

Table of Contents

Preamble	FM-3
Delta's MEL/CDL Authority and Scope.....	FM-4
Revision Effectivity.....	FM-4
Change Requests	FM-4
Definitions.....	FM-5
MEL/CDL Format.....	FM-11
MEL Videos.....	FM-13
Repetitive Check Requirements	FM-14
Placard Instruction Table	FM-15
Performance Instructions.....	FM-17
MEL/CDL Use (Maintenance).....	FM-19
MEL/CDL Use (Pilots)	FM-21
MEL Expiration / Removal.....	FM-23
Navigation Equipment	NE-1
Aircraft / Engine Configurations	AE-1
EICAS Messages.....	EM-1
05 - ER (ETOPS) Status.....	5-1
11 - Placards.....	11-1
21 - Air Conditioning	21-1
22 - Autoflight.....	22-1
23 - Communications.....	23-1
24 - Electrical Power	24-1
25 - Equipment / Furnishings.....	25-1
26 - Fire Protection	26-1
27 - Flight Controls	27-1
28 - Fuel.....	28-1
29 - Hydraulic Power	29-1
30 - Ice & Rain Protection.....	30-1
31 - Indicating / Recording Systems.....	31-1
32 - Landing Gear.....	32-1
33 - Lights	33-1
34 - Navigation.....	34-1
35 - Oxygen	35-1
36 - Pneumatic.....	36-1
38 - Water / Waste.....	38-1
45 - Central Maintenance	45-1
46 - Information Systems.....	46-1
47 - Inert Gas System.....	47-1
49 - Auxiliary Power Unit (APU)	49-1
52 - Doors	52-1

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-2

53 - Fuselage	53-1
56 - Windows	56-1
73 - Engine Fuel & Control.....	73-1
74 - Engine Ignition	74-1
75 - Engine Bleed Air	75-1
77 - Engine Indicating	77-1
78 - Engine Exhaust.....	78-1
79 - Engine Oil	79-1
80 - Engine Starting	80-1
Index.....	IN-1
List of Effective Pages.....	LP-1

	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-3

MEL Preamble

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

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

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

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

The MEL provides for release of the aircraft for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Aircraft Maintenance Record/Logbook as prescribed by 14 CFR ([see TOPP 50-10-05](#)). The item is then either repaired or may be deferred per the MEL or other approved means acceptable to the Administrator prior to further operation. MEL conditions and limitations do not relieve the operator from determining that the aircraft is in condition for safe operation with items of equipment inoperative. When these requirements are met, an Airworthiness Release, Aircraft Maintenance Record/Logbook entry, or other approved documentation is issued as prescribed by 14 CFR. Such documentation is required prior to operation with any item of equipment inoperative.

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

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

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-4

Delta's MEL/CDL Authority and Scope

14 CFR provides for conditional deviations from the airworthiness of various systems and components for a given type of aircraft. These items are listed for each aircraft type in the FAA Approved Master Minimum Equipment List and FAA Approved Airplane Flight Manual. Delta develops and maintains a FAA-approved Minimum Equipment List (MEL) and Configuration Deviation List (CDL) as authorized for use in Delta's Operations Specifications D95 (see [TOPP 20-00-05](#)).

The intent of Delta's MEL/CDL is to permit aircraft operation with certain inoperative systems/components for a specified period of time until repairs can be accomplished. The MEL/CDL remains active until the necessary action is taken to correct the discrepancy, or until the MEL expiration has been reached.

Under no circumstances may an inoperative or missing system/component, which will affect the airworthiness of an aircraft, be deferred unless specifically authorized by the MEL, CDL or NEF for the type of aircraft involved. Any item not specifically covered in the MEL/CDL/NEF is a no-go item.

MEL and CDL requirements will specify the installation of an aircraft placard for affected system/components, and can impose restricted flight release and/or require repetitive checks.

Delta's MEL contains applicable items from the Master MEL and certain Administrative Control Items (ACI) which may not be listed in the Master MEL. The CDL also lists items that may be missing from the aircraft as contained in the Approved Airplane Flight Manual (AFM) Configuration Deviation List (CDL).

The provisions and limitations of the MEL/CDL are applicable for the "Dispatch" of an aircraft only. For the Delta MEL/CDL purposes, "Dispatch" is defined as the advancement of throttles for the purpose of taking off (takeoff event).

If a component or function becomes inoperative following the takeoff, the MEL/CDL does not apply. If the takeoff is aborted for any reason, the MEL/CDL provisions and limitations become applicable once again.

Revision Effectivity

The List of Effective Pages (LEPs) will have the stamp, date, and signature of the Principal Operation Inspector (Delta – Certificate Management Office) indicating FAA approval of the revision. The date of each individual page will be listed in the LEP body. The MCC Home Page will contain the official version of the MEL/CDL. All other copies will be updated within 21 days.

During the period that the revision is being processed for publication and distribution, the newly revised MEL/CDL may be used for dispatch provided it is ensured that a copy of the revised MEL/CDL page(s) is available to the affected aircraft (to be seen by the current and subsequent pilots) and other appropriate personnel.

A Temporary Revision (TR) may also be published to the MEL/CDL between normal revisions at the discretion of the MEL Program Manager, and will be permanently incorporated into the MEL/CDL at the next revision opportunity. TRs are printed on yellow paper with the effective date in the upper corner of each page, and are not reflected in the LEPs. A MEL revision or TR becomes effective on the date of approval by the FAA Principal Operations Inspector (Delta - Certificate Management Office). The CDL is derived from the AFM, and does not gain separate FAA approval.

If an MEL/CDL revision has been published that changes either the MEL/CDL item number, (M) PROCEDURES, (O) PROCEDURES, deactivation procedures, or expiration limit, the MEL/CDL restrictions and procedures that were in place at the time of deferral will remain in effect until the MEL/CDL is cleared or extended.

Change Requests

Personnel may request changes to the MEL/CDL by emailing: [MELGroup](#), [ATG088](#). To ensure proper routing of the request, please indicate aircraft type and attach any pertinent information. The MEL/CDL Program Manager will record all requests for consideration during the next routine revision cycle.

	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-5

Definitions

1. **Accessible Lavatory Items** - Under 14 CFR 382.63, accessible lavatory items include: ability to enter lavatory and maneuver by means of on-board wheelchair. The lavatory shall provide accessible door locks, call buttons, grab bars, faucets, other controls, and dispensers. As an air carrier, you must maintain all aircraft accessibility features in proper working order, per 14 CFR 382.71. The accessible lavatory requirement, in part, applies to aircraft with more than one aisle in which lavatories are provided per 382.63(a). Aircraft operators are not required to retrofit cabin interiors of existing aircraft to comply with the requirements of 382.63.
2. **Administrative Control Item (ACI)** - An item listed by the operator in the MEL for tracking and informational purposes. As an example, ACI may be used to track ETOPS accomplishment of required APU cold-soak, or in-flight verification starts on two engine aircraft. It may be added to an operator's MEL by approval of the Principal Operations Inspector provided no relief is granted, or provided conditions and limitations are contained in an approved document (i.e., Structural Repair Manual, Airworthiness Directive, etc.). If relief other than that granted by an approved document is sought for an administrative control item, a request must be submitted to the Administrator. If the request results in review and approval by the FOEB, the item becomes an MMEL item rather than an administrative control item.
3. **Airplane Flight Manual (AFM)** - The document required for type certification and approved by the responsible FAA Aircraft Certification Office. The FAA approved AFM for the specific aircraft is listed on the applicable Type Certificate Data Sheet. The approved flight manual is the source document for operational limitations and performