1	0	(M) May be inoperative provided valve is secured closed.
		C	1	0	(M) May be inoperative provided Trim Shutoff Valve is secured closed.
		C	1	0	(M) May be inoperative provided lower lobe cargo A/C FLOW RATE remains OFF.
2)	Freighter	C	2	0	(M) May be inoperative provided associated valve is secured closed.
		C	2	0	(M) May be inoperative provided associated Lower Cargo Trim Shutoff Valve is secured closed.
-28-6	Aft Cargo A/C Flapper Valve(s)				
1) ***	Passenger/Combi	C	-	0	(M) May be inoperative closed.
2)	Freighter	C	2	0	(M) May be inoperative closed.
-28-7	Cargo/Combi Temperature Selector(s)				
1) ***	Passenger/Combi	C	-	0	
2)	Freighter	C	4	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-28-8	Lower Lobe Cargo A/C FLOW RATE Selector				
1) ***	Passenger/Combi	C	1	0	(M) May be inoperative deactivated OFF.
2)	Freighter	C	1	0	May be inoperative selected OFF.
-28-9	Lower Lobe Cargo A/C Duct Overheat Protective System				
1) ***	Passenger/Combi	C	1	0	(M) May be inoperative provided Cargo A/C Trim SOV is secured closed.
		C	1	0	(M) May be inoperative provided Cargo A/C Trim Modulating valve is secured closed.
2)	Freighter	C	2	0	(M) May be inoperative provided associated Cargo A/C Trim SOV is secured closed.
		C	2	0	(M) May be inoperative provided associated Cargo A/C Trim Modulating valve is secured closed.
-28-10 ***	Aft Cargo A/C Underfloor Heat Control Switch				
1)	Passenger/Combi (40 Degree F Switch)	C	1	0	May be inoperative provided AFT CARGO HT remains OFF during cargo conditioning operations.
2)	Freighter (32 Degree F Switch)	C	1	0	May be inoperative provided AFT CARGO HT remains OFF during cargo conditioning operations.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-28-11	Lower Lobe Cargo Vent Fans				
1) ***	Passenger/Combi	C	5	0	
2)	Freighter	C	4	0	
-28-12	Lower Lobe Cargo Flow Regulating Valves (Freighter)	C	2	0	(M) May be inoperative provided: a) Associated valve is secured closed, and b) Lower lobe cargo A/C FLOW RATE for the associated cargo compartment is not selected.
-28-13	Main Deck Shut Off Valves (Freighter)	C	5	4	(M) One may be inoperative provided: a) Associated valve is secured closed, and b) Lower lobe cargo A/C FLOW RATE is selected to either LOW or HIGH.
		C	5	4	(M) One may be inoperative provided: a) Associated valve is secured closed, and b) One pack remains OFF.
-28-14	ECS Freighter Card (Freighter)	C	1	0	(M)(O) May be inoperative provided: a) Main Deck Shut Off Valves are verified to operate normally before each flight, b) Pack Dump Valves are verified to operate normally before each flight, and c) Forward lower lobe cargo A/C FLOW RATE is not selected.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-31-1	Outflow Valves	C	2	1	(M)(O) One valve may be inoperative provided: a) A maximum of two packs are used throughout flight, b) Valve is deactivated closed, and c) Both automatic and manual controls operate normally on the remaining valve.
		C	2	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. c) Extended overwater flight is prohibited, and d) Crew rests, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-31-2	Automatic Cabin Pressure Controllers (A and B)	C	2	1	One may be inoperative provided both outflow valves operate normally in manual mode.
		C	2	1	(M) One may be inoperative provided: a) If one outflow valve is inoperative in the manual mode, it must be deactivated closed, with a maximum of two packs used throughout flight, and b) Cabin altitude backup sensor system (CPCS BACKUP SENS) operates normally.
		C	2	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. c) Extended overwater flight is prohibited, and d) Crew rests, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-31-3	Cabin Pressure Control Systems (Manual L and R)	C	2	1	(M)(O) One may be inoperative provided: a) Associated outflow valve is deactivated closed, and b) A maximum of two packs are used throughout flight.
		C	2	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. c) Extended overwater flight is prohibited, and d) Crew rests, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-31-4	Forward Overboard Valve (Lower 41 Section)				
1)	Models Without Auxiliary Fuel Tank Provisions	C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Procedures are established and used to verify aft lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and c) If installed, the main cabin exhaust valve(s) is deactivated closed. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-31-4	Forward Overboard Valve (Lower 41 Section) (Cont'd)				
1)	Models Without Auxiliary Fuel Tank Provisions (Cont'd)	C	1	0	(M)(O) May be inoperative deactivated open provided: a) Extended overwater flight is prohibited, b) Procedures are established and used to verify forward lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, c) For Freighter, procedures are established and used to verify main deck cargo compartment remains empty or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and d) If installed, the main cabin exhaust valve(s) is deactivated closed. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-31-4	Forward Overboard Valve (Lower 41 Section) (Cont'd)				
2)	Models With Auxiliary Fuel Tank Provisions	C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Procedures are established and used to verify forward lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) If installed, the main cabin exhaust valve(s) is deactivated closed. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		C	1	0	(M)(O) May be inoperative deactivated open provided: a) Extended overwater flight is prohibited, b) Procedures are established and used to verify aft lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and c) If installed, the main cabin exhaust valve(s) is deactivated closed. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-31-5 ***	Cabin Exhaust Valves	C	-	0	(M)(O) May be inoperative provided: a) Cabin exhaust valve(s) is deactivated closed, b) Forward overboard valve is deactivated closed, c) Procedures are established and used to verify aft lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and d) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		D	-	0	(M) May be inoperative provided: a) Cabin exhaust valve(s) is deactivated closed, and b) Forward overboard valve is verified to operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-32-1	Positive Pressure Relief Valves				Deleted Revision 26
		C	2	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, c) Extended overwater flight is prohibited, and d) Crew rest, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for Inclusion in the fly away kits and which materials can be used as ballast.
-32-2	Landing Altitude (LDG ALT) Switch	C	1	0	(O) May be inoperative in automatic mode.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-33-1	Cabin RATE Indication	C	1	0	(O) May be inoperative provided all remaining components and functions of the pressurization system operate normally.
		C	1	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, c) Extended overwater flight is prohibited, and d) Crew rest, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-33-2	Cabin Differential Pressure Indication	C	1	0	(O) May be inoperative provided: a) Cabin altitude indication operates normally, and b) A chart is provided for the flight crew to convert cabin altitude to differential pressure.
		C	1	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, c) Extended overwater flight is prohibited, and d) Crew rest, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-33-3	CAB ALT Indication	C	1	0	(O) May be inoperative provided: a) Cabin differential pressure indication operates normally, and b) A chart is provided for the flight crew to convert cabin differential pressure to cabin altitude.
		C	1	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, c) Extended overwater flight is prohibited, and d) Crew rest, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-33-4	OUTFLOW VALVES Position Indicators (Overhead Panel)	C	2	0	May be inoperative provided all remaining components and functions of the pressurization system operate normally.
		C	2	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, b) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, c) Extended overwater flight is prohibited, and d) Crew rest, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-33-5	Cabin Altitude Primary Sensors	C	2	1	One primary sensor may be inoperative provided the Cabin Altitude Backup Sensor (CPCS BACKUP SENS) system operates normally.
		C	2	0	(O) May be inoperative provided flight remains at or below 10,000 feet MSL.
-33-6	Cabin Altitude Backup Sensor (CPCS BACKUP SENS) System	C	1	0	May be inoperative provided both automatic cabin pressure controllers operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-40-1 ***	Side Cargo Door Heat	D	1	0	(M) May be inoperative deactivated.
-40-2 ***	Bulk Cargo Heating System (Electric)	C	1	0	(M) May be inoperative deactivated off.
-41-1 ***	Door 5 Overhead Crew Rest Environmental Control System				
1)	Temperature Control	C	1	0	(M) May be inoperative provided heater is deactivated.
2)	Ventilation	C	1	0	(M) May be inoperative provided: a) Heater is deactivated, and b) Supply/boost fan is deactivated.
3)	Temperature Indicator	D	1	0	
-41-2 ***	Zone F Crew Rest Environmental Control System				
1)	Temperature Control	C	1	0	(M) May be inoperative provided heater is deactivated.
2)	Ventilation	C	1	0	(M) May be inoperative provided: a) Heater is deactivated, and b) Supply/boost fan is deactivated.
3)	Temperature Indicator	D	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-41-3 ***	Zone B Crew Rest Environmental Control System				
1)	Temperature Control	C	1	0	(M) May be inoperative provided heater is deactivated.
2)	Ventilation	C	1	0	(M) May be inoperative provided: a) Heater is deactivated, and b) Supply/boost fan is deactivated.
3)	Temperature Indicator	D	1	0	
-41-4	Crew Rest Area Air Supply System (Freighter)	C	1	0	(M)(O) May be inoperative provided: a) Air supply valve remains in the closed position, and b) If CRA is occupied, entrance door and occupied, entrance door and occupied bunks privacy curtain(s) must remain open.
-41-5 ***	Door 4 Overhead Crew Rest Environmental Control System				
1)	Temperature Control	C	1	0	(M) May be inoperative provided heater is deactivated.
2)	Ventilation	C	1	0	(M) May be inoperative provided: a) Heater is deactivated, and b) Supply/boost fan is deactivated.
3)	Temperature Indicator	D	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-42-1	Flight Crew Auxiliary Heat System (Foot and Shoulder)	C	1	0	May be inoperative OFF.
-42-2 ***	Flight Deck Crew Rest Area Heat Control System	C	1	0	(M) May be inoperative deactivated.
1)	Temperature Control Functions (LOW/MED/HIGH)	C	-	0	
2)	Crew Rest Bunk Heaters	C	-	0	(M) May be inoperative deactivated.
3)	Crew Rest Seat Heater	C	-	0	(M) May be inoperative deactivated.
-42-3 ***	Aft Upper Deck Crew Rest Area Heat Control System	C	1	0	(M) May be inoperative deactivated.
1)	Temperature Control Functions (LOW/MED/HIGH)	C	-	0	
2)	Crew Rest Bunk Heaters	C	-	0	(M) May be inoperative deactivated.
3)	Crew Rest Seat Heater	C	-	0	(M) May be inoperative deactivated.
-43-1 ***	Forward Cargo Compartment Heating System (Electric)	D	1	0	(M) May be inoperative OFF.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-44-1	Aft Cargo Heating System				
1)	Two Valve Installation	C	1	0	(M) May be inoperative provided one valve (control or shutoff) is secured closed.
2) ***	Three Valve Installation	C	1	0	(M) May be inoperative provided override valve is secured closed.
		C	1	0	(M) May be inoperative provided bulk and container control valves are secured closed.
-44-2	Aft Cargo TEMP Light	C	1	0	
-44-3	Aft Cargo Heat 90 Degree F Overheat Switch(es)	C	-	0	May be inoperative provided AFT CARGO HT remains OFF.
-44-4	Aft Cargo Compartment Heat Temperature Control (Sidewall Switches)				
1)	Two Valve Installation	C	2	1	(M) One may be inoperative provided operative switch is selected.
		C	2	0	Both switches may be inoperative provided AFT CARGO HT remains OFF.
2) ***	Three Valve Installation	C	4	2	(M) One switch per compartment may be inoperative provided operative switches are selected and used.
		C	4	0	All switches may be inoperative provided AFT CARGO HT remains OFF.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-51-1	Packs				
1)	Passenger/Combi or Freighter without Draw-Through Smoke Detection System	C	3	2	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
2)	Freighter with Draw-Through Smoke Detection System	C	3	2	(M)(O) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE remains OFF, c) Associated Pack Flow Control & Shutoff Valve is secured closed, d) For pack 1 inoperative, Forward Lower Lobe Smoke Detectors are considered inoperative and deactivated, and e) For pack 1 inoperative, procedures are established and used to verify forward lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULD's), or fly away kits. NOTE Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-51-2	Pack Flow Control and Shutoff Valves	C	3	2	(M) One may be inoperative closed provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
1)	Normal Flow Mode	C	3	0	(M) May be inoperative provided: a) Valve(s) is verified to close when the associated pack is selected OFF, and b) For Passenger/Combi, lower lobe cargo A/C FLOW RATE (if installed) remains LO or OFF when associated pack is Pack 3.
2)	High Flow Mode				
a)	Models Without Auxiliary Fuel Tank Provisions	C	3	2	May be inoperative provided two packs are operating.
		C	3	0	(O) May be inoperative provided: a) Three packs are operating, and b) Procedures are established and used to verify forward and aft lower lobe cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs) or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-51-2	Pack Flow Control and Shutoff Valves (Cont'd)				
2)	High Flow Mode (Cont'd)				
b)	Models With Auxiliary Fuel Tank Provisions	C	3	2	May be inoperative provided two packs are operating.
		C	3	0	(O) May be inoperative provided: a) Three packs are operating, and b) Procedures are established and used to verify aft lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
3)	NASI PACK FCS-ECO MODE (STC ST02646CH)	C	1	0	(M) May be inoperative deactivated off.
-51-3	Pack HI FLOW Switch	C	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-51-4	Air Cycle Machines (ACM)				
1)	Passenger/Combi	C	3	2	(M)(O) One may be inoperative provided: a) Associated turbine bypass valve is secured open (full heat), b) Associated pack overheat protective system operates normally, c) PACK RST Switch operates normally, and d) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF.
		C	3	2	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
a)	With NASI FCS PACK (STC ST02646CH)	C	2	1	(M)(O) One may be inoperative provided: a) Associated turbine bypass valve is secured open (full heat), b) Associated pack overheat protective system operates normally, c) PACK RST Switch operates normally, and d) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF.
		C	2	1	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					(Continued)
-51-4	Air Cycle Machines (ACM) (Cont'd)				
2)	Freighter	C	3	2	(M)(O) One may be inoperative provided: a) Associated turbine bypass valve is secured open (full heat), b) Associated pack overheat protective system operates normally, c) PACK RST Switch operates normally, d) Lower lobe cargo A/C FLOW RATE is not selected for the associated pack's zone, and e) Lower lobe cargo A/C FLOW RATE is not selected HIGH.
		C	3	2	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
a)	With NASI FCS PACK (STC ST02646CH)	C	2	1	(M)(O) One may be inoperative provided: a) Associated turbine bypass valve is secured open (full heat), b) Associated pack overheat protective system operates normally, c) PACK RST Switch operates normally, d) Lower lobe cargo A/C FLOW RATE is not selected for the associated pack's zone, and e) Lower lobe cargo A/C FLOW RATE is not selected HIGH.
		C	2	1	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
-51-5	ACM Turbine Bypass Valves				
1)	Passenger/Combi	C	3	2	(M)(O) One may be inoperative provided: a) Inoperative valve is secured open, b) Associated pack overheat protective system operates normally, c) PACK RST Switch operates normally, and d) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF.
		C	3	2	(M) One may be inoperative provided: a) Associated pack is selected off, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff valve is secured closed.
a)	With NASI FCS PACK (STC ST02646CH)	C	2	1	(M)(O) One may be inoperative provided: a) Inoperative valve is secured open, b) Associated pack overheat protective system operates normally, c) PACK RST Switch operates normally, and d) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF.
		C	2	1	(M) One may be inoperative provided: a) Associated pack is selected off, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff valve is secured closed.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					(Continued)
-51-5	ACM Turbine Bypass Valves (Cont'd)				
2)	Freighter	C	3	2	(M) (O) One may be inoperative provided: a) Inoperative valve is secured open, b) Associated pack overheat protective system operates normally, c) PACT RST Switch operates normally, d) Lower lobe cargo A/C FLOW RATE is not selected for the associated pack's zone, and e) Lower lobe cargo A/C FLOW RATE is not selected HIGH.
		C	3	2	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
a)	With NASI FCS PACK (STC ST02646CH)	C	2	1	(M) (O) One may be inoperative provided: a) Inoperative valve is secured open, b) Associated pack overheat protective system operates normally, c) PACT RST Switch operates normally, d) Lower lobe cargo A/C FLOW RATE is not selected for the associated pack's zone, and e) Lower lobe cargo A/C FLOW RATE is not selected HIGH.
		C	2	1	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-51-6	Water Separators				
1)	Passenger/Combi/	C	3	0	(M) May be operated with coalescer bag removed.
2)	Freighter	C	3	2	(M)(O) May be inoperative with coalescer bag removed provided associated pack is not used.
a)	With NASI PACK FCS (STC ST02646CH)	C	2	1	(M)(O) May be inoperative with coalescer bag removed provided associated pack is not used.
-51-7	Pack Overheat Switches	C	3	0	(M) May be inoperative provided: a) Both pack Temperature Sensors for associated pack operate normally, b) Both pack Temperature Control channels for associated Pack operate normally, and c) Boeing Service Bulletin 747-21-2337 or production equivalent is incorporated.
		C	3	2	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
-51-8	Compressor Overheat Switches	C	3	2	One may be inoperative provided: a) Associated pack remains OFF, and b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF.
		C	3	0	(M) May be inoperative provided: a) Compressor Temperature Bulb for associated pack operates normally, b) Pack Coolant (Inlet/Exit doors) system operates normally, and c) Compressor Overheat Switch(es) is deactivated.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-51-9	Compressor Temperature Bulbs	C	3	0	(M) May be inoperative provided the compressor overheat discharge switches operate normally.
		C	3	2	(M) One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE (if installed) remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
-51-10	Pack Dump Valves (Freighter)	C	2	1	One may be inoperative provided: a) Associated pack is selected OFF, b) Lower lobe cargo A/C FLOW RATE remains OFF, and c) Associated Pack Flow Control and Shutoff Valve is secured closed.
-52-1	Pack SYS FAULT Light	C	1	0	
-58-1	Equipment Cooling Control System				
1)	NORM mode	C	1	0	(O) May be inoperative provided: a) STBY mode is used, and b) For ground operation above 105 degrees F OAT (41 degrees C) at least one pack is operating.
-58-2	Equipment Cooling Inboard Exhaust Valve	C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Equipment cooling system is operated with one fan deactivated, b) Remaining fan operates normally, and

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					c) For operation on the ground above 85 degrees F OAT (29 degrees C) at least one pack is operating. NOTE: Forward cargo heating will not be available. (Continued)
-58-2	Equipment Cooling Inboard Exhaust Valve (Cont'd)				
1)	Passenger/Combi	C	1	0	(M)(O) May be inoperative deactivated open provided: a) Equipment cooling system is operated in the NORMAL or STBY mode, b) Both equipment cooling fans operate normally, and c) Procedures are established and used to verify forward lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
2)	Freighter	C	1	0	(M)(O) May be inoperative deactivated open provided: a) Equipment cooling system is operated in the NORMAL or STBY mode, b) Both equipment cooling fans operate normally, and c) Procedures are established and used to verify main deck and forward lower lobe cargo compartments remain empty, or contain only empty cargo handling

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-58-3	Equipment Cooling Bypass Valve				
1)	Passenger/Combi	C	1	0	(M) May be inoperative deactivated closed provided lower lobe cargo A/C FLOW RATE (if installed) remains OFF.
2)	Freighter	C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) Lower lobe cargo A/C FLOW RATE remains OFF. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) Forward lower lobe cargo Temp Selector remains above 50 degrees F (10 degrees C).

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-58-4	Equipment Cooling Exhaust Fan	C	1	0	(M)(O) May be inoperative deactivated provided: a) Supply fan operates normally, and b) For operation on the ground above 85 degrees F OAT (29 degrees C) at least one pack is operating. NOTE: Forward cargo heating will not be available.
-58-5	Equipment Cooling Inboard Supply Valve	C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Equipment cooling system is operated with one fan deactivated, b) Remaining fan operates normally, and c) For operation on the ground above 85 degrees F OAT (29 degrees C) at least one pack is operating. NOTE: Forward cargo heating will not be available.
-58-6	Equipment Cooling Supply Fan	C	1	0	(M)(O) May be inoperative deactivated provided: a) Exhaust fan operates normally, and b) For operation on the ground above 85 degrees F OAT (29 degrees C) at least one pack is operating. NOTE: Forward cargo heating will not be available.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-58-7	Equipment Cooling Ground Exhaust Valve	C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Equipment cooling is operated in the STBY mode, b) Both fans operate normally, and c) For operation on the ground above 105 degrees F OAT (41 degrees C) at least one pack is operating.
		C	1	0	(M)(O) May be inoperative deactivated closed provided: a) Equipment cooling system is operated with one fan deactivated, b) Remaining fan operates normally, and c) For operation on the ground above 85 degrees F OAT (29 degrees C) at least one pack is operating. NOTE: Forward cargo heating will not be available with one fan deactivated.
-58-8	Galley/Lavatory Fans	C	2	1	
-58-9	Aft EE Fans (Freighter)	C	2	1	
-58-10	Three-Way Valve (Freighter)	C	1	0	(M)(O) May be inoperative deactivated in the Port A closed position provided procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		B	1	0	(M)(O) May be inoperative deactivated in the Port C closed position provided two packs are operated continuously while valve is deactivated.
-61-1	Zone Temperature Control System (Passenger/Combi)	C	1	0	(M)(O) Control to individual zones may be inoperative provided associated zone trim air modulation valve(s) is secured in appropriate position unless it is verified that associated zone operation in MAN mode is normal.
		C	1	0	(M)(O) May be inoperative provided: a) Master Trim Air Valve remains closed, b) Cargo A/C is operated in MAN mode, or FLOW RATE selector (if installed) remains OFF, and c) Boeing Service Bulletins 747-21-2337 and 747-21-2338 or production equivalent are incorporated.
		C	1	0	(M)(O) May be inoperative provided: a) Master Trim Air Valve remains closed, b) Cargo A/C is operated in MAN mode, or FLOW RATE selector (if installed) remains OFF, and c) PASS TEMP is selected to ALTN position.
-61-2	Cabin Temperature Selection System				
1)	Passenger/Combi (In Passenger Cabin)	C	1	0	
2)	Freighter (In Upper Deck)	C	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-61-3	Master Trim Air Valve				
1)	Passenger/Combi	C	1	0	(M) May be inoperative closed provided Boeing Service Bulletins 747-21-2337 and 747-21-2338 or production equivalent are incorporated.
		C	1	0	(M) May be inoperative closed provided PASS TEMP is selected to ALTN position.
2)	Freighter	C	1	0	(M) May be inoperative closed.
3)	Pressure Regulating Function	C	1	0	(M) May be inoperative or deactivated provided shutoff feature operates normally.
-61-4	Zone Trim Air Modulation Valves (Passenger/Combi)	C	7	0	(M)(O) May be inoperative provided: a) Associated valve(s) is secured in the appropriate position, and b) If affected, FLT DECK Zone and/or COMBI TEMP Zone Trim Air Modulation Valves are secured in the appropriate position unless it can be verified that operation in MAN mode is normal.
		C	7	0	(M) May be inoperative provided: a) Master Trim Air Valve remains closed, and b) Boeing Service Bulletins 747-21-2337 and 747-21-2338 or production equivalent are incorporated.
		C	7	0	(M)(O) May be inoperative provided: a) Master Trim Air Valve remains closed, and

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
					b) PASS TEMP is selected to ALTN position.
-61-5 ***	ALTN Control Mode (Zone A/Upper Deck)	C	-	0	May be inoperative provided ALTN is not selected.
-61-6	ZONE RST Switch				
1)	Passenger/Combi	C	1	0	May be inoperative provided passenger temperature control system operates normally in AUTO or ALTN.
2)	Freighter	C	1	0	May be inoperative provided zone temperature control system operates normally.
-61-7	Duct Overheat Protective Systems (Passenger and Crew System) (Passenger/Combi)	C	7	0	(M)(O) May be inoperative provided: a) Associated zone duct overheat switch(es) is deactivated, and b) Associated zone trim air modulation valve is secured closed.
		C	7	0	M)(O) May be inoperative provided: a) Master trim air valve remains closed, and b) PASS TEMP is selected to ALTN position.
		C	7	0	(M) May be inoperative provided: a) Associated zone trim air modulation valve operates normally, b) Associated zone duct temperature sensor operates normally, c) Associated zone duct overheat switch(es) is deactivated, and d) Boeing Service Bulletins 747-21-2337 and 747-21-2338, or production equivalent are incorporated.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-61-8	Zone Temperature Control System (Freighter)	C	1	0	(M)(O) Control to individual zones may be inoperative provided: a) Associated zone trim air modulation valve(s) is secured in an appropriate position unless it is verified that associated zone operation in MAN mode is normal, and b) If affected, lower lobe cargo A/C is operated in MAN mode, or A/C FLOW RATE selector remains OFF.
		C	1	0	(M)(O) May be inoperative provided: a) TRIM AIR Switch remains OFF, b) Lower lobe cargo A/C is operated in MAN mode, or A/C FLOW RATE selector remains OFF, and c) Lower lobe cargo A/C Cabin Shutoff Valves are verified open.
-61-9	Zone Trim Air Modulation Valves (Freighter)	C	6	0	(M)(O) May be inoperative provided associated valve(s) is secured in an appropriate position unless it is verified that associated zone operation in MAN mode is normal.
		C	6	0	(O) May be inoperative provided TRIM AIR Switch remains OFF.
-61-10	Zone Duct Overheat Protective Systems (Freighter)	C	5	0	(M)(O) May be inoperative provided: a) Associated zone duct overheat switch(es) is deactivated, and b) Associated zone trim air modulation valve is secured closed.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
		C	5	0	(O) May be inoperative provided TRIM AIR Switch remains OFF. (Continued)
-61-10	Zone Duct Overheat Protective Systems (Freighter) (Cont'd)	C	5	0	(M) May be inoperative provided: a) Associated zone trim air valve operates normally, b) Associated zone duct temperature sensor operates normally, and c) Associated zone duct overheat switch(es) is deactivated.
-61-11	Zone Duct Temperature Sensors	C	7	6	
-61-12	Zone Temperature Sensors				
1)	Passenger/Combi Configurations or Freighter with Draw-Through Smoke Detection System	C	-	-	One may be inoperative.
2)	Freighter without Draw-Through Smoke Detection System	C	9	8	
-61-13	Flight Deck Flow Regulating Valve (Freighter)	C	1	0	(M) May be inoperative secured open.
-62-1	Pack Temperature Control Systems	C	2	1	One pack temperature controller (A or B) may be inoperative for each operating pack.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
21 AIR CONDITIONING					
-62-2	Pack Coolant (Inlet/Exit Doors) Systems	C	3	2	(M)(O) One may be inoperative for an inoperative pack provided associated exit door has greater open area than inlet door.
		C	3	2	(M)(O) One may be inoperative for an inoperative pack provided associated inlet and exit doors are secured closed.
1)	Inlet Doors	C	3	2	(M)(O) One inlet door may be inoperative secured 60% open to full open provided: a) Remaining two packs operate normally, b) Associated turbine bypass valve operates normally, and c) Associated exit door is secured at least 50% open.
2)	Exit Doors	C	3	0	(M)(O) Any exit doors may be inoperative secured at least 50% open.
-65-1	Compartment Temperature Indications (EICAS)	C	-	0	
-65-2	Zone SYS FAULT Light	C	1	0	
-71-1 ***	Humidifiers	D	-	0	(M) May be inoperative provided the associated water supply is shutoff.
-71-2 ***	Disinsection System	D	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
22 AUTO FLIGHT					
-10-1	Autopilot Systems	C	3	2	(M)(O) One may be inoperative provided: a) Associated FCC SERVO circuit breaker is opened and collared, b) Autopilot Flight Director System is verified not in a single source configuration before each departure, and c) Approach minimums do not require its use.
		C	3	1	(M)(O) Two may be inoperative provided: a) At least two FCC power circuit breakers remain closed, b) Associated FCC SERVO circuit breakers are opened and collared, c) Autopilot Flight Director System is verified not in a single source configuration before each departure, and d) Approach minimums do not require their use.
		B	3	0	(M)(O) May be inoperative provided: a) At least one FCC power circuit breaker remains closed, b) All three FCC SERVO circuit breakers are opened and collared, c) Approach minimums do not require their use, d) Enroute operations do not require their use, and e) Flight crewmembers are limited to 5 flight hours per scheduled flight day.
-11-1	Control Wheel Autopilot Disengage Switches	C	2	1	One may be inoperative provided: a) No autopilot is used below 1,500 feet AGL, and b) Approach minimums do not require autopilot use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
22 AUTO FLIGHT					
-11-2	Mode Control Panel Windows				
1)	Airspeed (IAS/MACH)	C	1	0	May be inoperative provided selected airspeed indications on both PFDs operate normally.
2)	Heading (HDG)	C	1	0	May be inoperative provided selected heading indications on both PFDs operate normally.
3)	Vertical Speed (VERT SPD)	C	1	0	May be inoperative provided selected vertical speed indications on both PFDs operate normally.
4)	Altitude (ALT)	C	1	0	May be inoperative provided selected altitude indications on both PFDs operate normally.
-11-3	Mode Control Panel Selectors				
1)	VERT SPD Selector (DN & UP)	C	1	0	
2)	BANK LIMIT Selector (AUTO, 5, 10, 15, 20, 25)	C	1	0	
3)	Selector Push Functions				
a)	ALT	C	1	0	
b)	HDG SEL	C	1	0	
c)	IAS/MACH	C	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
22 AUTO FLIGHT					
-11-4	Mode Control Panel Switches				
1)	A/P Engage Switches (L CMD, C CMD, R CMD)	C	3	1	(M)(O) May be inoperative provided associated autopilot system is considered inoperative.
		B	3	0	(M)(O) May be inoperative provided all three autopilot systems are considered inoperative.
2)	A/T Arm Switch (A/T ARM)	C	1	0	May be inoperative ON provided autothrottle disconnect switches operate normally.
		C	1	0	May be inoperative OFF provided autothrottle systems are considered inoperative.
3)	A/T Speed Mode Engage Switch (SPD)	C	1	0	May be inoperative provided approach minimums do not require autothrottle use.
4)	Flight Director Switches (F/D)	C	2	0	May be inoperative OFF provided flight director displays are considered inoperative.
5)	IAS/MACH SEL (Reference) Switch	C	1	0	May be inoperative provided IAS is displayed in associated window.
6)	APP Switch	C	1	0	May be inoperative provided approach minimums do not require use of autopilot or flight director.
7)	LOC Engage Switch	C	1	0	May be inoperative provided localizer only approach is not used.
8)	THR, L NAV, V NAV, FL CH, HDG HOLD, V/S, and ALT HOLD Switches	C	7	0	May be inoperative provided procedures do not require their use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
22 AUTO FLIGHT					
-11-5	Mode Control Panel Switch Lights				
1)	Autopilot Engage Switch Lights (CMD)	C	3	2	
2)	Mode Selector Switch Lights	C	-	0	
-13-1	Automatic Landing System (Autoland)	C	1	0	May be inoperative provided approach minimums do not require its use.
1)	Triple Channel Autoland (LAND 3)	C	1	0	May be inoperative provided approach minimums do not require its use.
2)	Automatic Rollout Control	C	1	0	May be inoperative provided approach minimums do not require its use.
-21-1	Yaw Dampers	C	2	1	(M) One may be inoperative provided: a) Operation of remaining yaw damper is verified to operate normally, and b) Associated yaw damper switch remains OFF.
-21-2	Yaw Damper INOP Lights	C	2	0	
-21-3	Modal (Gust) Suppression System				Deleted, Revision 9.
-31-1	Autothrottle System	C	1	0	May be inoperative provided approach minimums do not require its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
22 AUTO FLIGHT					
-31-2	Autothrottle Disconnect Switches	C	2	1	One may be inoperative provided AUTOTHROTTLE ARM switch operates normally.
		C	2	0	May be inoperative provided: a) Autothrottles are not armed, and b) Approach minimums do not require use of autothrottles.
-31-3	Takeoff/Go-Around (TO/GA) Switches	C	2	1	One may be inoperative provided: a) No autopilot is used below 1,500 feet AGL, and b) Approach minimums do not require autopilot use.
		C	2	0	May be inoperative provided: a) Thrust levers are operated manually for takeoff and go-around, and b) Autopilot and Flight Director are not used below 500 feet AGL or MDA whichever is higher. NOTE: Flight Director go-around and Windshear guidance are not available with both TO/GA switches inoperative.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-11-1	High Frequency (HF) Communication System	D	-	-	Any in excess of those required by 14 CFR may be inoperative.
		C	-	1	(O) May be inoperative while conducting operations that require two LRCS provided: a) SATCOM Voice or data link operates normally, b) Alternate procedures are established and used, c) SATCOM Voice coverage is available over the intended route of flight, and d) If SATCOM Voice is to be used over the intended route of flight, SATCOM Voice short codes (INMARSAT) or direct dial commercial numbers (IRIDIUM) must be available. If not available, prior coordination with the appropriate ATS (FIR) facilities is required. NOTE: SATCOM Voice is to be used only as a backup to normal HF communications.
-12-1	VHF Communications Systems	D	-	-	Any in excess of those required by 14 CFR may be inoperative provided it is not powered by the Emergency DC Bus, Battery Bus, Battery Direct Bus or the Transfer Bus and not required for emergency procedures.
-22-1 ***	UHF Communications Systems	D	-	-	Any in excess of those required by 14 CFR may be inoperative provided it is not powered by the Emergency DC Bus, Battery Bus, Battery Direct Bus or the Transfer Bus and not required for emergency procedures.
-24-1	Radio Communications Panels	C	3	2	Center or right panel may be inoperative provided associated switch remains OFF.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-25-1 ***	Satellite Communication (SATCOM) Systems	C	-	0	(O) Except for ER operations, may be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.
1)	SATCOM Voice Systems	C	-	0	(O) Except for ER operations, may be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.
2)	Low Gain Antenna Sub-system	C	-	0	(O) Except for ER operations, may be inoperative provided alternate procedures are established and used.
-27-1 ***	ACARS System	C	1	0	(O) May be inoperative provided alternate procedures are established and used. NOTE: Any mode which functions normally may be used.
		D	1	0	May be inoperative provided procedures do not require its use.
1)	Dual ACARS Management Units (MUs)	D	2	1	
2)	Automatic Dependent Surveillance – Contract (ADS-C)	C	1	0	(O) May be inoperative provided alternate procedures are established and used.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-28-1	Selective Call (SELCAL) System	C	1	0	(O) May be inoperative provided alternate procedures are established and used.
		D	1	0	May be inoperative provided procedures do not require its use.
1)	Channels	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
		D	1	0	May be inoperative provided procedures do not require its use.
-31-1	Passenger Address System				
1)	Passenger/Combi	B	1	0	(O) May be inoperative provided: a) Alternate, normal and emergency procedures and/or operating restrictions are established and used, and b) Flight attendant alerting system (audio and visual) operates normally. NOTE: Any station function(s) that operates normally may be used.
a)	Passenger Address Controller Circuits	C	2	1	(O) One circuit may be inoperative provided the operative controller circuit is selected.
b)	Lavatory Speakers	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
c)	Cabin Speakers	C	-	-	(M) No passenger seat, cabin attendant seat or crew rest area bunk may be occupied from which the Passenger Address system is not audible and intelligible or that seat must be blocked and placarded DO NOT OCCUPY.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-31-1	Passenger Address System (Cont'd)				
1)	Passenger/Combi (Cont'd)				
d)	Direct Access Function	C	2	1	(O) One may be inoperative provided: a) Alternate, normal and emergency procedures and/or operating restrictions are established and used, and b) Handset 4P function at affected station operates normally.
2)	Freighter (Personnel Address System)	C	1	0	(O) May be inoperative provided: a) Audio/visual alerting operates normally. and b) Alternate procedures are established and used. NOTE: Any mode which functions normally may be used.
		D	1	0	May be inoperative provided procedures do not require its use.
a)	Lavatory Speakers	C	1	0	(O) May be inoperative provided alternate procedures are established and used.
-31-2 ***	Prerecorded Passenger Announcement System	C	1	0	(O) May be inoperative provided alternate procedures are established and used.
		D	1	0	May be inoperative provided procedures do not require its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-31-3	Freighter (Personnel Address System)				(Deleted. Incorporated into Item 23-31-1 Rev. 21)
-32-1 ***	In-Flight Entertainment System (IFES)	D	1	0	(M) May be inoperative provided IFES is deactivated.
1)	IFES Equipment Cooling Smoke Detector	D	2	0	(M) May be inoperative provided IFES is deactivated.
2)	IFES Equipment Cooling Flow Detector	C	2	0	(M) May be inoperative provided associated IFES smoke detector is verified to operate normally before each departure.
		D	2	0	(M) May be inoperative provided IFES is deactivated.
3)	Flight Deck VCC COMPT POWER Panel	D	1	0	(O) May be inoperative provided: a) VCC controls operate normally, and b) Alternate procedures are established and used.
-34-1	ACESS Central Management Unit (CMU)/Passenger Service Controller (PSC)	C	1	0	(M) May be inoperative provided: a) Cabin lighting is sufficient for cabin attendants to perform their duties, b) Passenger sign system operates normally, and c) One Cabin Interphone Controller Circuit operates normally.
		C	1	0	(M) May be inoperative provided: a) Cabin lighting is sufficient for cabin attendants to perform their duties, b) Passenger sign system operates normally, and c) One Passenger Address Controller Circuit operates normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-41-1	Service Interphone System				
1)	Nose Gear Jack	C	1	0	(O) Service interphone flight deck to ground/ground to flight deck function may be inoperative provided: a) Alternate procedures are established and used, and b) Nose gear/forward fuselage flight interphone jack operates normally.
		B	1	0	(O) May be inoperative provided alternate procedures are established and used.
2)	Other Than Nose Gear Jack	D	-	0	May be inoperative provided procedures do not require its use.
-42-1	Crewmember Interphone Systems				
1)	Passenger/Combi				
a)	Flight Deck to Cabin, Cabin to Flight Deck Functions	B	-	-	(O) 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 function operates normally at one door for each pair of exit doors, and c) Alternate communications procedures between affected flight attendant's station(s) and flight deck are established and used. NOTE: Any station function(s) that operate normally may be used. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-42-1	Crewmember Interphone Systems (Cont'd)				
1)	Passenger/Combi (Cont'd)				
b)	Cabin to Cabin Function	B	-	-	(O) 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 function operates normally at one door for each pair of exit doors, and, c) Alternate communications procedures between affected flight attendants stations are established and used. NOTE: Any station function(s) that operates normally may be used.
c)	Flight Deck to Ground/Ground to Flight Deck Function	C	1	0	(O) Flight interphone flight deck to ground/ground to flight deck function may be inoperative provided: a) Alternate procedures are established and used, and b) Nose gear/forward fuselage service interphone jack operates normally.
d)	Cabin Interphone Controller Circuits	C	2	1	(O) One circuit may be inoperative provided the operative controller circuit is selected.
e) ***	Flight Deck/Cabin to Crew Rest, Crew Rest to Flight Deck/Cabin	B	-	0	(O) May be inoperative provided alternate procedures are established and used. NOTE: Any interphone function that operates normally may be used.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-42-1	Crewmember Interphone Systems (Cont'd)				
2)	Freighter				
a)	Flight Deck to Cabin/Crew Rest. Cabin/Crew Rest to Flight Deck Function	C	1	0	(O) May be inoperative provided alternate procedures are established and used. NOTE: Any interphone function that operates normally may be used.
		D	1	0	May be inoperative provided procedures do not require its use.
b)	Flight Deck to Ground/Ground to Flight Deck Function	C	1	0	(O) Flight interphone flight deck to ground/ ground to flight deck function may be inoperative provided: a) Alternate procedures are established and used, and b) Nose gear/forward fuselage service interphone jack operates normally.
-42-2 ***	Flight Deck Hand Microphones	C	-	-	May be inoperative or missing provided associated boom microphone operates normally.
		D	-	0	May be inoperative or missing provided procedures do not require their use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-42-3	Handset System				
1)	Passenger/Combi				
a)	Flight Deck	C	-	0	(O) May be inoperative provided: a) Flight deck to cabin communication operates normally, and b) Alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.
b)	Main Cabin	B	-	-	(O) May be inoperative provided: a) Fifty percent of cabin handsets operate normally, b) One handset must operate normally at each pair of main exit doors, and c) Alternate communications procedures between the affected flight attendant's station(s) are established and used. NOTE 1: An operative handset at an inoperative flight attendant seat shall not be counted to satisfy the fifty percent requirement. NOTE 2: Any handset(s) function(s) that operate normally may be used.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-42-3	Handset System (Cont'd)				
1)	Passenger/Combi (Cont'd)				
c)	Upper Deck Cabin	B	2	1	
		B	2	0	May be inoperative provided passengers are not carried in the Upper Deck Cabin.
d)	Crew Rest	B	-	0	(O) May be inoperative provided alternate procedures are established and used.
2)	Freighter	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.
-42-4	Cabin Interphone Alerting System				
1)	Passenger/Combi				
a)	Flight Deck Call System (Lights and EICAS Messages)	B	-	0	NOTE: The flight deck chime must be operative.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-42-4	Cabin Interphone Alerting System (Cont'd)				
1)	(Passenger/Combi) (Cont'd)				
b)	Flight Attendant Call Lights	B	-	0	(O) May be inoperative provided: a) PA system operates normally, b) If affected call light is used for lavatory smoke detector alerting, an alternate lavatory smoke detector alert (audio or visual) is installed and operates normally, and c) Alternate procedures for contacting flight attendants are established and used. NOTE 1: Passenger to Attendant Call System is considered Non-Essential Equipment and Furnishing (NEF). NOTE 2: Any system function that operates normally may be used. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-42-4	Cabin Interphone Alerting System (Cont'd)				
1)	(Passenger/Combi) (Cont'd)				
c)	Flight Attendant Chime	B	1	0	(O) May be inoperative provided: a) PA system operates normally, b) If affected chime system is used for lavatory smoke detector alerting, an alternate lavatory smoke detector alert (audio or visual) is installed and operates normally, and c) Alternate procedures for contacting flight attendants are established and used. NOTE 1: Passenger to Attendant Call System is considered Non-Essential Equipment and Furnishing (NEF). NOTE 2: Any system function that operates normally may be used.
d) ***	Crew Rest Call Lights/Chime	B	-	0	(O) May be inoperative provided: a) Associated crew rest cabin interphone handset operates normally, and b) Alternate procedures for contacting crew occupants are established and used. NOTE: Any system function that operates Normally may be used.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-42-4	Cabin Interphone Alerting System (Cont'd)				
2)	Freighter				
a)	Flight Deck Call System (Lights and EICAS Messages)	B	-	0	NOTE: The flight deck chime must be operative.
		D	-	0	May be inoperative provided Courier/Supernumerary compartment and crew rest remains unoccupied.
b)	Upper Deck Call Light	B	1	0	May be inoperative provided Personnel Address System operates normally.
		D	1	0	May be inoperative provided Courier/Supernumerary compartment remains unoccupied.
c)	Upper Deck Chime	B	1	0	May be inoperative provided Personnel Address System operates normally.
		D	1	0	May be inoperative provided Courier/Supernumerary compartment remains unoccupied.
d)	Crew Rest Call Lights/Chime	B	-	0	(O) May be inoperative provided: a) Personnel Address System operates normally, and b) Alternate procedures are established and used.
		D	-	0	May be inoperative provided crew rest remains unoccupied.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-43-1	Ground Crew Call System	C	1	0	(O) May be inoperative provided: a) EE Cooling System is continuously monitored during ground operations, and b) Alternate procedures are established and used.
-51-1	Flight Deck Interphone System				(Dispatch relief moved to item 23-42-1, Revision 19.)
-51-2	Headset/Boom Microphones	D	-	-	Any in excess of those require by 14 CFR may be missing.
1)	Headset Boom Microphones	A	-	0	May be inoperative provided: a) Associated hand microphone is installed and operates normally, b) Flight Data Recorder (FDR) operates normally, and c) Repairs are made within three flight days.
2)	Headset Earphones/ Headphones	C	-	1	Either the Captain's or First Officer's earphones/headphone may be inoperative provided associated Flight Deck Speaker operates normally.
-51-3	Flight Deck Speakers	C	2	0	May be inoperative provided: a) Procedures are not dependent upon their use, and b) Associated headset earphones or headphones are installed and operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-51-4	Audio Control Panels				
1)	Captain's Audio Control Panel	C	1	0	(O) May be inoperative provided First Observer's audio control panel operates normally.
2)	First Observer's Audio Control Panel	A	1	0	May be inoperative provided: a) Captain's audio control panel operates normally, and b) Repairs are made within two flight days.
3) ***	Second Observer's Audio Control Panel	D	1	0	
-51-5	Boom Microphones				(Deleted. Incorporated into Item 23-51-2 Revision 16).
-51-6	Upper Deck Call and Communications System (Freighter)				(Deleted. Incorporated into Item 23-42-1 Revision 21)
-51-7	Cargo Intercom System (Freighter)	D	1	0	
-51-8	Captain/First Officer Push-to-Talk (PTT) Switches				
1)	Control Wheel PTT Switches	C	2	1	(M) One may be inoperative provided: a) Associated audio control panel PTT switch operates normally, and b) Affected switch is deactivated open.
2)	Flight Crew Audio Control Panel PTT Switches	C	2	1	(M) One may be inoperative provided: a) Associated control wheel PTT switch operates normally, and b) Affected switch is verified inoperative open.
3) ***	Glareshield PTT Switches	C	2	0	(M) May be inoperative provided the affected switch is deactivated open.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-71-1	Cockpit Voice Recorder System (CVR)	A	1	0	May be inoperative provided: a) Flight Data Recorder (FDR) operates normally, and b) Repairs are made within three flight days.
-72-1 ***	Cabin Video Surveillance System (CVSS)	D	1	0	May be inoperative provided procedures do not require its use.
		D	1	0	(O) May be inoperative provided alternate procedures are established and used.
1)	Display Unit	D	2	0	(O) May be inoperative provided procedures do not require its use.
		D	2	0	(M) May be removed from aircraft provided that the connecting wires are coiled and stowed.
a)	Display Primary Mode	D	-	0	
b)	Thumbnail Mode	D	-	0	
2)	Video Camera	D	-	0	
3)	Wireless LAN Unit	D	-	0	
4)	Video Server Unit	D	-	0	
5)	Lav Motion Sensor	D	-	0	
-76-1 ***	AirWorks Flight Deck Door Surveillance System (CDSS) (STC ST01541 LA)	C	1	0	(M)(O) May be inoperative until required by 14 CFR: a) Deactivate CDSS in accordance with AirWorks AMM Supplement, Document No. AMM23201002, Rev A, Chapter 23-76-00, Paragraph 7, Page 105, and b) Verify no video image on monitor.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23 COMMUNICATIONS					
-76-2 ***	Flight Deck Door Visual Surveillance Systems	A	1	0	(O) May be inoperative provided: a) Alternate procedures are established and used, and b) Repairs are made within three flight days. NOTE: Any Visual Surveillance System function that operates normally may be used.
		C	1	0	(O) Maybe inoperative provided: a) A flight deck door viewing port is installed and operates normally, and b) Alternate procedures are established and used. NOTE: Any Visual Surveillance System function that operates normally may be used.
		D	1	0	May be inoperative provided procedures do not require its use.
1) ***	Cargo Configuration	C	1	0	May be inoperative provided courier/ supernumerary compartment remains empty.
		D	1	0	May be inoperative provided procedures do not require its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
24 ELECTRICAL POWER					
-11-1	Engine Driven Generator Systems (IDG, GCU, GCB)	B	4	3	(M) One may be inoperative provided: a) Generator Control Breaker (GCB), if inoperative, remains open, b) For PW, if engine Air Oil Cooler (AOC) operates normally, fuel tank temperature remains above – 36 degrees C throughout the flight, and c) IDG is disconnected or removed.
		B	4	3	(M) One may be inoperative provided: a) Generator Control Breaker (GCB), if inoperative, remains open, b) For PW, if engine Air Oil Cooler (AOC) is inoperative open, fuel tank temperature remains above – 30 degrees C throughout the flight, and c) IDG is disconnected or removed.
1)	Cargo Configuration/ Freighter	C	4	3	(M) One may be inoperative provided: a) Generator Control Breaker (GCB), if inoperative, remains open, b) For PW, if engine Air Oil Cooler (AOC) operates normally, fuel tank temperature remains above – 36 degrees C throughout the flight, and c) IDG is removed.
		C	4	3	(M) One may be inoperative provided: a) Generator Control Breaker (GCB), if inoperative, remains open, b) For PW, if engine Air Oil Cooler (AOC) is inoperative open, fuel tank temperature remains above – 30 degrees C throughout the flight, and c) IDG is removed.
-11-2	Generator DRIVE Lights	C	4	3	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
24 ELECTRICAL POWER					
-21-1	Lightning Protectors	C	12	9	One of each phase may be inoperative provided all AC buses are paralleled. NOTE: For triple channel Autoland at least two of the three generators used must have lighting protection on all three phases.
-21-2	APU Driven Generator Systems (Generator, AGCU, APB)	C	2	0	(M) May be inoperative provided associated Auxiliary Power Breaker(s) (APBs) remains open.
		C	2	0	(M) May be inoperative and removed provided APU is deactivated.
1) ***	APU Generator Cooling Airflow Detector	D	1	0	(M) May be inoperative deactivated.
-22-1	Bus Tie Breakers (BTB)				
1)	No. 1, 2, and 3	C	3	2	(M) One may be inoperative closed provided: a) No. 4 operates normally, and b) Approach minimums do not require its use. NOTE: If No. 1, 2 or 3 BTB is inoperative, triple channel autoland will not be available.
2)	No. 4	C	1	0	(M) May be inoperative closed provided No. 1, 2, and 3 operate normally.
-22-2	Split System Breaker (SSB)	C	1	0	(O) May be inoperative closed provided all BTB's operate normally.
-23-1	APU Generator Power ON Lights	C	2	0	
-23-2	APU Generator Power AVAIL Lights	C	2	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
24 ELECTRICAL POWER					
-23-3	AC Bus ISLN Lights	C	4	3	(M) One indication may be inoperative provided associated BTB is verified to operate normally.
-23-4	Engine and APU Generator FIELD OFF Lights (Overhead Maintenance Panel)	C	6	0	
-23-5	Split System Breaker OPEN Light (Overhead Maintenance Panel)	C	1	0	
-23-6	GEN CONT Lights	C	4	0	
-32-1	Transformer Rectifier Units (TRU)				
1)	Main	C	4	3	
2) ***	APU	D	1	0	(O) May be inoperative provided APU battery is selected for APU start.
-32-2	DC Bus Isolation Relays				
1)	No. 1, 2, and 3	C	3	2	One may be inoperative closed provided: a) No. 4 operates normally, and b) Approach minimums do not require its use. NOTE: If No. 1, 2 or 3 DC Isolation Relay is inoperative, triple channel autoland will not be available.
2)	No. 4	C	1	0	May be inoperative closed provided No. 1, 2, and 3 operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
24 ELECTRICAL POWER					
-33-1 ***	Towing Inverter	D	1	0	(M) May be inoperative or removed.
-41-1	External Power Systems	C	2	0	
-51-1 ***	Voltage Harmonic Filters	C	-	0	(O) May be inoperative provided: a) Video System is selected OFF before engine start, b) Video System remains OFF until completion of the Engine Start Procedure, and c) Video System is selected OFF before all CAT III approaches.
		C	-	0	(M) May be inoperative provided associated VS zone is deactivated.
1)	Neutral Ground Wire (PRR 85213) Incorporated	D	-	0	
2)	Six Filter Installation	C	6	5	One filter on AC Bus 3 Phase A or AC Bus 3 Phase B may be inoperative.
-56-1	Electrical Load Control Units (ELCU)				
1)	Utility Power ELCUs	C	4	3	(M)(O) One may be inoperative provided: a) Dispatch limitations for affected utility bus equipment are observed, and b) For Passenger/Combi, utility bus #4 ELCU operates normally.
2)	Galley Power ELCUs (Passenger/Combi)	C	4	0	
-56-2	Utility Power OFF Lights	C	2	0	

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-11-1	Crewmember Shoulder Harness (Flight Deck)				Deleted by Revision 13, See item 25-11-3 for applicable relief.
-11-2	Flight Crew Seats				
1) ***	Power Adjustment System	D	2	0	
2)	Manual Adjustment System				
a)	Recline Systems	A	2	0	(M) May be inoperative provided: a) Affected seat is secured in an upright position, b) Seat is acceptable to affected crewmember, and c) Repairs are made within two flight days.
b)	Armrests	B	4	0	(M) May be inoperative provided: a) Affected armrest is stowed in the retracted position or removed, and b) Seat is acceptable to affected crewmember.
c)	Lumber/Thigh Supports	C	4	0	May be inoperative provided seat is acceptable to the affected crewmember.
d)	Headrests	C	2	0	May be inoperative provided seat is acceptable to the affected crewmember.
e)	Vertical Adjustment	A	2	0	(M) May be inoperative provided: a) Seat is acceptable to the affected crewmember, and b) Repairs are made within two flight days.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-11-3	Observer Seat(s)				
1)	Primary Observer Seat (Including associated equipment)	A	-	-	May be inoperative provided: a) A passenger seat in the passenger cabin is available to the FAA inspector for the performance of official duties, and b) Repairs are made within two flight days.
		A	-	-	May be inoperative provided: a) Secondary observer's seat is available to the FAA inspector for the performance of official duties, and b) Repairs are made within two flight days. NOTE 1: This proviso is intended to provide for occupancy of the above seat by an FAA inspector when the minimum safety equipment (safety belt and oxygen) is functional and the inspector determines the conditions to be acceptable. NOTE 2: The pilot in command will determine if the minimum safety equipment is functional for other persons authorized to occupy the observer's seat(s).

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-11-3	Observer Seat(s) (Cont'd)				
1)	Primary Observer Seat (Including associated equipment) (Cont'd)				
		A	-	-	May be inoperative provided: a) Required minimum safety equipment (safety belt and oxygen) is available, b) Seat is acceptable to the FAA inspector for the performance of official duties, and c) Repairs are made within two flight days. NOTE 1: This proviso is intended to provide for occupancy of the above seat by an FAA inspector when the minimum safety equipment (safety belt and oxygen) is functional and the inspector determines the conditions to be acceptable. NOTE 2: The pilot in command will determine if the minimum safety equipment is functional for other persons authorized to occupy any observer's seat(s).
2) ***	Additional Observer's Seat (Including Associated Equipment)	D	-	0	NOTE: The pilot in command will determine if the minimum safety equipment is functional for other persons authorized to occupy any observer's seat(s).
3) ***	Additional Flight Deck and Crew Rest Area Seat(s) (Including Associated Equipment)	D	-	0	NOTE: The pilot in command will determine if the minimum safety equipment is functional for other persons authorized to occupy any observers' seat(s).
-13-1	Item Moved				Dispatch relief for this equipment moved to item 52-51-1.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-20-1	Non-Essential Equipment and Furnishings (NEF)		-	0	May be inoperative, damaged or missing provided that the item(s) is deferred in accordance with the operator's NEF deferral program. The NEF program, procedures and processes are outlined in the operator's (insert name) manual. (M) and (O) procedures, if required, must be available to the flight crew and included in the operator's appropriate document. NOTE: Exterior lavatory door ash trays are not considered NEF items.
-24-1 ***	Cart Lift System (Between Main and Upper Deck Galleys)	C	1	0	(M) May be inoperative deactivated.
1)	Normal Mode	C	1	0	(O) May be inoperative provided: a) Override Mode operates normally, and b) Alternate procedures are established and used.
2)	Override Mode	C	1	0	(O) May be inoperative provided: a) Normal Mode operates normally, and b) Alternate procedures are established and used.
3)	Actuator Motors	C	2	1	(M)(O) May be inoperative provided: a) Associated motor is deactivated, b) Cart lift operates in Normal Mode, and c) Alternate procedures are established and used.
-24-2 ***	Secondary Barrier (Flight Deck Security)				(Deleted. Incorporated in Item 25-20-1, Revision 24)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-25-1	Flight Attendant Seat Assemblies (Single or Dual Position)				
1)	Required Flight Attendant Seats	B	-	-	(M)(O) 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 to most effectively perform assigned duties. c) Alternate procedures are established and used as published in crewmember manuals, d) Folding type seat stows automatically or is secured in the retracted position, and e) Passenger seat assigned to flight attendant is placarded FOR FLIGHT ATTENDANT USE ONLY. NOTE 1: An automatic folding seat that will not stow automatically is considered inoperative. NOTE 2: A seat position with an inoperative or missing restraint system is considered inoperative. NOTE 3: Individual operators, when operating with inoperative seats, will consider the locations and combinations of seats to ensure that the proximity to exits and distribution requirements of the applicable 14 CFR are met. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-25-1	Flight Attendant Seat Assemblies (Single or Dual Position) (Cont'd)				
1)	Required Flight Attendant Seats (Cont'd)				NOTE 4: 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.
2)	Excess Flight Attendant Seats	C	-	-	(M) May be inoperative provided: a) Affected seat position or seat assembly is not occupied, and b) Folding type seat stows automatically or is secured in the retracted position. NOTE 1: An automatic folding seat that will not stow automatically is considered inoperative. NOTE 2: A seat position with an inoperative or missing restraint system is considered inoperative.
3)	Cargo Configuration	D	-	-	May be inoperative provided affected seat position or seat assembly is not occupied.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-25-2	Passenger Seats	D	-	-	(M) May be inoperative provided: a) Seat does not block an Emergency Exit, b) Seat does not restrict any passenger from access to the main aircraft aisle, and c) The affected seat(s) is blocked and placarded DO NOT OCCUPY. NOTE 1: A seat with an inoperative seat belt is considered inoperative. NOTE 2: Inoperative seats do not affect the required number of Flight Attendants. NOTE 3: Affected seat(s) may include the seat(s) behind and/or adjacent outboard seats.
1)	Recline Mechanism	D	-	-	(M) May be inoperative and seat occupied provided seat back is secured in the full upright position.
		D	-	-	May be inoperative and seat occupied provided seat back is immovable in the full upright position.
2)	Underseat Baggage Restraining Bar	C	-	-	(O) May be inoperative or missing provided: a) Baggage is not stowed under seat with inoperative restraining bar, b) Associated seat is placarded “DO NOT STOW BAGGAGE UNDER THIS SEAT”, and c) Procedures are established to alert Cabin Crew of inoperative restraining bar.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-25-2	Passenger Seats (Cont'd)				
3)	Armrest				
a)	Armrest With Recline Mechanism	D	-	-	(M) May be inoperative or missing and seat occupied provided: a) Armrest does not block any Emergency Exit, b) Armrest does not restrict any passenger from access to the main aircraft aisle, and c) If armrest is missing, seat back is secured in the full upright position.
b)	Armrest Without Recline Mechanism	D	-	-	May be inoperative or missing and seat occupied provided: a) Armrest does not block an Emergency Exit, and b) Armrest does not restrict any passenger from access to the main aircraft aisle.
4)	Headrests		-	-	(Deleted. Incorporated into Item 25-20-1, Revision 21)
5) ***	Seat Belt Air Bag Restraint System				
a)	Seat Belt Air Bags (Required by CFR)	D	-	-	May be inoperative provided affected seat is blocked and placarded "DO NOT OCCUPY".
b)	Seat Belt Air Bags (Not Required by CFR)	D	-	-	May be inoperative or disconnected provided seat belt operates normally.
6) ***	"Takeoff, Taxi and Landing" (TTL) Position Light (Lie Flat Seats) (STC ST0189SE-D)	C	-	0	May be inoperative and seat occupied provided Flight Attendant verifies seat(s) is in the full upright position prior to takeoff and landing.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-25-3	Underseat Baggage Restraining Bars		-	-	(Deleted. Incorporated into Item 25-25-2, Revision 21)
-28-1	Overhead Storage Bin(s)/Cabin and Galley Storage Compartments/ Closets	C	-	-	(M) May be inoperative provided: a) Procedures are established to secure compartment/closets CLOSED, b) Any emergency equipment located in affected compartment is considered inoperative, c) Affected compartment is not used for storage of any item(s) except for those permanently affixed, and d) Associated bin or compartment is prominently placarded: “DO NOT USE”. NOTE: If no partitions are installed, the entire overhead storage compartment is considered one bin or compartment.
		C	-	-	(M)(O) May be inoperative provided: a) Affected door(s) is removed or, for retractable door(s), secured in the retracted (fully open) position, b) Associated bin or compartment is not used for storage of any items, except those permanently affixed, c) Associated bin or compartment is prominently placarded: “DO NOT USE”, d) Procedures are established and used to alert crew members and passengers of inoperative bins or compartment, and e) Passengers are briefed that associated bin or compartment is not used. NOTE 1: If no partitions are installed, the entire overhead storage compartment is considered one bin or compartment.

Continued

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-28-1	Overhead Storage Bin(s)/Cabin and Galley Storage Compartments/ Closets (Cont'd)				NOTE 2: Any emergency equipment located in the associated compartment (permanently affixed) is available for use.
1)	Multi Latch/Quarter Turn Lug Installations	C	-	-	One latch/lug per component may be inoperative provided: a) Remaining latch(es)/lug(s) on affected compartments operate normally, and b) If affected compartment is used for a galley cart, the cart remains empty.
2) ***	Storage Compartment Key Locks	D	-	0	(M) May be inoperative in the unlocked position provided doors can be secured by other means.
-29-1 ***	Flight Crew/Flight Attendant Rest Area Convenience Items		-	0	(Deleted. Incorporated into item 25-20-1 Revision 24) NOTE: Fire detection/suppression, doors, or door locks are not considered flight crew/flight attendant rest area NEF items.
-29-2 ***	Flight Crew/Flight Attendant Rest Area Door Lock(s)	C	-	0	(M) May be inoperative provided: a) Associated rest area door is deactivated in the unlocked position, and b) Associated rest area door opens and closes normally.
-29-3 ***	Flight Crew/Flight Attendant Rest Area(s)	C	-	0	(M) May be inoperative provided affected flight crew/flight attendant rest area(s) is deactivated closed. NOTE: This proviso is not intended to prohibit flight crew/flight attendant rest area(s) inspections by crewmembers.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-30-1	Galley/Cabin Waste Receptacle Access Doors/Covers	C	-	-	(M)(O) May be inoperative provided: a) Associated waste container is empty, b) Receptacle access is secured to prevent waste introduction into the receptacle, and c) Procedures are established to ensure that sufficient galley/cabin waste receptacles are available to accommodate all waste that may be generated on a flight.
-40-1	Exterior Lavatory Door Ashtrays				
1)	Airplanes With Multiple Exterior Lavatory Door Ashtrays Installed	A	-	-	Up to and including 50 percent may be missing or inoperative for 10 days.
		A	-	-	More than 50 percent may be missing or inoperative for 3 days. NOTE: Crew lavatories are included in the total aircraft exterior lavatory door ashtray count.
2)	Airplanes With Only One Exterior Lavatory Door Ashtray Installed	A	1	0	May be missing provided it is replaced within 10 days.
-40-2	Lavatory Waste Receptacle Access Doors/Covers	C	-	-	(M) May be inoperative provided: a) Associated waste container is empty, b) Receptacle access is secured to prevent waste introduction into the receptacle, c) Lavatory is used only by crewmembers, and d) Associated lavatory entrance door is locked closed and placarded, INOPERATIVE – DO NOT ENTER. NOTE: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-40-3	DELETED				
-52-1	Lower Cargo Compartment Lining Panels	C	-	0	(O) May be damaged or missing provided procedures are established and used to verify the associated cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operators MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-53-1 ***	Cargo Handling System(s)	D	-	0	NOTE: Any portion of system(s) that operates normally may be used.
-54-1	Cargo Restraint Systems	A	-	-	(M) 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 Document are observed, and b) Repairs are made prior to the completion of the next heavy maintenance visit.
		C	-	-	(M) May be inoperative or missing provided associated cargo compartment remains empty.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-59-1	Combi Main Deck Cargo Compartment Lining Panels	C	-	0	(O) May be damaged or missing provided procedures are established and used to verify the associated cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operators MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-61-1	Flight Crew/Supernumerary Escape Devices				
1)	Inertial Escape Reels				
a)	Passenger/Combi Configurations or Freighter with Draw-Through Smoke Detection System	C	-	-	(M)(O) May be inoperative or missing provided: a) The number of flight crewmembers plus supernumeraries is limited to the number of operative escape reels installed, and b) Inoperative escape reels are removed.
b)	Freighter without Draw-Through Smoke Detection System	C	-	0	(M)(O) May be inoperative or missing provided: a) Both Upper Deck Door/Slides operate normally, and b) Inoperative escape reels are removed.
		C	-	2	(M)(O) May be inoperative or missing provided: a) One Upper Deck Door/Slide operates normally, b) The number of flight crewmembers plus supernumeraries is limited to the number of operative escape reels installed, and c) Inoperative escape reels are removed.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-61-1	Flight Crew/Supernumerary Escape Devices (Cont'd)				
2)	Escape Harnesses (Freighter Configuration)				
a)	Freighter with Draw-Through Smoke Detection System	C	-	0	(M)(O) May be inoperative or missing provided: a) The number of supernumeraries is limited to the number of operative escape reels/harnesses installed, and b) Inoperative escape harnesses are removed.
b) ***	Freighter without Draw-Through Smoke Detection System	C	-	0	(M)(O) May be inoperative or missing provided: a) Both Upper Deck Door/Slides operate normally, and b) Inoperative escape harnesses are removed.
		C	-	0	(M)(O) May be inoperative or missing provided: a) One Upper Deck Door/Slide operates normally, b) The number of supernumeraries is limited to the number of operative escape reels/harnesses installed, and c) Inoperative escape harnesses are removed.
-62-1	Flotation Equipment (Crew And Passenger)	D	-	-	Any in excess of that required by 14 CFR may be inoperative or missing.
-63-1 ***	Emergency Evacuation Signal System	C	1	0	(O) May be inoperative provided: a) Alternative procedures are established to initiate an emergency evacuation, and b) Cabin attendants are advised that the evacuation signal system is inoperative.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-63-2	Megaphones	D	-	2	Any in excess of those required by 14 CFR may be inoperative or missing provided: a) Inoperative megaphone is removed from passenger cabin, b) Associated placard is removed or obscured, and c) Required distribution is maintained. NOTE: Not required for all-cargo operations.
-63-3	Fasten Seat Belt While Seated Placards	C	-	-	One or more signs or placards may be illegible or missing provided a legible sign or placard is readable from each occupied passenger seat.
-63-4 ***	Cabin Emergency Flashlight Holders/Flashlights	C	-	-	May be inoperative or missing provided crewmember has a flashlight of equivalent characteristics readily available.
-63-5	Emergency Locator Transmitter (ELT)				
1) ***	Survival Type ELTs	D	-	-	Any in excess of those required by 14 CFR may be inoperative or missing.
2) ***	Fixed ELTs	A	-	0	(M) May be inoperative provided: a) System is deactivated, and b) Repairs are made within 90 days.
		A	-	0	May be missing provided repairs are made within 90 days.
		D	-	-	(M) Any in excess of those required by 14 CFR may be inoperative provided system is deactivated.
		D	-	0	Any in excess of those required by 14 CFR may be missing.
-64-1	Flexible Smoke Barrier (Passenger/Combi)	C	1	0	May be inoperative provided not more than eight passengers occupy the upper deck during takeoff and landing.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-64-2	Emergency Medical Equipment				
1)	Automatic External Defibrillator (AED) and/or Associated Equipment	A	-	0	(O) May be incomplete, missing or inoperative provided: a) AED is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within 1 flight.
		D	-	-	Any in excess of those required by 14 CFR may be incomplete, missing, or inoperative.
2)	Emergency Medical Kit (EMK) and/or Associated Equipment	A	-	0	(O) May be incomplete, missing or inoperative provided: a) EMK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within 1 flight.
		D	-	-	Any in excess of those required by 14 CFR may be incomplete, missing, or inoperative.
3)	First Aid Kit (FAK) and/or Associated Equipment	A	-	-	(O) If more than one is required by 14 CFR, only one of the required first aid kits may be incomplete, missing or inoperative provided: a) FAK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within 1 flight.
		D	-	-	Any in excess of those required by 14 CFR may be incomplete, missing, or inoperative.
-65-1 ***	Security Kit and Associated Equipment	D	-	0	May be incomplete or missing.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS					
-65-2 ***	Flight Deck Tool Kit and Associated Equipment	D	-	0	May be inoperative or missing provided EE bay lock screw is removed.
-65-3 ***	Cockpit Smoke Vision System (CSVS) (STC ST00892LA)	D	-	0	May be inoperative or missing.

SYSTEM & SEQUENCE NUMBERS	1. ITEM	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25 EQUIPMENT/FURNISHINGS				

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-11-1	Engine Fire Detector Systems				
1)	Detection Loop	C	8	4	One loop per engine may be inoperative.
2)	Flight Deck Test System	C	1	0	(M) May be inoperative provided an alternate procedure is established to assure system integrity.
-11-2	Engine Overheat Detection System (PW and GE)				
1)	Detection Loop	C	8	4	One loop per engine may be inoperative.
2)	Flight Deck Test System	C	1	0	(M) May be inoperative provided an alternate procedure is established to assure system integrity.
-11-3 ***	Nacelle Temperature Indications (GE and RR)	C	4	0	
-11-4	Fuel Control Switch Fire Light	A	4	3	One may be inoperative provided flight does not exceed three flight days before repairs are made.
-12-1	Engine Strut Overheat Detection Systems (RR)				
1)	Detection Loop	C	8	4	One loop per engine strut may be inoperative.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-13-1	Lavatory Smoke Detection Systems	C	-	-	(M)(O) For each lavatory, may be inoperative provided: a) Lavatory waste receptacle is empty, b) Associated lavatory door is locked closed and placarded, INOPERATIVE – DO NOT ENTER, and c) Lavatory is used only by crewmember. NOTE: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.
		D	-	0	May be inoperative for flights conducted in a cargo configuration.
-14-1 ***	Main Deck Cargo Smoke Detector System (Combi/Freighter)				
1)	Flight Deck Test System	C	1	0	(M) May be inoperative provided smoke detector system integrity is verified before each departure.
		C	1	0	(O) May be inoperative provided procedures are established and used to verify main deck cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-14-1 ***	Main Deck Cargo Smoke Detector System (Combi/Freighter) (Cont'd)				
2)	Detectors	C	-	-	One detector (loops A or B) per smoke zone may be inoperative.
a)	Combi	C	-	0	(O) Both detectors (loops A and B) per smoke zone may be inoperative provided: a) Procedures are established and used to verify associated smoke zone(s) remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) Procedures are established and used to verify smoke zone immediately forward of the associated smoke zone(s) remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-14-1 ***	Main Deck Cargo Smoke Detector System (Combi/Freighter) (Cont'd)				
2)	Detectors (Cont'd)				
b)	Freighter with Draw-Through Smoke Detection System	C	-	0	(O) Both detectors (loops A and B) per smoke zone may be inoperative provided: a) Procedures are established and used to verify associated smoke zone(s) remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) Procedures are established and used to verify two smoke zones immediately forward of the associated smoke zone(s) remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
c)	Freighter without Draw-Through Smoke Detection System	C	-	-	(M)(O) Multiple detectors within a smoke zone(s) (Forward, Mid, and/or Aft) may be inoperative provided: a) All inoperative detectors per smoke zone are of the same loop type (loop A or B), and b) All detectors of opposite loop type are verified to operate normally before each departure. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-14-1 ***	Main Deck Cargo Smoke Detector System (Combi/Freighter) (Cont'd)				
2)	Detectors (Cont'd)				
c)	Freighter without Draw-Through Smoke Detection System (Cont'd)	C	-	0	(O) Multiple detectors (loop A and B) within a smoke zone(s) (Forward, Mid, and/or Aft) may be inoperative provided procedures are established and used to verify the associated smoke zone(s) remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULD's), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
3)	Passenger Compartment Smoke Detection Annunciator Panels (Combi)	C	2	1	
		C	2	0	(O) May be inoperative provided procedures are established and used to verify main deck cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULD's), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-14-2 ***	Crew Rest Area Smoke Detection System				
1)	Ionization Type Detectors				
a)	Passenger/Combi	C	-	0	(M)(O) May be inoperative provided: a) Crew rest area is empty, b) Crew rest area door is locked closed and placarded, INOPERATIVE – DO NOT ENTER, and c) Crew rest area is not used for any purpose.
b)	Freighter with Draw-Through Smoke Detection System	C	3	1	(M)(O) Two may be inoperative provided: a) Center detector operates normally, and b) Associated detector(s) is deactivated.
2)	Photoelectric Type Detectors (Door 5 CRA)	C	4	2	(M)(O) Two may be inoperative provided at least one detector in Zone 1 and one detector in Zone 2 operate normally.
		C	4	0	(M)(O) May be inoperative provided: a) Crew rest area is empty, b) Crew rest area door is locked closed and placarded, INOPERATIVE – DO NOT ENTER, and c) Crew rest area is not used for any purpose.
-14-3	CARGO DET AIR Indicating System (Main Deck/Lower Lobe) (Passenger/ Combi/Freighter with Draw-Through Smoke Detection System)	C	-	-	(M) Indication(s) for associated cargo areas may be inoperative provided associated smoke sampling system integrity is verified before each departure.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-14-3	CARGO DET AIR Indicating System (Main Deck/Lower Lobe) (Passenger/ Combi/Freighter with Draw-Through Smoke Detection System) (Cont'd)	C	-	-	(O) Indication(s) for associated cargo areas may be inoperative provided: a) Procedures are established and used to verify associated lower lobe cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) Procedures are established and used to verify associated main deck cargo area(s) remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-15-1	APU Fire Detection System				
1)	Detection Loop	C	2	1	
		C	2	0	(O) Both loops may be inoperative provided: a) APU is used for ground operations only, and is continuously monitored, b) APU external control system operates normally, and c) APU is shut down before taxi.
2)	Flight Deck Test System	C	1	0	(M) May be inoperative provided an alternate procedure is established to ensure integrity of the system.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-16-1	Lower Lobe Cargo Compartment Smoke Detection System (Forward, Aft)				
1)	Flight Deck Test System	C	1	0	(M) May be inoperative provided smoke detector system integrity is verified before each departure.
		C	1	0	(O) May be inoperative provided procedures are established and used to verify associated cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
2)	Detectors				
a)	Passenger/Combi/ Freighter with Draw-Through Smoke Detection System	C	-	-	(M)(O) One detector (loop A or B) per smoke zone may be inoperative provided remaining detector is verified to operate normally before each departure.
		C	-	0	(O) Both detectors (loops A and B) per smoke zone may be inoperative provided procedures are established and used to verify associated cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-16-1	Lower Lobe Cargo Compartment Smoke Detection System (Forward, Aft) (Cont'd)				
2)	Detectors (Cont'd)				
b)	Freighter without Draw-Through Smoke Detection System	C	-	-	(M)(O) Multiple detectors within a smoke zone(s) (Forward and/or Aft) may be inoperative provided: a) All inoperative detectors per smoke zone are of the same loop type (loop A or B), and b) All detectors of opposite loop type are verified to operate normally before each departure.
		C	-	0	(O) Multiple detectors (loop A and B) within a smoke zone(s) (Forward, Mid, and/or Aft) may be inoperative provided procedures are established and used to verify the associated cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULD's), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
3) ***	Draw Through Tube Heaters	D	-	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-17-1	Wheel Well Fire Detection System	C	1	0	(M)(O) May be inoperative deactivated provided brakes are verified cool to the touch before engine start.
		C	1	0	(M)(O) May be inoperative deactivated provided brakes are verified cool by monitoring brake temperature indications before engine start.
1)	Flight Deck Test System	C	1	0	(M) May be inoperative provided an alternate procedure is established to ensure integrity of the system.
-18-1	Wing Leading Edge Overheat Detection System				
1)	Dual Loop System				
a)	Loops	C	4	2	One loop in each wing may be inoperative provided the remaining loop(s) operate normally.
2)	Flight Deck Test System	C	1	0	(M) May be inoperative provided an alternate procedure is established to ensure integrity of the system.
-18-2 ***	Center Duct Leak Detection Systems	C	1	0	(O) May be inoperative provided alternate procedures are established and used.
1)	Dual Loop System				
a)	Loops	C	2	1	
2)	Flight Deck Test System	C	1	0	(M) May be inoperative provided an alternate procedure is established to ensure integrity of the system.
-19-1	APU Duct Leak Detection System	C	1	0	(O) May be inoperative provided APU selector switch remains OFF.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-20-1	Fire Bottle Pressure Indication Systems (Engine, Lower Cargo, Main Deck Cargo, APU)	C	-	0	(M) May be inoperative provided: a) Squib test is used to verify squib integrity, and b) Procedure is used to verify that the associated bottle is full. NOTE: Not required for inoperative APU, main deck cargo or lower cargo fire extinguisher system.
-21-1	Fire Extinguisher Squib Test (Engine, APU, Lower Cargo, Main Deck)	C	1	0	(M) May be inoperative provided it is verified that the failure is in the light circuit.
1)	Lower Cargo and Main Deck Squib Test System	C	2	0	(O) May be inoperative provided procedures are established and used to verify associated cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
2)	APU Squib Test System	C	1	0	(O) May be inoperative provided APU is not used.
-22-1	APU Fire Extinguisher System	C	-	0	(M)(O) May be inoperative provided: a) APU is not used, and b) APU fuel valve is secured closed.
1) ***	APU Auto Discharge	C	1	0	(M) May be inoperative provided the APU controls at the wheel well or flight deck are monitored by a qualified operator at all times when the APU is used during ground operations.
2) ***	Two Bottle System	C	2	1	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-23-1	Lower Cargo Compartment Fire Extinguisher System				
1)	Passenger/Combi/ Freighter with Draw-Through Smoke Detection System	C	1	0	(O) May be inoperative provided: a) Procedures are established and used to verify lower cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
2)	Passenger/Combi/ Freighter without Draw-Through Smoke Detection System	C	1	0	(M)(O) May be inoperative provided: a) Procedures are established and used to verify lower cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and b) Lower Cargo Smoke Detection System is deactivated. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-23-1	Lower Cargo Compartment Fire Extinguisher System (Cont'd)				
3)	Four Bottle System, Bottles C & D	C	2	1	(O) One bottle and associated indications may be inoperative provided: a) Airplane is operated pressurized, b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and c) Flight remains within 90 minutes of landing at a suitable airport. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		C	2	0	(O) Both bottles and associated indications may be inoperative provided: a) Airplane is operated pressurized, b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and c) Flight remains within 30 minutes of landing at a suitable airport. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.

(Continued)

SYSTEM & SEQUENCE NUMBERS	1. ITEM		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-23-1	Lower Cargo Compartment Fire Extinguisher System (Cont'd)				
4) ***	Six Bottle System, Bottles C, D, E & F	C	4	3	(O) One bottle and associated indications may be inoperative provided: a) Airplane is operated pressurized, b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, c) For Passenger/Combi/Freighter with Draw-Through Smoke Detection System, flight remains within 148 minutes of landing at a suitable airport, and d) For Freighter without Draw-Through Detection System, flight remains within 258 minutes of landing at a suitable airport. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-23-1	Lower Cargo Compartment Fire Extinguisher System (Cont'd)				
4) ***	Six Bottle System, Bottles C, D, E & F (Cont'd)	C	4	2	(O) Two bottles and associated indications may be inoperative provided: a) Airplane is operated pressurized, b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and c) For Passenger/Combi/Freighter with Draw-Through Smoke Detection System, flight remains within 105 minutes of landing at a suitable airport, d) For Freighter without Draw-Through Smoke Detection System, flight remains within 184 minutes of landing at a suitable airport. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-23-1	Lower Cargo Compartment Fire Extinguisher System (Cont'd)				
4) ***	Six Bottle System, Bottles C, D, E & F (Cont'd)	C	4	1	(O) Three bottles and associated indications may be inoperative provided: a) Airplane is operated pressurized, b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and c) For Passenger/Combi/Freighter with Draw-Through Smoke Detection System, flight remains within 63 minutes of landing at a suitable airport, d) For Freighter without Draw-Through Smoke Detection System, flight remains within 112 minutes of landing at a suitable airport. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		C	4	0	(O) All bottles and associated indications may be inoperative provided: a) Airplane is operated pressurized, b) For Combi, procedures are established and used to verify main deck cargo compartment remains empty or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, and c) Flight remains within 20 minutes of landing at a suitable airport.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-23-1	Lower Cargo Compartment Fire Extinguisher System (Cont'd)				
4) ***	Six Bottle System, Bottles C, D, E & F (Cont'd)				NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
5)	Bottles (C & D) or (C, D, E, & F) Lower Cargo Compartment Distribution Networks	C	2	1	(O) One may be inoperative provided procedures are established and used to verify associated lower cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		C	2	0	(O) May be inoperative provided procedures are established and used to verify lower cargo compartments remain empty, or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
		C	2	0	May be inoperative provided: a) Airplane is operated pressurized, b) For four bottle systems, flight remains within 30 minutes of landing at a suitable airport, and c) For six bottle systems, flight remains within 20 minutes of landing at a suitable airport.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-24-1 ***	Main Deck Fire Extinguishing System (Combi)	C	1	0	(O) May be inoperative provided procedures are established and used to verify main deck cargo compartment remains empty, or contains only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
1)	Main Deck Metered Halon Bottles	C	10	9	(M)(O) One may be inoperative provided: a) Airplane is pressurized, b) Main Deck Halon Dump System and associated bottles A through D operate normally, c) Inoperative bottles, associated flex tubing and squib wiring are disconnected, capped and stowed, and d) Alternate procedures are established for the crew member assigned fire fighting responsibility to enter the cargo compartment, at the captain's direction, within 80 minutes, with proper equipment to extinguish any remaining fire.
		A	10	7	(M)(O) Three may be inoperative provided: a) Airplane is pressurized, b) Main Deck Halon Dump System and associated bottles A through D operate normally, c) Inoperative bottles, associated flex tubing and squib wiring are disconnected, capped and stowed, d) Alternate procedures are established for the crew member assigned fire fighting responsibility to enter the cargo compartment, at the captain's direction, within 60 minutes, with proper equipment to extinguish any remaining fire, and e) Repairs are made within three flight day.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
-24-2	Lavatory Fire Extinguisher Systems	C	-	-	For each lavatory, the lavatory fire extinguisher may be inoperative provided Lavatory Smoke Detection system operates normally.
		C	-	0	(M)(O) For each lavatory, the lavatory fire extinguisher system may be inoperative provided: a) Lavatory waste receptacle is empty, b) Associated lavatory door is locked closed and placarded INOPERATIVE – DO NOT ENTER, and c) Lavatory is used only by crewmembers. NOTE: These provisos are not intended to prohibit lavatory use or inspections by crewmembers.
		D	-	0	May be inoperative for flights conducted in a cargo configuration.
-26-1	Portable Fire Extinguishers	D	-	-	(M) Any in excess off the those required by 14 CFR may be inoperative or missing provided: a) The inoperative fire extinguisher is tagged inoperative, removed from the installed location, and placed out of sight so it can not be mistaken for a functional unit, and b) Required distribution is maintained.
-27-1 ***	APU Auto Discharge				Deleted. Incorporated into Item 26-22-1 by Revision 16.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
27 FLIGHT CONTROLS					
-11-1	Aileron Trim System	C	1	0	(M) May be inoperative provided aileron trim system is verified to be centered
-11-2	Outboard Aileron Lockout System				
1)	747-400 and 747-400F	C	1	0	(M)(O) May be inoperative unlocked provided maximum airspeed limit is 225 KIAS or 0.73 MACH, whichever is less.
2)	747-400D without SB 747-57-2296 incorporated	C	1	0	(M)(O) May be inoperative unlocked provided maximum airspeed limit is 270 KIAS or 0.73 MACH, whichever is less.
3)	747-400D with SB 747-57-2296 incorporated	C	1	0	(M)(O) May be inoperative unlocked provided maximum airspeed limit is 225 KIAS or 0.73 MACH, whichever is less.
4)	Indication System	C	1	0	(M) May be inoperative provided the aileron lockout system is verified to operate normally before each departure.
-18-1	Aileron Position Indicating System	C	1	0	(M) May be inoperative provided visual confirmation of proper aileron movement is made before each departure.
-21-1	Rudder Trim System				
1) ***	Trim Switch Speed Positions	C	2	1	
2) ***	Trim Centering Switch	C	1	0	
-23-1	Flight Control Shutoff Switch Lights	C	8	6	(M) One per axis may be inoperative provided the associated valve position is verified open before each departure.
-23-2	Hydraulic Flight Controls Valves	C	8	0	(M) May be inoperative open.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
27 FLIGHT CONTROLS					
-28-1	Rudder Position Indicating System	C	1	0	(M) May be inoperative provided visual confirmation of proper rudder movement is made before each departure.
-28-2	Rudder Trim Indicator	C	1	0	(O) May be inoperative provided rudder trim is verified centered before each departure.
-32-1	Stall Warning Systems	C	2	1	(M) One may be inoperative provided remaining system is verified to operate normally before each departure.
1)	Stick Shakers	C	2	1	
-38-1	Elevator Position indicating System	C	1	0	(M) May be inoperative provided visual confirmation of proper elevator movement is made before each departure.
-41-1	Stabilizer Trim/Rudder Ratio Changer Modules (SRM)				
1)	Stabilizer Trim Control	C	2	1	(M)(O) Stabilizer trim control in one module may be inoperative provided: a) Horizontal stabilizer is verified to operate normally with the Alternate Stab Trim Switches, and b) Rudder ratio control in both modules operates normally. NOTE: If Stabilizer Trim control in the other SRM fails, autopilot will not be available.
-41-2	Control Wheel Stabilizer Trim Switches	C	2	1	(O) One may be inoperative provided Alternate Stabilizer Trim System is verified to operate normally before each departure.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
27 FLIGHT CONTROLS					
48-1	Stabilizer Trim Indicators	C	2	1	(M) One may be inoperative (including multiple greenband indication) provided faulty indicator is not visible.
-48-2	Nose Gear Pressure Switch	C	1	0	(O) May be inoperative provided stabilizer trim position is properly set before each departure for the actual airplane weight, center of gravity and takeoff thrust setting.
-51-1	Flap Control Units (FCU)	C	3	2	(M)(O) One may be inoperative or removed provided: a) It is verified that flap position RVDT sensors operate normally before each departure, b) For PW and GE, if right FCU is inoperative or removed, No. 1 demand pump is selected ON during takeoff and landing, and c) For PW and GE, if left FCU is inoperative or removed, No. 4 demand pump is selected ON during takeoff and landing. NOTE: If S/B 747-34-2349 or production equivalent has not been incorporated and center FCU is inoperative or removed, MODE 4 of the ground proximity warning system is considered inoperative.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
27 FLIGHT CONTROLS					
-51-2	TE Flap Drive System				
1)	No-Coast Drag Brake	A	1	0	(M) May be inoperative provided: a) Flap Drive Torque Tube and No-Coast Drag Brake support bracket are verified to be undamaged before each departure, b) Flap Control handle remains in agreement with flap position when hydraulics are unpressurized and Alternate Flaps Arm Switch remains OFF during ground operations in the terminal ramp area, and c) Repairs are made within three flight days.
-62-1	Auto Spoilers System	C	1	0	(M)(O) May be inoperative provided: a) System is deactivated, and b) AFM performance decrements are applied.
-62-2	Speed Brake Solenoid	C	1	0	(M)(O) May be inoperative in the GROUND position provided speed brake lever is not moved beyond the FLIGHT position during flight.
-68-1	Spoiler Position Indicating System	C	1	0	(M) May be inoperative provided visual confirmation of proper spoiler movement is made before each departure.
-81-1	Leading Edge Flaps Drives (Pneumatic)	C	8	7	(M)(O) One may be inoperative provided: a) All electric drives operate normally, and b) Takeoff obstacle clearance is not required upon retraction of flaps from take off position.
-81-2	Leading Edge Flaps Drives (Electric)	C	8	7	(M) One may be inoperative provided: a) All pneumatic drives operate normally, and b) Associated electric drive is deactivated.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
27 FLIGHT CONTROLS					
-81-3	Leading Edge Flaps Retraction System (Reverser Actuated)	C	1	0	
-88-1 ***	Leading Edge Flaps System Position Monitor	C	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-11-1	Fuel Sump Drain Valves	C	-	0	(M) May be inoperative provided: a) There is no evidence of leakage, and b) Alternate procedures are used to prevent water accumulation in associated tank.
-11-2 ***	Horizontal Stabilizer Sump Drain Valves	C	3	0	(O) May be inoperative provided horizontal stabilizer tank remains empty.
		C	3	0	(M) May be inoperative provided: a) There is no evidence of leakage, and b) Alternate procedures are used to prevent water accumulation in associated tank.
1)	Electric Actuation Feature	D	2	0	(M) May be inoperative provided: a) There is no evidence of leakage, and b) Valve(s) is operated manually.
-11-3	Horizontal Stabilizer Sump Drain Indicators	C	2	0	(M) May be inoperative provided there is no evidence of leakage from associated valve(s).
-11-4 ***	Auxiliary Tank Sump Drain Valve	C	1	0	May be inoperative provided auxiliary tank remains empty.
		C	1	0	(M) May be inoperative provided: a) There is no evidence of leakage, and b) Alternate procedures are used to prevent water accumulation in auxiliary tank.
1)	Electric Actuation Feature	D	1	0	(M) May be inoperative provided: a) There is no evidence of leakage, and b) Valve is operated manually.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-14-1 ***	Auxiliary Tank Fuel Switches	C	2	1	One may be inoperative provided auxiliary tank fuel is included as part of Zero Fuel Weight.
		C	2	0	May be inoperative provided: a) Auxiliary tank fuel is included as part of Zero Fuel Weight, and b) Auxiliary tank fuel is considered unusable.
1)	Switch PRESS Lights	C	2	0	May be inoperative provided associated EICAS message operates normally.
-14-2 ***	Auxiliary Tank Transfer Valves	C	2	1	(M) One may be inoperative provided: a) Associated valve is deactivated in closed position, and b) Auxiliary tank fuel is included as part of Zero Fuel Weight.
		C	2	0	(M)(O) May be inoperative provided: a) Associated valve(s) is deactivated in closed position, b) Auxiliary tank fuel is included as part of the Zero Fuel Weight, and c) Auxiliary tank fuel is considered unusable.
		C	2	0	(M)(O) May be inoperative provided: a) Associated valve(s) is deactivated in open position, b) Auxiliary tank fuel is limited to a maximum of 16,300 lb (7,394 kg), and c) 500 lb (277 kg) of auxiliary tank fuel is considered unusable.
		C	2	0	May be inoperative provided auxiliary tank remains empty.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-14-3 ***	Auxiliary Tank Vent Valves	C	2	0	(M) May be inoperative provided associated valve(s) is deactivated in closed position. NOTE: The Auxiliary tank can not be refueled with valve(s) in closed position.
		C	2	1	(M) One may be inoperative provided: a) Associated valve is deactivated in open position, and b) Auxiliary tank fuel is included as part of Zero Fuel Weight.
		C	2	0	(M)(O) May be inoperative provided: a) Associated valve(s) is deactivated in open position, b) Auxiliary tank fuel is included as part of Zero Fuel weight, and c) Auxiliary tank fuel is considered unusable.
		C	2	0	May be inoperative provided auxiliary tank remains empty.
-14-4 ***	Auxiliary Tank Air Blower Valves	C	2	1	(M) One may be inoperative provided: a) Associated valve is deactivated in open position, and b) Both auxiliary tank cabin air valves operate normally.
		C	2	1	(M) One may be inoperative provided: a) Associated valve is deactivated in open position, and b) Auxiliary tank fuel is included as part of Zero Fuel Weight.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-14-4 ***	Auxiliary Tank Air Blower Valves (Cont'd)	C	2	0	(M)(O) May be inoperative provided: a) Associated valve(s) is deactivated in closed position, b) Both auxiliary tank cabin air valves operate normally, and c) Auxiliary tank fuel is included as part of Zero Fuel Weight.
		C	2	0	(M)(O) May be inoperative provided: a) Associated valves(s) is deactivated in closed position, b) Auxiliary tank fuel is included as part of Zero Fuel Weight, and c) Auxiliary tank fuel is considered unusable.
-14-5 ***	Auxiliary Tank Cabin Air Valves	C	2	1	(M) One may be inoperative provided: a) Associated valve is deactivated in open position, and b) Both auxiliary tank air blower valves operate normally.
		C	2	1	(M) One may be inoperative provided: a) Associated valve is deactivated in open position, and b) Auxiliary tank fuel is included as part of Zero Fuel Weight.
		C	2	0	(M) May be inoperative provided: a) Associated valve(s) is deactivated in closed position, b) Both auxiliary tank air blower valves operate normally, and c) Auxiliary tank fuel is included as part of Zero Fuel Weight.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-14-5 ***	Auxiliary Tank Cabin Air Valves (Cont'd)	C	2	0	(M) May be inoperative provided: a) Associated valve(s) is deactivated in closed position, b) Auxiliary tank fuel is included as part of Zero Fuel Weight, and c) Auxiliary tank fuel is considered unusable.
-14-6 ***	Auxiliary Tank Pressure Sensors	C	2	1	One may be inoperative provided auxiliary tank fuel is included as part of Zero Fuel Weight.
		C	2	0	May be inoperative provided: a) Auxiliary tank fuel is included as part of Zero Fuel Weight, and b) Auxiliary tank fuel is considered unusable.
-14-7 ***	Auxiliary Tank Air Blower	C	1	0	(M)(O) May be inoperative deactivated.
-14-8 ***	Auxiliary Tank Air Blower Pressure Sensor	C	1	0	
-14-9 ***	Auxiliary Tank Float Switch	C	1	0	May be inoperative provided: a) Auxiliary FQIS operates normally, and b) Auxiliary tank fuel is included as part of Zero Fuel Weight.
-14-10 ***	Auxiliary Tank Overpressure Monitor System	C	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-14-11 ***	Auxiliary Tank Fuel Quantity Indicating System (Flight Deck)	C	1	0	(M)(O) Except for ER operations, may be inoperative provided: a) Auxiliary tank float switch operates normally, b) CWT quantity indication operates normally, c) Engine fuel flow indications operate normally, d) FMC Calculated fuel quantity operates normally, e) Tank is emptied and serviced with a known quantity of fuel, or measuring stick readings are taken to verify fuel quantity in tank after each refueling, f) FMC is initialized with the known total fuel quantity, and g) Auxiliary tank fuel is included as part of Zero Fuel Weight
		C	1	0	May be inoperative provided: a) Auxiliary tank fuel is included as part of Zero Fuel Weight, and b) Auxiliary tank fuel is considered unusable.
-15-1 ***	Fuel Scavenge Pump (Electric)	C	1	0	(M) May be inoperative deactivated provided center tank remains empty.
		C	1	0	(M) May be inoperative deactivated provided the first 3000 lb (1360 kg) of center tank fuel is included as part of Zero Fuel Weight and is considered unusable.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-15-2 ***	Hydro-mechanical Fuel Scavenge Systems	D	2	0	(M) May be inoperative provided: a) Center tank remains empty, and b) Center tank quantity indication operates normally.
		C	2	0	(M) May be inoperative provided the first 3000 lb (1360 kg) of center tank fuel is included as part of Zero Fuel Weight and is considered unusable. NOTE: With two float valves inoperative open, it will be necessary to deactivate the associated system(s).
1) ***	Without SB 747-28-2255 Incorporated	D	2	1	NOTE 1: With either float valve for one system inoperative open, it may be necessary to deactivate the associated system. NOTE 2: With both float valves for one system inoperative open, it will be necessary to deactivate the associated system unless center tank remains empty.
2)	With SB 747-28-2255 Incorporated or Production Equivalent (PRR 85580-R)	D	2	1	One system may be inoperative provided associated main fuel tank float valve operates normally.
		D	2	1	One system may be inoperative provided associated main fuel tank float valve is inoperative closed.
		D	2	1	(M) One main fuel tank float valve may be inoperative open provided associated system is deactivated.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-16-1	Reserve 2 and 3 Fuel Transfer Valves	C	4	2	(M)(O) One per tank may be inoperative deactivated closed (with reserve tanks fueled) provided: a) Zero Fuel Weight CG limit is 2% MAC forward of the Aft Limit, and b) If fuel in reserve tanks 2 or 3 does not transfer, observe 325 KCAS/0.92M speed limitation for remainder of flight.
1)	Passenger/Combi	C	4	0	(O) May be inoperative provided: a) Reserve tanks 2 and 3 remain empty, and b) Maximum Takeoff Weight is limited to 740,000 lb (335,664 kg).
2)	Freighter	C	4	0	(O) May be inoperative provided: a) Reserve tanks 2 and 3 remain empty, and b) Maximum Takeoff Weight is limited to 785,000 lb (356,070 kg).
-17-1 ***	Horizontal Stabilizer Fuel Isolation Valves	C	4	0	(M)(O) May be inoperative secured closed provided stabilizer tank remains empty.
-21-1	Pressure Fueling System	C	1	0	(M) May be inoperative provided alternate refueling procedures are established and used. NOTE 1: For an inoperative refuel valve indicator light, the associated refuel valve is considered inoperative. NOTE 2: Any function of the Fueling Control Panel that operates normally may be used. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-21-1	Pressure Fueling System (Cont'd)				
1)	Refuel Valves	C	-	0	(M)(O) May be inoperative open provided: a) Alternate refueling procedures are established and used, b) Fuel jettison system is considered inoperative, and c) Stabilizer and auxiliary tanks (if installed) remain empty.
		C	-	0	(M) May be inoperative closed provided: a) Alternate refueling procedures are established and used, and b) For any center tank refuel valve inoperative closed, stabilizer and auxiliary tanks (if installed) remain empty.
2)	Volumetric Top-Off (VTO) Feature	C	1	0	(M) May be inoperative provided alternate refueling procedures are established and used.
3)	Preselect Feature	C	-	0	(M) May be inoperative provided alternate procedures are established and used for refueling associated fuel tank.
4) ***	Horizontal Stabilizer Position Light (Fueling Panel)	C	1	0	(M) May be inoperative provided stabilizer is set at 5 to 7 units of trim for fueling.
5)	VENT Light (Fueling Panel)	C	1	0	(M) May be inoperative provided auxiliary tank overpressure monitor system operates normally.
6)	Fueling Power Control Switch (Fueling Panel)	C	1	0	(M) May be inoperative provided fueling panel is deactivated before each departure.
		C	1	0	(M) May be inoperative provided the fuel control panel indicator test switch operates normally when Refuel POWER Select Switch is used in the BATT position.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-21-2	Center Tank Refueling Valves				Deleted by Revision 13, relief incorporated into item 28-21-1.
-21-3 ***	Center Isolation Valve	C	1	0	(M) May be inoperative secured open.
-21-4 ***	Fueling Receptacle Caps	C	4	0	(M) May be inoperative or missing provided associated refuel adapter valve is verified closed after refueling.
-21-5 ***	Refuel Adapter Valve Handle Extensions/ Stop Assemblies	C	4	0	(M) May be inoperative or missing provided associated refuel adapter valve is verified closed after refueling.
-22-1	Main Tank Boost Pumps				
1)	Main Tank 1 and 4 Boost Pumps	C	4	3	(M)(O) One may be inoperative provided: a) All main tank 2 and 3 boost pumps operate normally, b) Main tanks 1 and 4 transfer valves are verified to operate normally, c) Fuel quantity indicating system for the associated tank operates normally, and d) The following minimum fuel quantities are retained in the associated tank for the flight conditions shown (normal fuel loading, balance and usage requirements still apply): TAKEOFF: 24,254 lb (11,002 kg) LANDING: 4,690 lb (2,127 kg)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					(Continued)
-22-1	Main Tank Boost Pumps (Cont'd)				
1)	Main Tank 1 and 4 Boost Pumps (Cont'd)	C	4	3	(M)(O) One may be inoperative provided: a) Prior to engine start, a minimum of 17,000 lb (7,711 kg) fuel is loaded in the center wing tank and all center wing tank fuel is included as part of Zero Fuel Weight, b) All main tank 2 and 3 boost pumps operate normally, c) Main tanks 1 and 4 transfer valves are verified to operate normally, d) Both center wing tank override/jettison pumps operate normally, e) Fuel quantity indicating system for the associated tank operates normally, f) For takeoff, engines 1 and 4 are manifolded to the center wing tank, and g) A minimum fuel quantity of 4,690 lb (2,127 kg) is retained in the associated tank for takeoff and landing (normal fuel loading balance and usage requirements still apply).

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					(Continued)
-22-1	Main Tank Boost Pumps (Cont'd)				
2)	Main Tank 2 and 3 Boost Pumps	C	4	3	(M)(O) One may be inoperative provided: a) All main tank 1 and 4 boost pumps operate normally, b) All main tank fuel quantity indicating systems operate normally, c) The associated fuel crossfeed valve is deactivated open, d) Remaining fuel crossfeed valves operate normally, e) Associated tank override/jettison pumps are selected on for takeoff, f) Center tank and auxiliary tank (if installed) remain empty, or fuel is included as part of Zero Fuel Weight, g) Horizontal stabilizer tank remains empty, and h) The following minimum fuel quantities are retained in the associated tank for the flight conditions shown (normal fuel loading, balance and usage requirements still apply): LANDING: 8,610 lb (3,905 kg)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					(Continued)
-22-1	Main Tank Boost Pumps (Cont'd)				
2)	Main Tank 2 and 3 Boost Pumps (Cont'd)				
a)	Aft Boost Pumps	C	2	1	(M)(O) One aft boost pump may be inoperative provided: a) All main tank 1 and 4 boost pumps and main tank 2 and 3 fwd boost pumps operate normally, b) Aft override/jettison pump in associated tank operates normally, c) Fuel quantity indicating system for the associated tank operates normally, and d) The following minimum fuel quantities are retained in the associated tank for the flight conditions shown (normal fuel loading, balance and usage requirements still apply): TAKEOFF: 78,390 lb (35,557 kg) LANDING: 8,610 lb (3,905 kg)

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					(Continued)
-22-1	Main Tank Boost Pumps (Cont'd)				
2)	Main Tank 2 and 3 Boost Pumps (Cont'd)				
a)	Aft Boost Pumps (Cont'd)	C	2	1	(M)(O) One aft boost pump may be inoperative provided: a) All main tank 1 and 4 boost pumps and main tank 2 and 3 fwd boost pumps operate normally, b) Fuel quantity indicating system for the associated tank operates normally, c) All engine driven generator systems operate normally, and d) The following minimum fuel quantities are retained in the associated tank for the flight conditions shown (normal fuel loading, balance and usage requirements still apply): TAKEOFF: 78,390 lb (35,557 kg) LANDING: 8,610 lb (3,905 kg)
b)	Fwd Boost Pumps	C	2	1	(M)(O) One fwd boost pump may be inoperative provided:

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					a) All main tank 1 and 4 boost pumps and main tank 2 and 3 aft boost pumps operate normally, b) Fuel quantity indicating system for the associated tank operates normally, and c) The following minimum fuel quantities are retained in the associated tank for the flight conditions shown (normal fuel loading, balance and usage requirements still apply): TAKEOFF: 24,254 lb (11,002 kg) LANDING: 8,610 lb (3,905 kg)
-22-2	Fuel Management Systems (FSMC A/FSMC B)	C	2	1	(M)(O) One card may be inoperative with reserve tanks 2 and 3 fueled provided: a) Stabilizer tank remains empty, b) Zero Fuel Weight CG limit is 4% MAC forward of the Aft Limit, c) If fuel in reserve tanks 2 or 3 does not transfer, observe 325 KCAS/0.92M speed limitation for remainder of flight, and d) Main tanks 2 and 3 fuel quantity indicating systems operate normally.
1)	Passenger/Combi	C	2	1	(M)(O) One card may be inoperative with reserve tanks 2 and 3 empty provided: a) Stabilizer tank remains empty, and b) Maximum takeoff weight is limited to 740,000 lb (335,664 kg).
2)	Freighter	C	2	1	(M)(O) One card may be inoperative with reserve tanks 2 and 3 empty provided maximum takeoff weight is limited to 785,000 lb (356,000 kg).
-22-3	Fuel Crossfeed VALVE Lights	C	4	3	(M) One may be inoperative provided associated valve operates normally.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-22-4 ***	Horizontal Stabilizer Fuel Transfer Signals				
1)	In-Air Signals	C	2	1	(M)(O) One may be inoperative with reserve tanks 2 and 3 fueled provided: a) Main tanks 2 and 3 fuel quantity indicating systems operate normally, b) Stabilizer tank remains empty, c) Zero Fuel Weight CG limit is 4% MAC forward of the Aft Limit, and d) If fuel in reserve tanks 2 or 3 does not transfer, observe 325 KCAS/0.92M speed limitation for remainder of flight.
		C	2	1	(M) One may be inoperative with reserve tanks 2 and 3 empty provided: a) Stabilizer tank remains empty, and b) Maximum takeoff weight is limited to 740,000 lb (335,664 kg).
2)	Flaps-Retracted Signals	C	2	1	(M) One may be inoperative provided Stabilizer Tank remains empty.
3)	Stabilizer Pump Switch-Position Signals	C	2	0	(M) May be inoperative provided Stabilizer Tank remains empty.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-22-5	Fuel Crossfeed Valves				
1)	Fuel Crossfeed Valves 1 and 4	C	2	1	(M)(O) One may be inoperative provided: a) Valve is secured open, b) All main tank fuel quantity indicating systems operate normally, and c) Crossfeed Valves 2 and 3 operate normally.
2)	Fuel Crossfeed Valves 2 and 3	C	2	1	(M)(O) One may be inoperative provided: a) Valve is secured open, b) All main tank fuel quantity indicating systems operate normally, c) Crossfeed Valves 1 and 4 operate normally, d) Center tank and auxiliary tank (if installed) remain empty, or fuel is included as part of Zero Fuel Weight, and e) Horizontal stabilizer tank remains empty.
-25-1	APU Fuel (DC) Pump	C	1	0	(M) May be inoperative deactivated.
-25-2	APU Fuel Valve	C	1	0	(M) (O) May be inoperative closed.
-26-1	Manually Operated Defuel Valves	C	2	0	(M) May be inoperative secured closed.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-31-1	Fuel Jettison System	C	1	0	(M)(O) All components may be inoperative provided: a) Airplane performance requirements are satisfied, including Approach Climb and Landing Climb capability, b) Jettison nozzle valves are secured closed, and c) Main tanks 1 and 4 transfer valves are secured closed, and d) All main tank 1 and 4 boost pumps operate normally. (Continued)
-31-1	Fuel Jettison System (Cont'd)				
1)	Center Wing Tank Jettison/Transfer Valves	C	2	0	(M) May be inoperative secured closed provided associated inboard main tank jettison/transfer valve(s) operates normally.
a)	Passenger/Combi	C	2	0	(M)(O) May be inoperative provided: a) Valve(s) is secured open, b) Both jettison nozzle valves operate normally, and c) Stabilizer tank remains empty.
b)	Freighter	C	2	0	(M) May be inoperative provided: a) Valve(s) is secured open, and b) Both jettison nozzle valves operate normally.
2)	Main Tanks 2 and 3 Jettison/Transfer Valves	C	2	0	(M) May be inoperative secured closed provided associated center wing tank jettison/transfer valve(s) operates normally.
a)	Passenger/Combi	C	2	0	(M)(O) May be inoperative provided: a) Valve(s) is secured open, b) Both jettison nozzle valves operate normally, and c) Stabilizer tank remains empty.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
b)	Freighter	C	2	0	(M) May be inoperative provided: a) Valve(s) is secured open, and b) Both jettison nozzle valves operate normally.
3)	Main Tanks 1 and 4 Transfer Valves	C	2	0	(M) May be inoperative secured closed provided: a) Required fuel to be jettisoned does not deplete inboard main tank below the quantity in the outboard main tanks, and b) Both boost pumps for associated tank operate normally. (Continued)
-31-1	Fuel Jettison System (Cont'd)				
4)	Fuel Jettison Control Cards	C	2	1	(M) One may be inoperative provided the remaining FJCC is verified to operate normally before each departure.
-31-2	Main Tanks 2 and 3 Override/Jettison Pumps	C	4	3	(M) One forward or aft override/jettison pump may be inoperative deactivated provided, for an aft override/jettison pump, all engine driven generator systems operate normally.
		C	4	3	(M) One forward or aft override/jettison pump may be inoperative deactivated provided, for an aft override/jettison pump, both associated main tank boost pumps operate normally.
		C	4	2	(M) One forward or aft override/jettison pump per tank may be inoperative deactivated provided: a) For an inoperative aft override/jettison pump, all engine driven generator systems operate normally, and b) All Main Tanks 2 and 3 boost pumps operate normally.
-31-3 ***	Horizontal Stabilizer Pumps	C	2	0	(M)(O) May be inoperative deactivated provided stabilizer tank remains empty.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-31-4	Center Tank Override Jettison Pumps	C	2	1	(M)(O) May be inoperative deactivated provided: a) Horizontal stabilizer tank remains empty, b) With center tank fueled, fuel quantity remaining in main wing tanks is adequate to reach a suitable airport if remaining center tank pump fails at any time, c) Center tank and auxiliary tank (if installed) fuel is included as part of Zero Fuel Weight, and d) Center tank quantity indication operates normally. (Continued)
-31-4	Center Tank Override Jettison Pumps (Cont'd)	C	2	0	(M)(O) May be inoperative deactivated provided: a) Horizontal stabilizer tank remains empty, b) Center tank and auxiliary tank (if installed) fuel is included as part of Zero Fuel Weight, and c) Center tank and auxiliary tank (if installed) fuel is considered unusable.
-41-1	Main Tank Fuel Quantity Indicating Systems (Flight Deck)	C	4	3	(M)(O) Except for ER operations, one may be inoperative provided: a) FMC is initialized with the known total fuel quantity, b) Engine fuel flow indications operate normally, c) FMC calculated fuel quantity operates normally, d) Tank is emptied and serviced with a known quantity of fuel, or measuring stick readings are taken to verify fuel quantity in tank with inoperative indicator after each refueling, e) All boost pumps for the associated tank operate normally, f) If failed indicator is for main tank 2 or 3, management and jettison single point

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					sensor systems for both tanks operate normally, g) Remaining individual tank quantity indications are available, h) Appropriate procedures are used enroute to identify engine fuel leaks if suspected or confirmed, and i) For Combi, if ballast fuel is carried, stabilizer tank remains empty and CWT fuel in excess of ballast fuel may not be carried.
-41-2	Single Point Sensor Systems				
1) ***	Center Tank Sensors	C	2	1	One may be inoperative provided center tank fuel quantity indicating system operates normally.
		C	2	0	(O) May be inoperative provided stabilizer tank remains empty.
2)	Main Tanks 2 and 3 Sensors (Reserve Transfer)	C	2	1	One may be inoperative provided main tanks 2 and 3 fuel quantity indicating systems operate normally.
		C	2	0	(O) May be inoperative with reserve tanks 2 and 3 fueled provided: a) Main tanks 2 and 3 fuel quantity indicating systems operate normally, b) Zero Fuel Weight CG limit is 4% MAC forward of the Aft Limit, and c) If fuel in reserve tanks 2 or 3 does not transfer, observe 325 KCAS/0.92M speed limitation for remainder of flight.
a)	Passenger/Combi	C	2	0	(O) May be inoperative with reserve tanks 2 and 3 empty provided maximum takeoff weight is limited to 740,000 lb (335,664 kg).
b)	Freighter	C	2	0	(O) May be inoperative with reserve tanks 2

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					and 3 empty provided maximum takeoff weight is limited to 785,000 lb (356,000 kg).
3)	Main Tanks 2 and 3 Sensors (Main 1 and 4 Jettison Transfer)	C	2	1	One may be inoperative provided main tanks 2 and 3 fuel quantity indicating systems operate normally.
-41-3	Total Fuel Quantity Indication	C	1	0	(M)(O) Except for ER operations, may be inoperative provided: a) FMC is initialized with the known total fuel quantity, b) Engine fuel flow indication and FMC Calculated fuel quantity operates normally, c) Both FMCs operate normally, and d) For Combi, if ballast fuel is carried, stabilizer tank remains empty and CWT fuel in excess of ballast fuel may not be carried.
-41-4	Center Tank Fuel Quantity Indicating System (Flight Deck)	C	1	0	(O) Except for ER operations, may be inoperative provided: a) Center tank, stabilizer tank and auxiliary tank (if installed) remain empty, and b) FMC is initialized with the known total fuel quantity.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-41-5	Reserve Tank Fuel Quantity Indicating Systems (Flight Deck)	C	2	0	(M)(O) Except for ER operations, may be inoperative with reserve tanks 2 and 3 fueled provided: a) Tank is emptied and serviced with a known quantity of fuel, or measuring stick readings are taken to verify quantity in tank with inoperative indicator after each refueling, b) FMC is initialized with the known total fuel quantity, c) Engine fuel flow indication and FMC Calculated fuel quantity operates normally, d) Remaining individual tank quantity indications are available, and e) For Combi, if ballast fuel is carried, stabilizer tank remains empty and CWT fuel in excess of ballast fuel may not be carried.
1)	Passenger/Combi	C	2	0	(O) Except for ER operations, may be inoperative with reserve tanks 2 and 3 empty provided: a) Takeoff weight is limited to a maximum of 740,000 lb (335,664 kg), b) Remaining individual tank quantity indications are available, and

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
					c) For Combi, if ballast fuel is carried, stabilizer tank remains empty and CWT fuel in excess of ballast fuel may not be carried.
2)	Freighter	C	2	0	(O) May be inoperative with reserve tanks 2 and 3 empty provided: a) Takeoff weight is limited to a maximum of 785,000 lb (356,000 kg), and b) Remaining individual tank quantity indications are available.
-41-6	Wing Fueling Station Quantity Indicating System	C	1	0	(M) May be inoperative provided preselect refueling is not used.
-41-7 ***	Horizontal Stabilizer Tank Fuel Quantity Indicating System (Flight Deck)	C	1	0	(M)(O) Except for ER operations, may be inoperative provided: a) Stabilizer tank remains empty, b) Remaining individual tank quantity indications are available, c) FMC is initialized with the known total fuel quantity, d) Engine fuel flow indication and FMC Calculated fuel quantity operates normally, e) Horizontal stabilizer REU is deactivated (removed), and f) For Combi, if ballast fuel is carried, CWT fuel in excess of ballast fuel may not be carried.
-42-1	Fuel Pump Low PRESS Lights	C	14	-	One PRESS light may be inoperative for each tank containing fuel. NOTE: Not required for empty tanks.
-42-2 ***	Stabilizer Fuel Pump Low PRESS Lights	C	2	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28 FUEL					
-43-1	Fuel Temperature Indication (Main Tank #1)	C	-	1	
		C	-	0	May be inoperative provided Total Air Temperature (TAT) or Static Air Temperature (SAT) to (TAT) conversion is substituted as an indication of fuel temperature.
-44-1	Measuring Sticks	C	-	0	May be inoperative provided fuel quantity is verified by other means.
-44-2 ***	Auxiliary Tank Electronic Fuel Level Indicator	C	1	0	May be inoperative provided fuel quantity is verified by other means.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
29 HYDRAULIC POWER					
-11-1	Engine Driven Hydraulic Pump Systems	C	4	3	(M)(O) One engine pump system, including the pump and/or associated plumbing, may be inoperative provided: a) All Demand pumps operate normally, b) Demand pump for the associated hydraulic system remains ON, and c) Associated pump is operated in the depressurized mode, with fluid supply and pump case return functioning normally.
		C	4	3	(M)(O) One engine pump system, including the pump and/or associated plumbing, may be inoperative provided: a) All Demand pumps operate normally, b) Demand pump for the associated hydraulic system remains ON, and c) Associated pump is deactivated,
		C	4	3	(M)(O) One engine pump system, including the pump and/or associated plumbing, may be inoperative provided: a) All Demand pumps operate normally, b) Demand pump for the associated hydraulic system remains ON, and c) Associated pump is removed and a cover plate installed.
1)	Pump Depressurization Function	C	4	3	One pump depressurization function may be inoperative.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
29 HYDRAULIC POWER					
-11-1	Engine Driven Hydraulic Pump Systems (Cont'd)				
2)	Supply Shutoff Valves	C	4	3	(M)(O) One Supply shutoff valve may be inoperative closed provided: a) All Demand pumps operate normally, b) Demand pump for the associated hydraulic system remains ON, and c) Associated pump is deactivated
		C	4	3	(M)(O) One supply shutoff valve may be inoperative closed provided: a) All Demand pumps operate normally, b) Demand pump for the associated hydraulic system remains ON, and c) Associated pump is removed and a cover plate installed.
-11-2	Demand Hydraulic Pumps				
1)	No. 1 or No. 4 Demand Pump Systems	C	2	1	(M)(O) One may be inoperative deactivated provided: a) VMCG is increased by 5 kts., b) Takeoff performance must be in accordance with the AFM appendix for landing gear extended, c) Takeoff obstacle clearance must be dependent upon flaps remaining in the takeoff position, and d) Demand pumps 2 and 3 operate normally.
2)	No. 2 or No. 3 Demand Pump Systems	C	2	1	(M) One may be inoperative deactivated provided demand pumps 1 and 4 operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
29 HYDRAULIC POWER					
-11-3	Demand Pump Selector				
1)	AUTO Position	C	4	0	(M)(O) May be inoperative provided: a) If the affected pump is either No. 1 and/or No. 4, it remains ON during takeoff and landing, and b) Verify OFF and ON positions operate normally.
		C	4	3	One may be inoperative provided associated demand pump is inoperative.
2)	ON Position	C	4	2	(M) Two may be inoperative provided: a) Verify AUTO and OFF function of the associated demand pump operate normally, and b) Associated EDP operates normally.
		C	4	3	One may be inoperative provided associated demand pump is inoperative.
-18-1	Reservoir Servicing Gauge	D	1	0	
-21-1	Auxiliary Pump (AC Motor Pump) System(s)	C	-	0	(M)(O) May be inoperative provided Demand Pump Selector is properly positioned.
-31-1	HYD RSVR PRES Messages	C	4	0	(M) May be inoperative provided associated reservoir pressurization is verified to operate normally once each flight day.
-32-1	Hydraulic System Temperature Indications	C	4	3	(M) One may be inoperative provided the following indications are verified to operate normally: a) Associated system pressure indication, and b) Associated hydraulic quantity indication.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
29 HYDRAULIC POWER					
-32-1	Hydraulic System Temperature Indications (Cont'd)	C	4	3	(M) One may be inoperative provided the following indications are verified to operate normally: a) Associated system pressure indication, and b) Associated hydraulic "SYS FAULT" light.
-33-1	Hydraulic Quantity Indications	C	4	2	(M) May be inoperative provided: a) Associated reservoir level is verified normal before each departure, b) Associated system pressure indication is verified to operate normally, and c) Associated hydraulic temperature indication is verified to operate normally.
		C	4	2	(M) May be inoperative provided: a) Associated reservoir level is verified normal before each departure, b) Associated system pressure indication is verified to operate normally, and c) Associated hydraulic SYS FAULT light is verified to operate normally,
		B	4	0	(M) May be inoperative provided: a) Associated reservoir level is verified normal before each departure, b) Associated system pressure indication is verified to operate normally, and c) Associated hydraulic temperature indication is verified to operate normally.
		B	4	0	(M) May be inoperative provided: a) Associated reservoir level is verified normal before each departure, b) Associated system pressure indication is verified to operate normally, and c) Associated hydraulic SYS FAULT light is verified to operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
29 HYDRAULIC POWER					
-34-1	Pump Low Pressure Indication Systems				
1)	Pump LOW PRESS Lights	C	8	4	(M) One light per hydraulic system may be inoperative provided: a) Associated system pressure indication operates normally, and b) Associated pump operates normally before each departure.
2)	Engine Driven Pump Pressure Switches	C	4	3	(M) One may be inoperative provided: a) Associated demand pump AUTO function is considered inoperative, b) Associated system pressure indication operates normally, c) Associated pump operates normally before each departure, and d) Associated demand pump indication system operates normally.
3)	Demand Pump Pressure Switches	C	4	3	(M) One may be inoperative provided: a) Associated system pressure indication operates normally, b) Associated pump operates normally before each departure, and c) Associated engine driven pump indication system operates normally.
-34-2	Hydraulic SYS FAULT Lights	C	4	3	(M) One may be inoperative provided the following indications are verified to operate normally: a) Associated system pressure indication, and b) Associated hydraulic quantity indication.
		C	4	3	(M) One may be inoperative provided the following indications are verified to operate normally: a) Associated system pressure indication, and b) Associated System Temperature Indication.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
30 ICE AND RAIN PROTECTION					
-00-1	Windshield Air (Defog) System Controls	C	2	0	(M) May be inoperative provided defogging valve(s) is secured ON.
-11-1	Wing Anti-Ice Valves	C	2	0	(M) May be inoperative secured closed provided airplane is not operated in known or forecast icing conditions.
-11-2 ***	Wing Anti-Ice VALVE Light or WAI Indications	C	-	0	(M) May be inoperative provided associated valve is verified to operate normally before departure in known or forecast icing conditions.
		C	-	0	May be inoperative provided the associated wing anti-ice valve is inoperative.
-21-1	Nacelle Anti-Ice Valves	C	4	3	(M) One may be inoperative secured closed provided airplane is not operated in known or forecast icing conditions.
		C	4	3	(M)(O) One may be inoperative open provided: a) High pressure shutoff valve is secured closed, b) Bleed air switch for associated engine remains OFF except for engine start, c) Associated engine nacelle anti-ice switch is operated manually, d) Bleed systems on the remaining engines operate normally, e) Left and right ISLN valves remain open for takeoff and during flaps operation, f) A minimum of 70% N1 (60% N1 for RR) is maintained at or above10, 000 ft. MSL, or 55% N1 is maintained below 10,000 ft. MSL on the associated engine while in icing conditions, g) For GE, associated engine thrust reverser is deactivated.

(Continued)

SYSTEM & SEQUENCE NUMBERS	1. ITEM		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
30 ICE AND RAIN PROTECTION					
-21-1	Nacelle Anti-Ice Valves (Cont'd)				h) For PW & GE, associated PRV operates normally, i) For RR, associated FWSOV operates normally, and j) Appropriate performance adjustments are applied.
-21-2	Nacelle Anti-Ice VALVE Lights or NAI Indications	C	4	3	(M) One may be inoperative provided associated valve is verified to operate normally before departure in known or forecast icing conditions.
		C	4	3	One may be inoperative provided the associated nacelle anti-ice valve is inoperative.
-21-3	Engine Cowl Overheat indications (RR)	C	4	3	(M)(O) One may be inoperative provided: a) Associated HPSOV is secured in the closed position, b) Associated nacelle anti-ice valve operates normally, c) A minimum of 60% N1 (55% below 10,000 feet MSL) is maintained on the associated engine in icing conditions, d) L and R ISLN valves are open for takeoff and when flaps are operated, e) Remaining engine bleed systems operate normally, and f) Associated ENG COWL OVHT card is deactivated (removed) from the fire detection card file.
-31-1	Pitot-Static Probe Heater Systems	B	4	3	Heater elements in one probe may be inoperative provided airplane is not operated in visible moisture or in known or forecast icing conditions. NOTE: For probe heat to be considered operative, both heater elements in that probe must operate normally.

SYSTEM & SEQUENCE NUMBERS	1. ITEM		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
30 ICE AND RAIN PROTECTION					
-31-2	Angle of Attack Sensor Heater Systems	C	2	1	One may be inoperative provided airplane is not operated in known or forecast icing conditions.
-31-3	Temperature Probe Heater Systems	C	2	1	
-41-1	Window Heat INOP Lights	C	2	1	One may be inoperative provided associated heater operates normally.
-41-2	Flight Deck Window Heater Systems (No. 1 & No. 2)				
1)	Passenger, Combi and Freighter with Draw-Through Smoke Detection System	C	4	3	One window heater system (No. 1 or No. 2) may be inoperative provided AFM limitations are followed.
2)	Freighter without Draw-Through Smoke Detection System	C	4	3	One window heater system (No. 1 or No. 2) may be inoperative provided: a) Flight Deck Vent Fan operates normally, and b) AFM limitations are followed.
-41-3	Flight Deck Window Heater Systems (No. 3)	C	2	0	(M) May be inoperative provided affected No. 3 window heat circuit is deactivated.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
30 ICE AND RAIN PROTECTION					
-42-1	Windshield Wipers	C	2	0	May be inoperative provided the airplane is not operated in known or forecast precipitation within 5 statute miles of the airport of departure or intended landing.
1)	Low Speed	C	2	0	May be inoperative provided associated high speed function operates normally.
2)	High Speed	C	2	1	One may be inoperative provided associated low speed function operates normally.
		C	2	0	May be inoperative provided: a) Both low speed functions operate normally, and 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.
3) ***	Intermittent	D	2	0	
-43-1 ***	Rain Repellant Systems	D	2	0	
-44-1	Windshield Washer Systems	C	2	0	

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
30 ICE AND RAIN PROTECTION					
-71-1	Waste Water Drain Heater System(s)	C	3	0	(M) May be inoperative provided: a) Water supply to associated lavatory, galley and service center basin(s) is secured off, and b) Associated lavatory, galley and service center basin(s) is not used.
		C	3	0	May be inoperative provided: a) Water supply to associated galley and service center basin(s) is not used, b) Associated lavatory, galley and service center basin(s) is not used, c) Associated lavatory door is locked closed and placarded, INOPERATIVE – DO NOT ENTER, and d) Lavatory is used only by crewmembers. NOTE: These provisos are not intended to prohibit lavatory use or inspections by crewmembers.
-81-1 ***	Ice Detection System	C	1	0	(M)(O) May be inoperative deactivated provided nacelle and wing anti-ice systems are operated manually.
-81-2 ***	Auto Nacelle Anti-Ice	C	1	0	Dispatch relief moved to item 30-81-1, Revision 19.
-81-3 ***	Auto Wing Anti-Ice	C	1	0	Dispatch relief moved to item 30-81-1, Revision 19.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
31 INDICATING/RECORDING SYSTEMS					
-25-1	Clock	C	2	1	One may be inoperative at either pilot's or copilot's station.
-31-1	Flight Data Recorder (FDR) System (Includes FDR Function of Combined Voice and Flight Data Recorder (CVFDR)	C	-	1	Any in excess of those required by 14 CFR may be inoperative.
		A	-	0	May be inoperative provided: a) Cockpit Voice Recorder (CVR) operates normally, b) Airplane is not dispatched from a designated airport as listed in the operator's MEL unless: 1) The FDR failure occurs after pushback but prior to takeoff, or 2) The FDR repair was attempted but was not successful. c) In those cases where repair is attempted but not successful, the aircraft may be dispatched on a flight or series of flights until the next designated airport where repair must be accomplished prior to dispatch, and d) Repairs are made within three flight days.
1)	FDR Recording Parameters required by 14 CFR	A	-	-	Up to three (3) recording parameters may be inoperative provided: a) Cockpit Voice Recorder (CVR) operates normally, and b) Repairs are made within 20 calendar days.
2)	FDR Recording Parameters not required by 14 CFR	A	-	-	May be inoperative provided repairs are made prior to the completion of the next heavy maintenance visit.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
31 INDICATING/RECORDING SYSTEMS					
-31-2 ***	Quick Access Recorder (QAR) System	D	1	0	
-35-1 ***	Aircraft Condition Monitoring System (ACMS)	D	1	0	
-41-1 ***	Weight and Balance Indication System	D	-	0	
-51-1	Master Caution/Warning Systems				
1)	Master Warning Lights (Pilot's Glare Shield)	C	2	1	One may be inoperative provided master warning aural systems and all discrete warning lights operate normally.
2)	Master Caution Lights (Pilot's Glare Shield)	C	2	1	One may inoperative provided master caution aural systems and all discrete caution lights operate normally.
3)	Aural Warning Speaker Systems	C	2	1	One may inoperative provided Master Warning, Master Caution and all discrete caution lights operate normally.
-51-2	MAWEA ID Card	C	1	0	NOTE: ACARS will be inoperative.
-61-1	EICAS Lower Integrated Display Unit (IDU)	C	1	0	(M) May be inoperative provided it is verified that EICAS can be switched to an alternate IDU (in case of enroute failure of the EICAS Upper IDU).

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
31 INDICATING/RECORDING SYSTEMS					
-61-2	EFIS Control Panels	C	2	1	(M)(O) One may be inoperative deactivated provided left and right CDU EFIS control functions are verified to operate normally.
-61-3	EICAS Display Select Panel	C	1	0	(M)(O) May be inoperative provided: a) Left and right CDU EICAS control functions are verified to operate normally, and b) Individual fuel quantity indications required for dispatch operate normally.
-61-4	EICAS Status Messages	C	-	0	(M)(O) May be inoperative provided associated equipment is verified to operate normally.
		C	-	0	(M)(O) May be inoperative provided dispatch deviations for associated equipment are observed.
-61-5	EICAS Synoptic Displays	C	6	0	May be inoperative provided individual fuel quantity indications required for dispatch operate normally.
-61-6	EFIS/EICAS Interface Units (EIU)	B	3	2	(M) Center or right EIU may be inoperative provided: a) EIU Instrument Source Selector is verified to operate normally, and b) EICAS EIU Selector is verified to operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
32 LANDING GEAR					
-09-1	Nose Gear Squat Sensor System				Deleted, Revision 15.
-10-1	Main Gear Wheel Tiebolts	A	-	-	(M) 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 tiebolts, and d) Operations are limited to five departures before repairs are made.
-11-1 ***	Landing Gear Strut Pressure Indicators	D	-	0	(M) May be inoperative provided landing gear strut is checked for proper inflation and extension.
-30-1	Landing Gear Retracting System	C	1	0	(M)(O) May be partially or completely inoperative provided: a) Inoperative components are properly secured, and b) Airplane is operated in accordance with the appropriate AFM gear down appendix.
-31-1	Landing Gear Latch Solenoid	C	1	0	(M)(O) May be inoperative provided: a) Solenoid is in the latched position, and b) Override mechanism operates normally.
-32-1	Wing Gear Uplock Bungee Springs	B	4	3	(M)(O) One may be broken or missing provided gear handle remains UP after gear retraction.
-33-1	Body Gear Uplock Bungee Springs	B	4	3	(M)(O) One may be broken or missing provided gear handle remains UP after gear retraction.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
32 LANDING GEAR					
-41-1	Wheel Brakes	C	16	14	(M)(O) One or two brakes may be deactivated with a deactivation tool provided performance complies with AFM for two brakes deactivated.
		C	16	14	(M)(O) One or two brakes may be deactivated by capping the brake line provided: a) Takeoff and landing performance complies with AFM, both for Gear Down dispatch and for two brakes deactivated, and b) After takeoff, gear remains down for two minutes before retraction.
		C	16	14	(M)(O) One or two brakes may be deactivated by removing the brake(s) and capping the lines provided: a) Takeoff and landing performance complies with AFM, both for Gear Down dispatch and for two brakes deactivated, b) After takeoff, gear remains down for two minutes before retraction, and c) If inoperative brake(s) are on wheels other than No. 1, 2, 13, or 14, one forward and one aft brake on the same side must be removed to maintain a balanced truck, or if inoperative brake(s) is on wheels No. 1, 2, 13, or 14, one brake on each affected truck may be removed.
-41-2	Brake Accumulator Pressure Indicator (In Wheel Well)	C	1	0	May be inoperative provided flight deck indication operates normally.
-41-3	HYD BRAKE PRESS Indicator (Flight Deck)	C	1	0	(M) May be inoperative provided: a) Brake accumulator charge is verified normal once each flight day, and b) Brake source discrete light operates normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
32 LANDING GEAR					
-41-4	Inflight Wheel Braking System	C	1	0	(O) May be inoperative provided: a) Takeoff performance is based on landing gear extended, and b) After takeoff, landing gear remains extended for a minimum of two minutes before retraction.
-41-5	BRAKE SOURCE Light	C	1	0	
-42-1	Antiskid System	C	1	0	(M)(O) May be inoperative provided operations comply with AFM antiskid inoperative procedures and performance data.
1)	Control Channels	C	16	14	(M)(O) Antiskid control channels for one or two brakes may be inoperative provided: a) The affected brakes are deactivated, and b) AFM performance decrements are applied for the selected procedure.
2)	Wheelspeed Transducers	C	16	14	(M)(O) One transducer in a locked-wheel protection pair (fore & aft wheels) may be inoperative provided performance complies with AFM for two brakes deactivated.
		C	16	14	(M)(O) May be inoperative provided: a) The affected brakes are deactivated, and b) AFM performance decrements are applied for the selected procedure.
-42-2	Alternate Antiskid Valves	C	8	7	(M)(O) One valve (affecting two wheels) may be inoperative provided: a) Both of the associated brakes are deactivated by capping the supply pressure hydraulic line, and b) AFM performance decrements are applied.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
32 LANDING GEAR					
-42-3	Autobrake System	C	1	0	(M) May be inoperative provided: a) Autobrake selector remains in the OFF position, b) Autobrake solenoid valve is verified closed, and c) Approach minimums do not require its use.
		C	1	0	(M) May be inoperative provided: a) Autobrake selector remains in the OFF position, b) Autobrake pressure control module is deactivated, and c) Approach minimums do not require its use.
-42-4	Torque Limiter System				
1)	Torque Limiter Control	C	16	14	(M)(O) Torque limiter control for two brakes on one truck may be inoperative provided: a) Associated brakes are considered inoperative, b) Appropriate performance adjustments are applied, and c) BRAKE LIMITER indication is not displayed.
		C	16	10	(M)(O) May be inoperative provided: a) Two torque limiters and associated brakes per truck operate normally, b) For two torque limiters inoperative on the same truck, at least one associated brake must be considered inoperative, and c) Appropriate performance adjustments are applied.
-44-1	Parking Brake Valve (Antiskid Return Line)				Deleted prior to Revision 9.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
32 LANDING GEAR					
-44-2 ***	Brake Status Light(s) (On Nose Gear)	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require their use.
-45-1	Nose Wheel Snubber Pads	C	2	0	
-46-1	Brake Temperature Monitoring System (BTMS)	C	1	0	(O) May be inoperative provided AFM Maximum Quick Turnaround Weight limitations are observed.
-47-1 ***	Brake Cooling Fan Systems	D	16	0	(M) May be inoperative provided cooling fan wheel mounted shroud assembly is deactivated (removed) from the associated wheel.
		D	16	0	(O) May be inoperative provided: a) Brake Temperature Monitoring System operates normally, and b) Brake Temperature Monitoring System EICAS indications are within acceptable brake cooling schedule limits prior to engine start.
-48-1 ***	Tire Pressure Indication System	C	1	0	(M) May be inoperative provided alternate procedures are established and used.
		D	1	0	(M) May be inoperative deactivated provided procedures do not require its use.
1)	Tire Pressure Sensors	C	18	0	(M) May be inoperative provided: a) Associated sensor(s) is deactivated, and b) Alternate procedures are established and used.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
32 LANDING GEAR					
-51-1	Rudder Pedal Nose Wheel Steering System	C	1	0	(M)(O) May be inoperative provided: a) Other systems are not impaired, and b) Landing approach minimums do not require automatic rollout guidance system.
-53-1	Body Gear Steering System	C	1	0	(M)(O) May be inoperative provided: a) Body gear steering actuators are verified locked, and b) Body gear steering is deactivated.
-53-2	Body Gear Steering Indication System	C	1	0	(M)(O) May be inoperative provided: a) Body gear steering actuators are verified locked, b) Body gear steering is deactivated, and c) Body gear steering actuator integrity is verified before each departure.
-61-1	Body and Wing Landing Gear Uplock Position Sensors	B	8	7	(M)(O) One may be inoperative provided the associated Primary and Alternate Landing Gear Door Warning Sensors are verified to operate normally.
		B	8	0	(M)(O) May be inoperative provided: a) Associated landing gear and its symmetric pair are secured in the down and locked position, and b) Dispatch is in accordance with appropriate AFM Gear Down appendix.
-61-2	Landing Gear Door Warning Sensors	C	10	5	(M)(O) One per door may be inoperative provided the associated operative sensor is verified to function correctly.
-61-3	Wing Landing Gear Downlock Position Sensors	B	4	0	(M)(O) May be inoperative provided: a) Both wing gear are secured in the down and locked position, and b) Dispatch is in accordance with appropriate AFM Gear Down appendix.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33 LIGHTS					
-11-1	Flight Compartment and Instrument Lighting System	C	-	-	Individual lights may be inoperative provided remaining lights are: a) Left and right flight deck dome lights operate normally, b) Sufficient to clearly illuminate all required instruments, controls, and other devices for which it is provided, c) Positioned so that direct rays are shielded from flight crewmembers eyes, and d) Lighting configuration and intensity is acceptable to the flight crew. NOTE: Individuals buttons/switch lights and/or annunciations/indications are excluded from this relief.
-12-1	Storm Override Switch	C	1	0	May be inoperative provided associated lights operate normally.
-18-1	Master Dim and Test System	B	1	0	Dim function may be inoperative provided: a) Test and Bright functions operate normally, and b) Light intensity is acceptable to the flight crew.
		B	1	0	Test function of individual light may be inoperative provided: a) Dim or Bright function operates normally, and b) Light intensity is acceptable to the flight crew.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33 LIGHTS					
-21-1	Cabin Interior Illumination System				
1)	Passenger and Combi Configurations				
a)	With Incandescent Floor Proximity Emergency Escape Path Marking System	C	-	-	Individual lights may be inoperative provided remaining lighting is sufficient for cabin attendants/cargo couriers to perform their duties.
b)	With Photoluminescent Floor Proximity Emergency Escape Path Marking System	C	-	-	Individual lights may be inoperative provided: a) Remaining lighting is sufficient for cabin attendants/cargo couriers to perform their duties, and b) Remaining lighting is sufficient to charge the Photoluminescent Floor Proximity Emergency Escape Path Marking System by complying with approved minimum acceptable lighting levels as specified in one of the following documents: 1. FAA engineering approval letter, 2. FAA approved report of the Type Design holder, 3. Limitations and Conditions section of the applicable Supplemental Type Certificate (STC), or 4. An FAA approved report incorporated in the Master Drawing List for the applicable STC.
2)	Cargo Configuration	D	-	-	Individual lights may be inoperative provided remaining lighting is sufficient for cabin attendants/cargo couriers to perform their duties.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33 LIGHTS					
-24-1	Passenger Lighted Information Signs (No Smoking/Fasten Seat Belt/Return to Seat)	C	-	-	(M) May be inoperative provided: a) Associated passenger seat, lavatory or crew rest area bunk is not occupied from which a passenger lighted information sign is not readily legible, and b) Associated seat, lavatory or bunk must be blocked and placarded - DO NOT OCCUPY. NOTE: These conditions are not intended to prohibit lavatory use or inspections by crewmembers.
		C	-	-	(O) May be inoperative and associated passenger seat(s), lavatories or crew rest areas may be occupied provided: a) Passenger Address System operates normally, and b) PA system is used to notify passengers and cabin crew when associated sign(s) are placed on or off.
1)	Aural Tone System	C	1	0	
2)	Flight Deck Automatic Function	C	-	0	(O) Automatic function may be inoperative provided: a) Manual Control function operates normally, and b) Procedures for its use are established and used.
3)	All Cargo, Supernumerary/ Courier Area Lighted Information Signs	C	-	-	(O) May be inoperative provided alternate procedures are established and used to notify supernumeraries/couriers when associated sign(s) are placed on or off.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33 LIGHTS					
-25-1 ***	Sterile Flight Compartment Light System	D	1	0	(O) May be inoperative provided alternate procedures are established and used.
-31-1	Wheel Well, Cargo Compartment, Servicing, Exterior Cargo Loading Area, and Electrical Equipment Center Lights Systems	C	-	0	
-34-1 ***	Main Deck Cargo Signaling System (SB 747-33-2307 or Production Equivalent)	C	1	0	May be inoperative provided access to main deck cargo compartment is prohibited in flight.
		C	1	0	May be inoperative provided: a) No four adjacent main deck ceiling lights may be inoperative, and b) No four adjacent main deck speakers may be inoperative
-35-1 ***	Main Cargo Deck Crew Alerting System	C	1	0	May be inoperative provided access to main cargo compartment is prohibited in flight.
		C	1	0	(O) May be inoperative provided alternate procedures are established and used.
-41-1	Wing Illumination Lights	C	2	0	(O) May be inoperative provided ground de-icing procedures do not require their use.
-42-1 ***	Taxi Lights	C	-	0	
-42-2	Landing Lights	C	4	2	One light per side may be inoperative.
		C	4	0	May be inoperative for day operations.
1)	Dim Position	C	4	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33 LIGHTS					
-42-3	Runway Turn-Off Lights	C	2	0	May be inoperative provided both landing lights on the same side of airplane as inoperative turn-off light(s) operate normally.
		C	2	0	May be inoperative for day operations.
-43-1	Position Lights (Wing Tips and Tail)	C	6	3	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, and c) One stationary white tail bulb.
		C	6	0	May be inoperative for day operations.
-44-1	Anti-Collision Light Systems	C	-	0	May be inoperative for day operations.
1)	Red Upper and Lower Fuselage Beacon Lights	C	2	0	May be inoperative for night operations provided the White Tail and Wing Tip Strobe lights operate normally.
		C	2	0	May be inoperative for night operations provided the White Upper and Lower Fuselage Strobe lights operate normally.
2)	White Tail and Wing Tip Strobe Lights (Except A/C with STC ST9764SC-D)	C	3	0	May be inoperative for night operations provided the Red Upper and Lower Fuselage Beacon lights operate normally.
		C	3	0	May be inoperative for night operations provided the White Upper and Lower Fuselage Strobe lights operate normally.
3) ***	White Upper and Lower Fuselage Strobe Lights	D	2	0	
-45-1 ***	LOGO Light System	D	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33 LIGHTS					
-51-1	Interior Emergency Lighting System	C	1	-	A random 25% of lights may be inoperative provided: a) Inoperative lights are not adjacent, b) At least two of the three lights at each entry door operate normally, and c) Flight deck light and one upper deck door light for an operative door/slide operate normally at all times. NOTE: Not required for an inoperative or deactivated main entry door, or for main entry doors located in the main deck cargo area of all-cargo and combination cargo/passenger airplanes.
1)	Upper Deck Exit Signs	C	-	-	(M)(O) May be inoperative provided: a) Exit signs above each operative door/ slide must be operative , and b) Upper deck occupancy is limited to those flight crewmembers essential to the flight (including official observer in forward observer seat) during takeoff or landing.
-51-2	Exterior Emergency Lighting System	B	1	0	May be inoperative for associated inoperative or deactivated main entry door.
		B	1	0	May be inoperative for main entry doors located in the main deck cargo area of all-cargo and combi airplanes.
		B	1	0	May be inoperative for day operations.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33 LIGHTS					
-51-3	Floor Proximity Emergency Escape Path Marking System				
1)	Passenger and Combi Configurations				
a)	Incandescent Marking System	C	1	-	Individual lights may be inoperative provided FAA approved minimum acceptable lighting levels specified in one of the following documents are complied with: a) FAA engineering approval letter, b) FAA approved report of the Type Design holder, c) Limitations and Conditions section of the applicable Supplemental Type Certificate (STC), or d) An FAA approved report incorporated in the Master Drawing List for the applicable STC.
b)	Photoluminescent Marking System	C	1	-	Components may be inoperative provided minimum acceptable lighting levels specified in one of the following documents are complied with: a) FAA engineering approval letter, b) FAA approved report of the Type Design holder, c) Limitations and Conditions section of the applicable Supplemental Type Certificate (STC), or d) An FAA approved report incorporated in the Master Drawing List for the applicable STC.
2) ***	Cargo Configuration	D	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-00-1	Instrument Source Select Switches (FLT DIR, NAV, EIU, IRS, AIR DATA)	C	10	-	(M)(O) May be inoperative provided: a) Associated instruments operate from isolated sources, and b) Inoperative switches are not moved in flight. NOTE: This MMEL item does not include the CENTER ADC Selector installed on ADIRU equipped airplanes.
1)	Auto-Select Feature	C	-	0	(M) May be inoperative provided source is verified.
-00-2 ***	PFD/ND Standby Power Switching	C	2	1	
-11-1	Static Air Temperature (SAT) Indications	D	-	0	
-11-2 ***	Pitot/Static Probe Source Select Valves	C	-	0	May be inoperative provided left and right ADCs operate normally.
-12-1	Air Data Computer System (ADC)	C	-	2	(O) May be inoperative provided at least the left, and one other ADC operate normally.
-12-2	Total Air Temperature Indication	C	1	0	May be inoperative provided Static Air Temperature (SAT) indication is available.
1)	Total Air Temperature Probes	C	2	1	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-12-3 ***	Air Data Inertial Reference Unit (ADIRU) Systems				
1)	Air Data Computer (ADC) Functions	C	3	2	(O) One may be inoperative provided AIR DATA and CENTER AIR DATA instrument source select switches operate normally.
2)	Inertial Reference Unit (IRU) Functions	C	3	2	(O) One may be inoperative provided: a) IRS instrument source select switches operate normally, and b) Approach minimums do not require its use.
-13-1	Mach Indications	C	2	1	One may be inoperative provided flight descends to FL 290 or below if failure of the second indication occurs in flight.
		C	2	0	May be inoperative provided flight remains at or below FL 290.
-13-2	Mach/Airspeed Warning Systems	B	2	1	One (Captain's or F/O's) may be inoperative.
-13-3	Standby Altimeter Vibrator	C	1	0	May be inoperative provided VMC conditions exist at departure and arrival airports.
-13-4 ***	True Airspeed Indications	C	-	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-16-1	Altitude Alerting System	A	-	0	(O) 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 a designated airport (as listed in the operator's MEL) where repair or replacement can be made, and d) Repairs are made within three flight days.
		C	-	1	
1)	Aural Alert	C	-	0	May be inoperative provided a) Visual alert operates normally, and b) Auto-pilot with altitude hold and altitude capture operates normally.
2)	Visual Alert	C	-	0	May be inoperative provided a) Aural alert operates normally, and b) Autopilot with altitude hold and altitude capture operates normally.
-19-1	Windshear Alerting System				(Deleted by Revision 16a, relief incorporated into Item 34-46-1).
-21-1	Inertial Reference Units (IRUs)	C	3	2	Center IRU may be inoperative provided approach minimums do not require its use.
		C	3	2	Right IRU may be inoperative provided: a) Approach minimums do not require its use, and b) Standby power to the Captain's ND is installed and available.
-21-2	IRS 'ON BAT' Light	C	1	0	(M) May be inoperative provided the ground crew call horn is verified to operate normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-22-1	Non-Stabilized Magnetic Compass (Standby)	B	1	0	May be inoperative provided three IRUs operate normally.
		B	1	0	(O) May be inoperative provided: a) Any combination of two IRUs operate normally, and b) Airplane is operated with dual independent navigation capability and under positive radar control by ATC on the enroute portion of the flight.
		C	1	0	(O) May be inoperative for flights that are entirely within areas of magnetic unreliability provided at least two IRUs operate normally.
-22-2 ***	Standby Radio Magnetic Indicator (RMI)	C	-	0	May be inoperative provided standby power to Captain's ND is installed and available.
-22-3	Flight Director Displays	C	2	0	May be inoperative provided approach minimums do not require their use.
-22-4 ***	Standby Attitude/ILS Indicator				
1)	Attitude	C	1	0	May be inoperative provided not required by 14 CFR.
		B	1	0	May be inoperative provided: a) Operations are conducted in Day VMC only, and b) Operations are not conducted into known or forecast over-the-top conditions.
2) ***	ILS	C	1	0	May be inoperative provided VMC conditions exist at departure and arrival airports.
		C	1	0	May be inoperative provided Standby power to Captain's PFD/ND is installed and available.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-22-5 ***	Integrated Standby Flight Display (ISFD) System				
1)	Attitude Display	B	1	0	May be inoperative provided: a) Operations are conducted in Day VMC only, and b) Operations are not conducted into known or forecast over-the-top conditions.
2)	Approach Mode	C	1	0	
3)	Heading Display	C	1	0	
4)	Dedicated Battery/Charger System	C	1	0	
-31-1	Instrument Landing System (ILS)	D	-	-	Any in excess of those required by 14 CFR may be inoperative provided approach minimums do not require their use.
		C	-	-	May be inoperative provided approach minimums do not require their use.
1) ***	Excessive Beam Deviation Feature	D	-	-	Any in excess of those required by 14 CFR may be inoperative provided approach minimums do not require their use.
		C	-	-	May be inoperative provided approach minimums do not require their use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-31-2	ILS Antenna Switching				
1)	Glide Slope	D	3	2	(O) Any in excess of those required by 14 CFR may be inoperative provided approach minimums do not require use of the associated ILS Glide Slope receiver. NOTE: If Left Glide Slope switching is inoperative, GPWS Mode 5 is considered inoperative.
		C	3	0	(O) May be inoperative provided approach minimums do not require use of the associated ILS Glide Slope receiver. NOTE: If Left Glide Slope switching is inoperative, GPWS Mode 5 is considered inoperative.
2)	Localizer	D	3	2	(O) Any in excess of those required by 14 CFR may be inoperative provided approach minimums do not require use of the associated ILS Localizer receiver.
		C	3	0	(O) May be inoperative provided approach minimums do not require use of the associated ILS Localizer receiver.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-32-1	Navigation Systems (Marker Beacon)	C	-	-	May be inoperative provided approach minimums do not require its use.
-33-1	Radio Altimeters (RA)				
1)	Single Source Datalink to GPWS				
a)	Left RA	A	1	0	(O) May be inoperative provided: a) Dispatch deviation for GPWS inoperative is observed, b) Approach minimums or operating procedures do not require its use, c) Right RA operates normally, d) Boeing Service Bulletin 747-31-2410 or production equivalent is incorporated, and e) Repairs are made within two flight days.
b)	Center RA	C	1	0	(O) May be inoperative provided approach minimums or operating procedures do not require its use.
c)	Right RA	C	1	0	(O) May be inoperative provided: a) Approach minimums or operating procedures do not require its use, and b) Left RA operates normally.
2)	Multi-Source Datalink to GPWS	C	3	1	(M)(O) Two may be inoperative provided: a) GPWS is supplied with Radio altitude data, and b) Approach minimums or operating procedures do not require their use.
-34-1 ***	Microwave Landing System	D	-	0	May be inoperative provided approach procedures do not require its use.
-35-1 ***	Para Visual Displays	D	2	0	May be inoperative provided procedures do not require their use.

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-43-1	Weather Radar System	C	-	0	(O) May be inoperative provided: a) Weather radar is not required by 14 CFR, and b) Reactive windshear alert (GPWS Mode 7) operates normally.
		B	-	0	(O) May be inoperative provided: a) Weather radar is not required by 14 CFR, and b) Alternate procedures are established and used. NOTE: Operator's alternate procedures should include reviewing windshear avoidance and windshear recovery procedures.
		D	-	1	May be inoperative provided one weather radar system operates normally.
1) ***	Auxiliary Side Panel Displays	D	2	0	
2) ***	Windshear Alert Mode (Predictive)	B	-	0	(O) May be inoperative provided alternate procedures are established and used. NOTE: Operator's alternate procedures should include reviewing windshear avoidance and windshear recovery procedures.
		C	-	0	(O) May be inoperative provided: a) Alternate procedures are established and used, and b) GPWS Windshear Alert Mode (Reactive) (Mode 7) operates normally.
3) ***	Auto Tilt Function	C	1	0	May be inoperative provided manual tilt function operates normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-45-1	Traffic Collision and Avoidance System (TCAS)	B	-	0	(M) May be inoperative provided: a) System is deactivated and secured, and b) Enroute or approach procedures do not require its use.
		C	-	0	(M) May be inoperative provided: a) Not required by 14 CFR, b) System is deactivated and secured, and c) Enroute or approach procedures do not require its use.
1) ***	Combined Traffic Alert (TA) and Resolution Advisory (RA) Dual Display System(s)	C	2	1	May be inoperative on the non-flying pilot side provided: a) TA and RA visual display is operative on the flying pilot side, and b) TA and RA audio function is operative on the flying pilot side.
2)	Resolution Advisory (RA) Display System(s)	C	2	1	One may be inoperative on the non-flying pilot side.
		C	-	0	(O) May be inoperative provided: a) Traffic Alert (TA) visual display and audio functions are operative, b) TA only mode is selected by the crew, and c) Enroute or approach procedures do not require its use.
3)	Traffic Alert (TA) Display System(s)	C	-	0	(O) May be inoperative provided: a) RA visual display and audio functions are operative, and b) Enroute or approach procedures do not require its use.
4)	Audio Functions	B	1	0	May be inoperative provided enroute or approach procedures do not require its use.
5) ***	Airspace Selection Function	C	-	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-46-1	Ground Proximity Warning System (GPWS)	A	1	0	(O) May be inoperative provided: a) Alternate procedures are established and used, b) Boeing Service Bulletin 747-31-2410 or production equivalent is incorporated, and c) Repairs are made within two flight days.
1)	Modes 1 thru 4	A	4	0	(O) May be inoperative provided: a) Alternate procedures are established and used, b) Boeing Service Bulletin 747-31-2410 or production equivalent is incorporated, and c) Repairs are made within two flight days.
2)	Test Mode	A	1	0	(O) May be inoperative provided: a) GPWS is considered inoperative, b) Boeing Service Bulletin 747-31-2410 or production equivalent is incorporated, and c) Repairs are made within two flight days.
3)	Glideslope Deviation(s) (Mode 5)	C	-	1	
		B	-	0	
4)	Advisory Callouts (Mode 6)	B	-	0	(O) May be inoperative provided alternate procedures are established and used.
		C	-	0	(O) May be inoperative provided: a) Advisory callout not required by 14 CFR, and b) Alternate procedures are established and used.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-46-1	Ground Proximity Warning System (GPWS) (Cont'd)				
5)	Windshear Alert Mode (Reactive) (Mode 7)	B	1	0	(O) May be inoperative provided alternate procedures are established and used. NOTE: Operator's alternate procedures should include reviewing windshear avoidance and windshear recovery procedures.
		C	1	0	(O) May be inoperative provided: a) Alternate procedures are established and used, and b) Weather Radar System Windshear Alert Mode (Predictive) operates normally.
6)	Terrain Awareness and Warning System (TAWS)				
a)	Forward Looking Terrain Avoidance (FLTA) and Premature Descent Alert (PDA) Functions	B	1	0	(O) May be inoperative provided alternate procedures are established and used.
b)	Terrain Display Functions	C	-	1	
		B	-	0	
7) ***	Runway Awareness & Advisory System (RAAS)	C	1	0	
-51-1	Navigation Systems (VOR)	D	-	-	Any in excess of those required by 14 CFR may be inoperative.
-51-2	VOR Mode Selection Switching	C	2	1	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-53-1	ATC Transponders and Automatic Altitude Reporting Systems	B	-	0	May be inoperative provided: a) Operations do not require its use, and b) Prior to flight, approval is obtained from ATC facilities having jurisdiction over planned route of flight.
		D	-	1	Any in excess of those required by 14 CFR may be inoperative.
1)	Elementary and Enhanced Downlink Aircraft Reportable Parameters not Required by 14 CFR	A	-	0	May be inoperative provided: a) Operations do not require its use, and b) Repairs are made prior to completion of the next heavy maintenance visit.
2) ***	ADS-B Squitter Transmissions				
		C	-	0	(O) May be inoperative provided alternate procedures are established and used. NOTE: Any ADS-B Out function which operates normally may be used.
		D	-	0	May be inoperative provided operations do not require its use.
-55-1	Distance Measuring Equipment (DME)	D	-	-	Any in excess of those required by 14 CFR may be inoperative.
-57-1	Navigation Systems (ADF)	D	-	-	Any in excess of those required by 14 CFR may be inoperative.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-57-2 ***	Automatic Dependent Surveillance Broadcast (ADS-B) System	D	-	0	May be inoperative provided it is not required by 14 CFR. NOTE: If ADS-B is installed in lieu of or as a replacement for 14 CFR required equipment, the repair category in the operator's MEL will be the same as that of the 14 CFR equipment.
1)	Cockpit Display and Traffic Information (CDTI)	D	-	0	NOTE: Cockpit Display and Traffic Information (CDTI) display of data from other aircraft systems may be used.
2)	CDTI Control Panel	D	-	0	May be inoperative provided: a) Flight ID can be set, and b) Screen display is acceptable to the flight crew.
3)	Data Link Transmitter(s)	D	-	0	NOTE: In some aircraft the Data Link Transmission is an integral part of the transponder and relief is provided in that section.
4)	Data Link Receiver(s)	D	-	0	
5)	ADS-B Applications	D	-	0	
-58-1 ***	Global Positioning System (GPS)	D	-	-	May be inoperative provided procedures or navigation is not dependent upon its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34 NAVIGATION					
-61-1	Flight Management Computer Systems (FMCS includes thrust management function)	C	2	1	One may be inoperative provided: a) Enroute operations do not require its use, and b) For Combi, if ballast fuel is carried, stabilizer tank remains empty and CWT fuel in excess of ballast fuel may not be carried. NOTE: Any mode which functions normally may be used.
1)	Navigation Databases	C	-	-	(O) May be out of currency provided: a) Current Aeronautical Charts are used to verify Navigation Fixes prior to dispatch, b) Procedures are established and used to verify status and suitability of Navigation Facilities used to define route of flight, and c) Approach Navigation Radios are manually tuned and identified.
-61-2	Control Display Units (CDU)				
1)	Center CDU	C	1	0	May be inoperative provided left and right IRUs operate normally.
2) ***	Maintenance Bay CDU	D	1	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
35 OXYGEN					
-11-1 ***	Remote Fill Station	C	1	0	(M) May be inoperative provided leak-tight integrity of the supply system is not affected.
-11-2	Crew Oxygen Pressure Indication System	C	1	0	(M) May be inoperative provided an accepted procedure is used to ensure that oxygen supply is above the minimum required for flight.
-11-3	Oxygen Overboard Discharge Indicator	C	1	0	(O) May be damaged or missing.
-21-1	Passenger/ Supernumerary Oxygen System				
1)	Passenger/Combi	B	-	-	(M)(O) Passenger service units (PSUs) may be inoperative without flight altitude restriction provided: a) Associated seats are blocked and placarded to prevent occupancy, and b) Units operate normally for all usable lavatory and flight attendant locations.
		B	1	0	(O) May be inoperative provided: a) Flight is not conducted where the minimum altitude enroute is above 14,000 feet MSL, b) All air conditioning packs operate normally, c) All remaining components of the pressurization system operate normally, d) Flight altitude remains at or below FL 250, e) Portable Oxygen units are provided for 10% of the passengers, and f) Passengers are appropriately briefed.
		B	1	0	(O) May be inoperative provided flight remains at or below 10,000 feet MSL.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
35 OXYGEN					
-21-1	Passenger/ Supernumerary Oxygen System (Cont'd)				
2)	Freighter (Including STC ST03045CH)	B	1	0	(O) May be inoperative provided crew rest and supernumerary areas are not occupied.
		B	1	0	(O) May be inoperative provided: a) Flight altitude remains at or below FL 250, b) Fully functional observer's seat(s) is available for all upper deck occupants, and c) Appropriate upper deck occupancy procedures are incorporated.
3)	Automatic Presentation	C	1	0	(M)(O) May be inoperative provide: a) Manual deployment system operates normally, and b) Flight remains at or below FL 300.
-21-2	Passenger/ Supernumerary Oxygen Pressure Indication System	C	1	0	(M) (O) May be inoperative provided an accepted procedure is used to ensure that oxygen supply is above minimum required for flight.
-31-1	Portable Oxygen Dispensing Units (Bottle and Mask)	D	-	-	(M) Any in excess of those required by 14 CFR may be unserviceable or missing provided: a) Required distribution of serviceable bottles is maintained throughout aircraft, and b) Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
35 OXYGEN					
-31-2	Protective Breathing Equipment (PBE)	D	-	-	Any in excess of those required by 14 CFR may be inoperative or removed provided location placarding is removed or obscured.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
36 PNEUMATIC					
-11-1	Engine Bleed Pressure Regulating and Shutoff Valves (PRSOV)	C	4	3	(M)(O) One may be inoperative provided: a) Associated PRSOV is secured closed except for engine start, b) L and R ISLN valves are open for takeoff, and when flaps are operated, c) Bleed systems on remaining engines operate normally, and d) Start valves on remaining engines operate normally.
-11-2	Engine Bleed PRSOV Start Solenoids	C	4	3	(M)(O) One may be inoperative provided: a) Bleed valve otherwise functions normally, and b) Start valves on remaining engines operate normally.
-11-3	Engine High Pressure Bleed Systems	C	4	3	(M)(O) One may be inoperative provided: a) Associated High Pressure Shutoff Valve (HPSOV) is secured closed, b) A minimum of 70% N1 (60% N1 for RR) is maintained at or above 10,000 ft. MSL, or 55% N1 is maintained below 10,000 ft. MSL on the associated engine while in icing conditions, c) Bleed systems on remaining engines operate normally, and d) For GE, associated engine thrust reverser is deactivated.
-11-4	Wing Isolation Valves (Left and Right)	C	2	1	(M)(O) One may be inoperative deactivated open provided the pack on the same side as operative valve operates normally.
-11-5	APU Check Valve	C	1	0	(O) May be inoperative provided the APU Isolation Valve remains closed after first engine starts.
-11-6	APU Bleed Air Isolation Valve	C	1	0	(M) May be inoperative provided valve is deactivated closed after engines are started.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
36 PNEUMATIC					
-11-7	Left and Right Wing Isolation VALVE Lights	C	2	1	(O) One may be inoperative provided associated duct pressure indication is available.
-11-8	Bleed Air Pressure Regulating Valve (PRV) Systems (PW & GE)	C	4	3	(M)(O) One may be inoperative with associated PRV secured closed provided: a) Airplane is not operated in known or forecast icing conditions, b) L and R ISLN valves are open for takeoff, and when flaps are operated, c) Bleed systems on remaining engines operate normally, d) Associated ENGINE BLEED switch is selected OFF except for engine start, e) For GE, associated engine thrust reverser is deactivated, and f) Appropriate performance adjustments are applied.
		C	4	3	(M)(O) One may be inoperative with associated PRV secured closed provided: a) Associated fan air valve is secured in the intermediate open position, b) Airplane is not operated in known or forecast icing conditions, c) L and R ISLN valves are open for takeoff, and when flaps are operated, d) Bleed systems on remaining engines operate normally, e) Associated ENGINE BLEED switch is selected OFF except for engine start, f) For GE, associated engine thrust reverser is deactivated, and g) Appropriate performance adjustments are applied.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
36 PNEUMATIC					
-11-8	Bleed Air Pressure Regulating Valve (PRV) Systems (PW & GE) (Cont'd)	C	4	3	(M)(O) One may be inoperative with associated PRV open provided: a) Associated PRV operates pneumatically in the full open position, b) Associated HPSOV is secured closed, c) Associated Bleed Air Overpressure switch is deactivated, d) Associated ENGINE BLEED switch is selected OFF except for engine start, e) L and R ISLN valves are open for takeoff, and when flaps are operated, f) Bleed systems on remaining engines operate normally, g) A minimum of 70% N1 is maintained at or above 10,000 ft. MSL, or 55% N1 is maintained below 10,000 ft. MSL on the associated engine while in icing conditions, and h) For GE, associated engine thrust reverser is deactivated.
-11-9	Firewall Shutoff Valves (FWSOV) (RR)	C	4	3	(M)(O) One may be inoperative secured closed provided: a) Airplane is not operated in known or forecast icing conditions, b) L and R ISLN valves are open for takeoff, and when flaps are operated, c) Bleed systems on remaining engines operate normally, and d) Associated ENGINE BLEED switch is selected OFF except for engine start.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
36 PNEUMATIC					
-11-9	Firewall Shutoff Valves (FWSOV) (RR) (Cont'd)	C	4	3	(M)(O) One may be inoperative open provided: a) Associated FWSOV operates pneumatically in the full open position, b) Associated HPSOV is secured closed, c) Associated ENGINE BLEED switch is selected OFF except for engine start, d) L and R ISLN valves are open for takeoff, and when flaps are operated, e) Bleed systems on remaining engines operate normally, and f) A minimum of 60% N1 is maintained at or above 10,000 ft. MSL, or 55% N1 is maintained below 10,000 ft. MSL on the associated engine while in icing conditions.
-11-10 ***	Bleed Ozone Catalytic Converter Systems (Wing Duct Mounted)	C	2	0	(O) As required by 14 CFR.
		C	2	0	(M) If required for flight, may be inoperative provided: a) Associated Converter Valve is secured open, and b) Associated Bypass Valve is secured closed.
-11-11	Intermediate Bleed Check Valves	C	4	3	(M)(O) One may be inoperative open provided: a) A minimum of 70% N1 (60% N1 for RR) is maintained at or above 10,000 ft. MSL, or 55% N1 is maintained below 10,000 ft. MSL on the associated engine while in icing conditions, b) Associated HPSOV is secured closed, c) Bleed systems on remaining engines operate normally, and d) For GE, associated engine thrust reverser is deactivated.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
36 PNEUMATIC					
-11-12	High Stage (HP) Check Valves (RR)	C	4	0	May be inoperative open.
-12-1	Precoolers				
1)	(PW,GE & RR)	C	4	3	(O) One may be inoperative provided: a) Associated ENGINE BLEED switch is selected OFF except for engine start, b) Airplane is not operated in known or forecast icing conditions, c) L and R ISLN valves are open for takeoff, and when flaps are operated, d) Bleed systems on remaining engines operate normally, e) Associated Engine Anti-Ice switch remains OFF, and f) Appropriate performance adjustments are applied.
2)	PW & GE	C	4	3	(M)(O) One may be inoperative provided: a) Associated ENGINE BLEED switch is selected OFF except for engine start, b) Airplane is not operated in known or forecast icing conditions, c) L and R ISLN valves are open for takeoff, and when flaps are operated, d) Bleed systems on remaining engines operate normally, e) Associated Engine Anti-Ice switch remains OFF, f) Associated fan air valve is secured in the intermediate open position, and g) Appropriate performance adjustments are applied. NOTE: Airplane may be dispatched with damage to the precooler (including core damage) provided engine start is not precluded.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
36 PNEUMATIC					
-12-2	Fan Air (Precooler) Control Systems				
1)	PW & GE	C	4	2	(M)(O) One control system per side may be inoperative provided: a) Associated Fan Air valve(s) is secured in the intermediate open position, and b) For each inoperative system, the appropriate performance adjustments are applied.
2)	RR	C	4	3	(M)(O) One control system may be inoperative provided: a) Associated Fan Air Valve is secured full open, b) Associated ENGINE BLEED switch is selected OFF when wing anti-ice is ON, c) Bleed systems on remaining engines operate normally, d) Start Valves on all remaining engines operate normally, and e) For RR RB211-524H2, at least one pack is selected ON for takeoff and landing.
3)	All Engines	C	4	0	(M)(O) May be inoperative provided: a) Associated Fan Air valve(s) is secured full open, b) Airplane is not operated in known or forecast icing conditions, c) For RR RB211-524H2, at least one pack is selected ON for takeoff and landing, and d) For each inoperative system, the appropriate performance adjustments are applied.
-16-1	APU Pneumatic Duct	C	1	0	(M)(O) May be inoperative (leaking) provided: a) APU check valve operates normally, and b) If APU is used for electrical power, the APU Bleed Air Valve is deactivated closed.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
36 PNEUMATIC					
-21-1	DUCT PRESS Indication Systems	C	2	1	(M) One may be inoperative provided L and R ISLN valves are verified to operate normally.
		C	2	0	(M) May be inoperative provided: a) Crossover duct leak detection is installed and operates normally, and b) L and R ISLN valves are verified to operate normally.
-21-2	ENGINE BLEED OFF Lights	C	4	0	
-21-3	Engine Bleed Pressure Sensor	C	4	0	
21-4	Engine Bleed Overpressure Switch	C	4	3	(M)(O) One may be inoperative deactivated provided: a) Associated HPSOV is secured closed, b) Associated Bleed switch remains OFF for takeoff, c) A minimum of 70% N1 (60% N1 for RR) is maintained at or above 10,000 ft. MSL, or 55% N1 is maintained below 10,000 ft. MSL on the associated engine while in icing conditions, d) Bleed systems on remaining engines operate normally, and e) For GE, associated engine reverser is deactivated.
-22-1	Bleed Air SYS FAULT Lights	C	4	0	
-22-2	APU Isolation VALVE Light	C	1	0	May be inoperative provided associated EICAS message is not displayed.
-22-3	Engine Bleed Temperature Sensor	C	4	0	

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
38 WATER/WASTE					
-10-1	Potable Water Systems	C	-	-	(M) Individual components may be inoperative provided: a) Associated components are deactivated or isolated, and b) Associated system components are verified not to have leaks. NOTE: Any portion of system which operates normally may be used.
		C	-	-	(M) May be inoperative provided: a) System is drained, and b) Procedures are established to ensure that system is not serviced.
-30-1	Lavatory Waste Systems	C	-	0	(M) Individual components may be inoperative provided: a) Associated components are deactivated or isolated, and b) Associated system components are verified not to have leaks. NOTE: Any portion of system which operates normally may be used.
		C	-	0	(M) Associated lavatory may be inoperative provided: a) Associated components are deactivated or isolated to prevent leaks, and b) Associated lavatory door is secured closed and placarded INOPERATIVE – DO NOT ENTER. NOTE: These provisions are not intended to prohibit inspections by crewmembers.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
45 CENTRAL MAINTENANCE COMPUTER					
-45-1	Central Maintenance Computers	C	2	1	
-45-2	Ground Test Enable Switches	C	2	0	(M) May be inoperative provided switches are deactivated.
-45-3 ***	Multiple-Input Printer	C	1	0	(O) May be inoperative provided alternate procedures are established and used.
		D	1	0	May be inoperative provided procedures do not require its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
46 INFORMATION SYSTEMS					
-20-1 ***	Electronic Flight Bag Systems (EFBs)				
1) ***	Class 3 EFB	C	2	0	(O) May be inoperative provided alternate procedures are established and used. NOTE: Any function, program or document which operates normally may be used.
		D	2	0	May be inoperative provided procedures do not require its use.
2) ***	Class 2 EFB				
a)	Data Connectivity	C	-	-	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.
b)	Power Connections	C	-	-	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
46 INFORMATION SYSTEMS					
-20-1 ***	Electronic Flight Bag Systems (EFB's) (Cont'd)				
2) ***	Class 2 EFB (Cont'd)				
c)	Mounting Device	C	-	-	(M)(O) May be inoperative provided: a) Associated EFB and hardware is secured by an alternate means or removed from the aircraft, and b) Alternate procedures are established and used.
		D	-	0	(M)(O) May be inoperative provided: a) Associated EFB and hardware is secured by an alternate means or removed from the aircraft, and b) Procedures do not require its use.
3) ***	Class 1 EFB				
a)	Power Connections	C	-	-	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
47 INERT GAS SYSTEM					
-11-1 ***	Nitrogen Generation System (NGS)	A	1	0	(M) May be inoperative provided: a) NGS shutoff valve is deactivated closed, and b) Repairs are made within ten flight days.
1)	Nitrogen Generation Performance	C	1	0	
-11-2 ***	Nitrogen Generation System Boeing Line Numbers 1363 and 1366				Deleted, Revision 21c.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
49 AIRBORNE AUXILIARY POWER					
-11-1	Auxiliary Power Unit	C	1	0	May be inoperative provided procedures do not require its use.
1)	Pneumatic Function	C	1	0	May be inoperative provided procedures do not require its use.
-15-1	APU Inlet Door	C	1	0	(M) May be inoperative secured closed provided APU is not used.
		C	1	0	(O) May be inoperative open or partially open provided appropriate performance adjustments are applied.
-61-1	APU External Control Panel	C	1	0	May be inoperative provided APU automatic fire bottle discharge system operates normally.
		C	1	0	May be inoperative (and APU used) provided a qualified operator remains in the vicinity of the APU controls on the flight deck.
-61-2	APU RPM Indications (N1, N2)	C	2	0	
-71-1	APU EGT Indication	C	1	0	
-94-1	APU Oil Quantity Indication	C	1	0	(M) May be inoperative (and APU used) provided: a) APU oil quantity is filled to capacity, b) After five flight days, APU oil quantity is again filled to capacity, and c) There is no evidence of above normal oil consumption or leakage.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-11-1	Main Entry Doors/Slides	A	-	-	(M)(O) One 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 signs and lights, e) Passengers must be briefed not to use the affected door, f) Crew shall be advised that evacuation procedures must not include associated door, though opposite door may be used, g) Persons (other than assigned cabin attendants) are not permitted to be seated in blocked areas when the associated door is as indicated below: Door L-1 or R-1: From forward cabin end to a line midway between L-1/R-1 and L-2/R-2. Door L-2 or R-2: Halfway to next exits in both directions from the affected door. Door L-3 or R-3: Halfway to next exits in both directions from the affected door. Door L-4 or R-4: Halfway to next exits in both directions from the affected door. (Continued)

SYSTEM & SEQUENCE NUMBERS	1. ITEM	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS				
-11-1	Main Entry Doors/Slides (Cont'd)			Door L-5 or R-5: From a line midway between L-4/R-4 and L-5/R-5 to aft cabin end. NOTE: Restriction extends across entire cabin and those seats located on designated boundaries will be blocked. h) Tapes or ropes of conspicuous colors shall be installed to block access to unusable seats before boarding of passengers, i) Conspicuous signs and placards shall be placed in appropriate locations to indicate seats are not to be occupied by passengers, j) Main passenger aisles, cross aisles and exit access areas must not be blocked, k) Seated capacity must not exceed rated capacity of remaining pairs of exits. l) 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, and m) Blocked seating layouts and evacuation procedures must be developed and approved by the FAA certificate-holding office for inclusion in the operator's manual, and n) Repairs are made within one flight day. NOTE 1: Cabin attendants may be stationed in the vicinity of each door within blocked areas. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM 1.		2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-11-1	Main Entry Doors/Slides (Cont'd)				NOTE 2: Weight and Balance Manifest must be revised as necessary to ensure proper loading limits are observed.
1)	All Cargo/Combi	C	-	-	All door/slides in the cargo area may be inoperative or slide missing.
-11-2	Pressure Stop Fitting Assemblies (Main Entry Doors)	C	-	-	(M)(O) One forward fitting assembly and/or one aft fitting assembly per door (with a total of 10 fittings per airplane) may be missing or inoperative provided: a) There are no visible defects on other fitting assemblies for the associated door(s), b) Cabin altitude auto controller operates normally, and c) Maximum cabin differential pressure is limited to 5.2 psi.
-11-3	Main Entry Door Hold-Open Latch	D	1	0	May be inoperative for all-cargo operations only.
		B	1	0	May be inoperative provided the associated door is considered inoperative.
1)	Latch Release Lever	C	1	0	
-21-1	Crew Compartment Overhead Hatch Latch Pins	C	4	3	(M) One may be removed provided hatch operates normally.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-23-1	Upper Deck Escape Door/Slide				
1)	Passenger/Combi	C	2	1	(M)(O) One may be inoperative, or a slide missing provided upper deck occupancy is limited to 24 passengers, with airplane capacity limited to 550 passenger's total.
		C	2	0	(M)(O) May be inoperative or slide missing provided: a) Upper deck occupancy is limited to those flight crewmembers essential to the flight (including official observer in observer seats) during takeoff or landing, and b) Inertial escape reels are installed and operate normally for upper deck occupants.
2)	Freighter with Draw-Through Smoke Detection System	C	1	0	(M)(O) May be inoperative or slide missing provided: a) Upper deck occupancy is limited to those flight crewmembers essential to the flight (including official observer in observer seats) during takeoff or landing, and a) Inertial escape reels are installed and operate normally for upper deck occupants.
3)	Freighter without Draw-Through Smoke Detection System	C	2	1	(M)(O) One may be inoperative, or a slide missing provided: a) Upper deck occupancy is limited to those flight crewmembers and supernumeraries identified by the AFM and essential to the flight (including official observer in observer seats) during takeoff or landing, and b) Inertial escape reels and escape harnesses are installed (as required) and operate normally for upper deck occupants.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-23-1	Upper Deck Escape Door/Slide (Cont'd)				
3)	Freighter without Draw-Through Smoke Detection System (Cont'd)	C	2	0	(M)(O) May be inoperative, or slides missing provided: a) Upper deck occupancy is limited to those flight crewmembers essential to the flight (including official observer in observer seats) during takeoff or landing, and b) Inertial escape reels are installed and operate normally for upper deck occupants.
-23-2 ***	Upper Deck Type "A" Emergency Exit Door Actuator(s)	C	2	0	Electrical operation feature of doors may be inoperative.
-23-3 ***	DOOR U/D Flight Lock Actuators				
1)	Passenger/Combi	C	2	0	(M)(O) May be inoperative or missing provided: a) Each upper deck Type "A" door is verified to be capable of being unlatched before each departure, and b) Cabin attendant(s) monitors the door handle(s) when cabin differential pressure is less than 3.0 psi.
2)	Freighter without Draw-Through Smoke Detection System	C	2	0	(M)(O) May be inoperative or missing provided each upper deck Type "A" door is verified to be capable of being unlatched before each departure.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-23-4 ***	DOOR U/D GND MODE Lights (Above Door)				
1)	Passenger/Combi	C	2	0	(M) May be inoperative provided: a) Each upper deck Type “A” door is verified to be capable of being unlatched before each departure, and b) DOOR U/D FLT LK message operates normally.
		C	2	0	(M)(O) May be inoperative provided: a) Each upper deck Type “A” door is verified to be capable of being unlatched before each departure, and b) Cabin attendant(s) monitors the door handle(s) when cabin differential pressure is less than 3.0 psi.
2)	Freighter without Draw-Through Smoke Detection System	C	2	0	(M) May be inoperative provided: a) Each upper deck Type “A” door is verified to be capable of being unlatched before each departure, and b) DOOR U/D FLT LK message operates normally.
-23-5	Pressure Stop Fitting Assemblies (Upper Deck Door(s)				
1)	Passenger/Combi	C	-	-	(M)(O) One forward fitting assembly and/or one aft fitting assembly per door may be missing or inoperative provided: a) There are no visible defects on remaining fitting assemblies for associated door(s), b) Cabin altitude auto controller operates normally, and c) Maximum cabin pressure differential is limited to 3.0 psi. (Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-23-5	Pressure Stop Fitting Assemblies (Upper Deck Door(s) (Cont'd)				
1)	Passenger/Combi (Cont'd)				
		C	-	-	(M)(O) One forward fitting assembly and/or one aft fitting assembly per door may be missing or inoperative in unpressurized configuration.
2)	Freighter with Draw-Through Smoke Detection System	C	-	-	(M)(O) One forward fitting assembly and/or one aft fitting assembly per door may be missing or inoperative provided: a) There are no visible defects on remaining fitting assemblies for associated door(s), b) Cabin altitude auto controller operates normally, and c) Maximum cabin pressure differential is limited to 6.1 psi.
		C	-	-	(M)(O) One forward fitting assembly and/or one aft fitting assembly per door may be missing or inoperative in unpressurized configuration.
3)	Freighter without Draw-Through Smoke Detection System	C	-	-	(M)(O) One forward fitting assembly and/or one aft fitting assembly per door may be missing or inoperative provided: a) There are no visible defects on remaining fitting assemblies for associated door(s), b) Cabin altitude auto controller operates normally, and c) Maximum cabin pressure differential is limited to 3.0 psi.
		C	-	-	(M)(O) One forward fitting assembly and/or one aft fitting assembly per door may be missing or inoperative in unpressurized configuration.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-23-6	Door U/D FLT LK Indication				
1)	Passenger/Combi	C	1	0	(M) May be inoperative provided: a) Each upper deck Type “A” door is verified to be capable of being unlatched before each departure, and b) DOOR U/D GND MODE lights above each upper deck type “A” door operates normally.
		C	1	0	(M)(O) May be inoperative provided: a) Each upper deck Type “A” door is verified to be capable of being unlatched before each departure, and b) Cabin attendant(s) monitors the door handle(s) when cabin differential pressure is less than 3.0 psi.
2)	Freighter without Draw-Through Smoke Detection System	C	1	0	(M) May be inoperative provided: a) Each upper deck Type “A” door is verified to be capable of being unlatched before each departure, and b) DOOR U/D GND MODE lights above each upper deck type “A” door operates normally.
-23-7	Upper Deck Door Battery OK Lights	C	2	1	(M) One press-to-test system may be inoperative provided associated system is verified to be adequately charged once each flight day.
-31-1 ***	Nose Cargo Door Indication System	A	-	0	(M)(O) May be inoperative provided: a) It is visually verified that the door is closed and flush with the fuselage before each departure, b) It is visually verified that latches are fully extended before each departure, c) The door control system is deactivated by an accepted procedure, and d) Repairs are made within 30 flight hours.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-31-2 ***	Nose Cargo/Door Power Lift System (Electrical Function)	C	1	0	(M) May be inoperative provided accepted maintenance procedures are established and used.
-31-3 ***	Nose Cargo Door Cam System (Electrical Function)	C	1	0	(M) May be inoperative provided accepted maintenance procedures are established and used.
-31-4 ***	Nose Cargo Door Power Latch System	C	1	0	(M)(O) May be inoperative provided: a) Associated latches are extended manually by an accepted maintenance procedure, and b) Latches are visually confirmed fully extended before each departure,
1)	Power latches	C	16	15	(M)(O) One may be inoperative unlatched or missing provided remaining latches are visually confirmed to be fully extended before each departure.
-31-5 ***	Loadmaster's Nose Door Controls	A	-	0	(M)(O) May be inoperative provided: a) Accepted procedures are established and used, b) Door is visually verified closed and flush with the fuselage before each departure, c) Latches are visually verified to be fully extended before each departure, d) Door control system is deactivated by an accepted procedure, and e) Repairs are made within 30 flight hours.
-31-6 ***	Nose Door Latch Actuator Test System	C	1	0	
-31-7 ***	Loadmaster's Nose Cargo Door Latch Annunciator System	C	1	0	(M)(O) May be inoperative provided it is visually verified that latches are fully extended before each departure.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-31-8 ***	Loadmaster's Nose Cargo Door Closed Annunciator System	C	1	0	(M) May be inoperative provided: a) Nose door is visually verified closed and flush with the fuselage before each departure, and b) Nose cargo door latch annunciator operates normally.
		C	1	0	(M) May be inoperative provided: a) Nose door is visually verified closed and flush with the fuselage before each departure, and b) Latches are visually verified to be fully extended before each departure.
-32-1 ***	Main Deck Side Cargo Door	C	1	-	(M)(O) One latch or hinge section per door may be missing or inoperative provided: a) A visual check is made before departure to ensure that there is no damage to other hinge sections or latches on the associated door, b) Flight is conducted in an unpressurized configuration, c) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, d) Extended overwater flight is prohibited, and e) Crew rests, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE - DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly way kits and which materials can be used as ballast.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-32-2 ***	Main Deck Side Cargo Door Latch System (Electrical Function)	C	1	0	(M) May be inoperative provided: a) Manual function operates normally, b) There is no damage to the latch mechanism, c) There is no damage to the master latch lock mechanism, d) Door is closed and locked using an accepted maintenance manual procedure, and e) All latch cams are visually confirmed to be in the closed position.
-32-3 ***	Main Deck Side Cargo Door Latch Lock System (Interior Master Latch Lock Handle Shear Pin)	C	1	0	(M) Shear pin may be inoperative or missing provided: a) Exterior master latch lock handle operates normally, b) There is no damage to the master latch lock mechanism, and c) Door is locked using the exterior master latch lock handle.
-32-4	Cargo Door Lift Systems (Main Lower Lobe Cargo Doors and Main Deck Side Cargo Door)	B	-	0	(M) May be inoperative provided: a) There is no damage to the latch mechanism, b) There is no damage to the master latch lock mechanism, and c) Associated door is opened, closed and locked using an accepted maintenance manual procedure.
-32-5	Cargo Door Hook Systems (Main Lower Lobe Cargo Doors and Main Deck Side Cargo Door) (Electrical Function)	C	-	0	(M) May be inoperative provided: a) Manual function operates normally, b) There is no damage to the hook mechanism, and c) Doors are closed and locked using an accepted maintenance manual procedure.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-34-1	Main Lower Lobe Cargo Doors	C	2	-	(M)(O) One latch or hinge section per door may be missing be inoperative provided: a) A visual check is made before departure to ensure that there is no damage to remaining hinge sections or latches on the associated door, b) Flight is conducted in an unpressurized configuration, c) Procedures are established and used to verify main deck and lower lobe cargo compartments remain empty or contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), or fly away kits, d) Extended overwater flight is prohibited, and e) Crew rests, crew workstations and passenger business centers with a door and smoke detection system (except the Combi Enlarged Lav/Business Center) are empty, locked closed and placarded INOPERATIVE - DO NOT ENTER. NOTE: Operator MELs must define items which are approved for inclusion in the fly away kits and which materials can be used as ballast.
-34-2	Main Lower Lobe Cargo Door Latch Systems (Electrical Function)	C	2	0	(M) May be inoperative provided: a) Manual function operates normally, b) There is no damage to the latch mechanism, c) There is no damage to the master latch lock mechanism, d) Doors are closed and locked using an accepted maintenance manual procedure, and e) All latch cams on lower sill are confirmed to be in the closed position.
-36-1	Bulk Cargo Door Balance Mechanism	C	1	0	(M) May be inoperative provided a safety hold open device is used when door is in OPEN position.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-36-2	Bulk Cargo Door Pressure Stop Fitting Assemblies	C	-	-	(M)(O) One forward fitting assembly or one aft fitting assembly may be missing or inoperative provided: a) There are no visible defects on remaining fitting assemblies for associated door, b) Cabin altitude auto controller operates normally, and c) Maximum cabin pressure differential is limited to 5.2 psi.
-48-1	Main (Forward) Electronic Bay External Access Door Latch Pins	C	4	3	(M) One may be damaged or removed provided door operates normally.
		C	4	3	(M) One may be inoperative provided: a) Integrity of remaining pins is verified, b) Remaining pins are verified to be fully engaged, and c) Verification procedures are repeated each time the door is opened and closed.
-48-2 ***	Cabin Compartment E & E Bay Hatch Lock Screw and/or Nut Plate	D	2	0	May be inoperative or missing.
-51-1 ***	Flight Deck Door Lock System (Not 14 CFR 25.795 Compliant)	C	1	0	(M) May be inoperative provided: a) Door lock solenoid is deactivated in the locked position, and b) Door is verified to lock and unlock manually.
		C	1	0	May be inoperative provided supplemental flight deck door security device is installed and operates normally.
		D	1	0	May be inoperative provided all-cargo operations are being conducted.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-51-2 ***	Boeing Enhanced Flight Deck Security Door Automatic Locking System (14 CFR 25.795 Compliant)	A	1	0	(M)(O) May be inoperative provided: a) Automatic locking system is deactivated, b) Door dead bolt operates normally and is used to lock the door, c) Alternate procedures are established and used for locking and unlocking the door using the dead bolt, and d) Repairs are made within two flight days.
1)	Flight Deck Access Panel System (Keypad, Door Chime)	B	1	0	(M)(O) May be inoperative provided: a) Keypad is deactivated, and b) Alternate procedures are established and used.
a)	LEDs	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
b) ***	Door Bell Mode	C	1	0	(O) May be inoperative provided alternate procedures are established and used.
2)	Flight Deck Door LOCK FAIL Light	B	1	0	(M) May be inoperative provided automatic lock controls are verified to operate normally.
3)	Flight Deck Door AUTO UNLK Light	B	1	0	(M) May be inoperative provided: a) Automatic lock controls are verified to operate normally, and b) Door chime operates normally.
4)	Flight Deck Door Lock Control Selector	B	1	0	(M)(O) May be inoperative provided: a) Keypad is deactivated, b) Automatic lock is verified to operate normally, and c) Alternate procedures are established and used.
5)	Pressure Rate-of-Change Sensing Module	A	1	0	(M) May be inoperative provided: a) Pressure sensing module is deactivated, and b) Repairs are made within two flight days.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-51-3 ***	Boeing Enhanced Flight Deck Security Door Dead Bolt (14 CFR 25.795 Compliant)	C	1	0	May be inoperative provided automatic lock controls operate normally.
-51-4 ***	JAMCO Flight Deck Security Door Automatic Locking System (14 CFR 25.795 Compliant)	A	1	0	(M)(O) May be inoperative provided: a) Automatic locking system is deactivated, b) Mechanical catch pin lock operates normally and is used to lock the door, c) Alternate procedures are established and used for locking and unlocking the door using the mechanical catch pin lock, and d) Repairs are made within two flight days.
1)	Door Automatic Locking Solenoids	C	2	1	(M) One may be inoperative provided the remaining locking solenoid is verified to operate normally.
2)	Door Aural Warning System				
a)	Speakers	B	2	1	(M)(O) One may be inoperative provided the remaining speaker is verified to operate normally once each flight day.
b)	LED (Green Indicator Lights)	C	2	0	
c)	Door Horn/Bell	B	1	0	(M)(O) May be inoperative provided: a) Door AUTO UNLK light is verified to operate normally, and b) Alternate procedures are established and used.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-51-4 ***	JAMCO Flight Deck Security Door Automatic Locking System (14 CFR 25.795 Compliant) (Cont'd)				
3)	Door Control Panel				
a)	Door Lock FAIL Light	B	1	0	(M) May be inoperative provided automatic lock controls are verified to operate normally.
b)	Door AUTO UNLK Light	B	1	0	(M)(O) May be inoperative OFF provided: a) Automatic lock controls are verified to operate normally, b) Door aural warning system operates normally, and c) Alternate procedures are established and used.
4) ***	Flight Deck Door Warning/Caution Light	C	1	0	
5)	Keypad	B	1	0	(O) May be inoperative provided alternate procedures are established and used.
a)	Keypad Indicator Lights	C	3	0	(M)(O) May be inoperative provided: a) Keypad is verified to operate normally, and b) Alternate procedures are established and used.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-51-5 ***	JAMCO Flight Deck Security Door Mechanical Catch Pin Lock (14 CFR 25.795 Compliant)	C	1	0	(M)(O) May be inoperative provided automatic locking system operates normally.
-51-6 ***	Flight Deck Door Viewing Port	A	1	0	(O) May be inoperative provided: a) Alternate procedures are established and used, and b) Repairs are made within three flight days.
		C	1	0	(O) May be inoperative provided: a) A flight deck door visual surveillance system is installed and operates normally, and b) Alternate procedures are established and used.
1) ***	Cargo Configuration	C	1	0	May be inoperative provided courier/ supernumerary compartment remains empty.
		D	1	0	May be inoperative provided procedures do not require its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52 DOORS					
-73-1	Door Indication	C	1	0	(M)(O) May be inoperative provided door(s) is verified closed and locked by an alternate procedure.
1) ***	Auto/Man EICAS Indications	C	-	0	(O) May be inoperative provided door(s) is verified in Auto or Man as appropriate by an alternate procedure.
		D	-	0	May be inoperative provided procedures do not require its use.
2) ***	Flight Attendant Panel Auto/Man Indications (Door 1L)	C	2	0	(O) May be inoperative provided doors are verified in Auto or Man as appropriate by an alternate procedure.
		D	2	0	May be inoperative provided procedures do not require its use.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
53 FUSELAGE					
-21-1	Floor Vents (Passenger Airplanes)	C	-	-	Two in each zone may be open or missing.
-21-2	Sidewall Vents (Passenger Airplanes)	C	-	-	(M) Two sidewall vents on each side of each zone may be open or missing provided the adjacent passenger seat is blocked from occupancy.

1. SYSTEM & SEQUENCE NUMBERS	ITEM	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
56 WINDOWS				
-11-1	Windshields			
1)	TRIPLEX (.118”) and PPG			Deleted in Revision # 24a. NOTE: Refer to Aircraft Maintenance Manual (AMM) or Structural Repair Manual (SRM).
2)	TRIPLEX (.050”)			Deleted in Revision # 24a. NOTE: Refer to Aircraft Maintenance Manual (AMM) or Structural Repair Manual (SRM).

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
73 ENGINE FUEL & CONTROL					
-11-1	Fuel Low Pressure Warning Systems (RR)	C	4	0	(M) May be inoperative provided associated engine driven fuel pump is verified to operate normally.
-21-1	Minimum Idle/Approach Idle Selection Systems				
1)	Ground Minimum Idle Selection Systems	C	4	0	(O) May be inoperative provided: a) Antiskid operates normally, and b) Appropriate performance adjustments are applied.
2) ***	Continuous Ignition Selected Approach Idle (PW & GE)	C	4	0	May be inoperative provided during operation in or near heavy rain or hail N1 is maintained at 45% for Flight Levels below 10,000 ft and N1 is maintained at 50% for Flight Levels 10,000 ft and higher.
-21-2	Electronic Engine Control Systems (EEC)				
1)	ENG_EEC Mode (PW and RR)	C	4	3	(O) One may be inoperative provided: a) All engines are operated in the alternate (ALTN) mode, and b) Appropriate procedures, AFM limitations and performance decrements are applied.
2)	ENG_EEC Mode (GE)	C	4	0	(O) May be inoperative provided all engines are operated in the alternate (ALTN) mode.
3)	ENG_EEC C1 (GE)	A	4	2	Two may be inoperative with C1 faults provided repairs are made in accordance with times established by GE engine Type Certificate Data Sheet number E13NE note 18.

(Continued)

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
73 ENGINE FUEL & CONTROL					
-21-2	Electronic Engine Control Systems (EEC) (Cont'd)				
4)	ENG_EEC C1 (RR)	A	4	2	Two may be inoperative with C1 faults provided repairs are made in accordance with times established by RR engine Type Certificate Data Sheet number E30NE note 17.
5)	ENG_EEC C1 (PW)	A	4	0	May be inoperative with C1 faults provided repairs are made in accordance with times established by PWA engine Type Certificate Data Sheet number E24NE note 19.
-21-3	Turbine Overspeed System (RR)	C	4	0	
-21-4	Engine Overspeed Protection Systems				
1)	N2 Hydromechanical Overspeed Governor (GE)	C	4	3	
2)	Engine Overspeed Protection (PW)	C	4	3	(M) One may be inoperative provided: a) Before each departure, ENG CONTROL status message is verified to be displayed due to an overspeed fault only, and b) Autostart system is not installed.
-21-5 ***	Engine Supplemental Control Unit (PW)	C	4	0	(M)(O) May be inoperative provided: a) Associated Auto Start switch remains OFF, b) Associated unit(s) is deactivated, and c) Alternate start procedures are used.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
73 ENGINE FUEL & CONTROL					
-31-1	Fuel Flow Indications	B	4	3	Except for ER operations, one may be inoperative provided: a) Fuel quantity indicating systems for tanks containing fuel operate normally, b) Associated N1, N2, N3 (for RR), and EPR (for PW and RR) indications operate normally, and c) For Combi, if ballast fuel is carried, stabilizer tank remains empty and CWT fuel in excess of ballast fuel may not be carried.
-31-2	Fuel Control ENG FUEL VLV Indications (GE and PW)	C	4	3	(M)(O) One may be inoperative provided: a) Associated Engine Fuel Valve is verified to operate normally, and b) Associated EICAS message is deactivated.
-34-1	Fuel Filter Bypass Warning Systems	C	4	3	(M) One may be inoperative provided: a) It is verified that the malfunction is in the fuel filter bypass warning system, and b) Associated fuel filter is checked for the presence of contaminants before each departure.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
74 IGNITION					
-00-1	Ignition Systems	C	8	4	(O) One per engine may be inoperative provided: a) Nacelle anti-ice system on the associated engine operates normally, b) Ignition Selector is positioned to ensure ignition to all engines, and c) For PW & RR, No. 1 ignition system is verified to operate on at least two engines prior to each flight.
-00-2	Continuous Ignition Selection System				
1)	Flap Actuated	C	1	0	(O) May be inoperative provided continuous ignition is manually selected ON when required.
2)	Nacelle Anti-Ice Actuated	C	4	0	(O) May be inoperative provided continuous ignition is manually selected ON when required.
3)	Switch Actuated	C	1	0	(O) May be inoperative provided standby ignition system is used to provide continuous ignition when required.
-00-3 ***	Auto Ignition (RR Autostart)	C	4	0	(O) May be inoperative provided: a) Ignition Select Switch NORM position is placarded INOP and that position is not used, and b) Continuous Ignition is ON when required.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
75 ENGINE BLEED AIR					
-23-1	Nacelle Cooling Systems				
1)	Nacelle Zone Ventilation Valves (PW)	C	4	0	(M)(O) May be inoperative provided: a) Associated valve remains open, and b) Enroute performance limited weights are reduced by 1200 lb (544 kg) for each inoperative valve.
2)	Core Compartment Cooling Valves (GE)	D	4	0	(M) May be inoperative provided associated valve remains open.
-23-2 ***	Bore Cooling System (GE)	D	4	0	May be inoperative open.
-24-1	Turbine Case Cooling Air Flow Systems				
1)	PW	C	4	0	(M)(O) May be inoperative provided associated turbine case cooling valve remains closed.
2)	GE	D	4	0	(M)(O) May be inoperative provided associated turbine case cooling valve remains closed.
-24-2 ***	Turbine Cooling Air Systems (PW and GE)	C	4	0	(M)(O) May be inoperative provided associated turbine cooling valve remains open.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
75 ENGINE BLEED AIR					
-33-1	IDG Air/Oil Cooler (AOC) Valves				
1)	GE	C	4	0	(M)(O) May be inoperative provided: a) Valves are inoperative open, and b) Appropriated performance adjustments are applied.
2)	PW	C	4	0	(M)(O) May be inoperative provided: a) Valves are inoperative open, b) Fuel tank temperature remains above -42 degrees C (-36 degrees C if IDG is disconnected) throughout the flight, and c) Appropriate performance adjustments are applied.
3)	RR	C	4	0	(M)(O) May be inoperative provided: a) Valves are inoperative open, and b) Appropriate performance adjustments are applied.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
77 ENGINE INDICATING					
-11-1	Engine Pressure Ratio Indicating Systems (PW and RR)	C	4	3	(O) One may be inoperative provided: a) All EEC's are switched to ALTN mode, b) Appropriate AFM procedures, limitations, and performance decrements are applied, and c) N1, N2 (N3 for RR) and Fuel Flow indication on associated engine operate normally.
-12-1	N2 Tachometer Systems (RR)	B	4	3	One may be inoperative provided remaining engine indicating systems operate normally.
-12-2	Engine Speed Cards	C	4	3	(O) One card may be inoperative provided: a) Associated engine is started last, b) Associated start switch is manually canceled when N2 reaches 50% (N3 for RR),and c) CMC BITE tests for ATA 21 systems are not initiated after engine start.
-12-3	N3 Tachometer Generator (RR)	C	4	3	(O) May be inoperative provided: a) Associated Vibration Indicating System is considered inoperative, and b) Associated Engine Speed Card is considered inoperative.
-22-1	Engine Turbine Overheat Detector Loops (RR)	C	8	4	One loop per engine may be inoperative.
-31-1	Vibration Indicating Systems	C	4	2	(M) Two may be inoperative unless required by a maintenance program.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
78 ENGINE EXHAUST					
-31-1	Thrust Reverser Systems (such as, but not limited to: engine reverse hydraulic isolation valves, thrust reverser air system, and REV unlock indications)	C	4	3	(M)(O) One may be inoperative provided: a) Associated reverser is secured in the forward thrust position, and b) On associated engine, both T/R Control and T/R Indication circuit breakers are opened and collared.
		A	4	2	(M)(O) Two may be inoperative provided: a) Inoperative thrust reversers are on symmetrical engines only, b) Associated reversers are secured in the forward thrust position, c) On associated engine, both T/R Control and T/R Indication circuit breakers are opened and collared, d) Anti-skid and auto spoiler systems operate normally, and e) Repairs are made within three flight days.
-34-1	Engine Reverse Lever Interlock	C	4	3	(O) May be inoperative extended or retracted. NOTE: Associated Reverse thrust is limited to idle when inoperative retracted.
-34-2	Engine Reverse Hydraulic Isolation Valves (PW)				Dispatch relief moved to item 78-31-1, Revision 19.
-34-3	Thrust Reverser Air System				Dispatch relief moved to item 78-31-1, Revision 19.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
78 ENGINE EXHAUST					
-36-1	Reverser Position Sensing System	C	4	3	(M)(O) One may be inoperative provided: a) Associated reverser is secured in the forward thrust position, and b) On associated engine, both T/R Control and T/R Indication circuit breakers are opened and collared.
		A	4	2	(M)(O) Two may be inoperative provided: a) Inoperative thrust reversers are on symmetrical engines only, b) Associated reversers are secured in the forward thrust position, c) On associated engine, both T/R Control and T/R Indication circuit breakers are opened and collared, d) Anti-skid and auto spoiler systems operate normally, and e) Repairs are made within three flight days.
-36-2	REV Unlock Indications (Amber)				Dispatch relief moved to item 78-31-1, Revision 19.
-36-3	Full REV Position Indications (Green)	C	4	3	One may be inoperative provided associated REV unlock indication (Amber) operates normally. NOTE: Not required for an inoperative thrust reverser.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
79 ENGINE OIL					
-21-1	Engine Oil Filter Warning Indications (Impending Bypass) (PW and GE)	C	4	2	(M) Two may be inoperative provided: a) It is verified that the malfunction is in the alerting system, and b) Associated Master Chip Detector is checked for contaminants before each departure.
-21-2	Engine High Pressure Oil Filter Warning Indication (Approaching Blockage) (RR)	C	4	2	(M) Two may be inoperative provided: a) It is verified that the malfunction is in the alerting system, and b) The Master Chip Detector is checked for contaminants before each departure.
-21-3	Engine Fine Scavenge Oil Filter Warning Indication (Impending Bypass) (RR)	C	4	2	(M) Two may be inoperative provided: a) It is verified that the malfunction is in the alerting system, and b) The Master Chip Detector is checked for contaminants before each departure.
-21-4	Engine Air/Oil Heat Exchanger Valves (PW)	C	4	0	(M)(O) May be inoperative provided: a) Valves are deactivated open, b) Fuel tank temperature remains above -34 degrees C (-30 degrees C if IDG is disconnected) throughout the flight, and c) For each inoperative valve, the appropriate performance adjustments are applied.
-21-5 ***	Engine Oil Tank Flapper Valves	C	4	0	(M) May be inoperative provided associated oil tank filler cap is secured closed after each servicing.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
79 ENGINE OIL					
-31-1	Oil Quantity Indicating Systems	B	4	3	(M) One may be inoperative provided: a) It is verified before each departure that the oil tank is filled to the recommended capacity, b) There is no evidence of above normal oil consumption or leakage, and c) Associated oil temperature and pressure indications operate normally.
-33-1	Low Oil Pressure Switches (RR)				Deleted, Revision 16 a.
-34-1	Engine Bearing #3 Scavenge Oil Temperature (PW)				
1)	ENG_SCAV TEMP1	A	4	3	(M) May be dispatched with this message displayed provided repairs are made within 3 flight days.
2)	ENG_SCAV TEMP2	A	4	3	(M) May be dispatched with this message displayed provided repairs are made within 10 flight days.

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
80 STARTING					
-11-1	Engine Start Valves	C	4	3	(M)(O) One may be inoperative closed provided: a) Alternate starting procedures are established and used, and b) Associated Start Valve Open Light operates normally.
-11-2	Starter Switch Systems	C	4	0	(O) May be inoperative provided alternate start procedures are used.
-11-3 ***	Auto Start Systems	C	4	0	(O) May be inoperative provided Manual Start System operates normally.
-11-4	Start Valve Open Lights	C	4	3	(O) One may be inoperative provided it is verified after engine start that the associated start valve is closed.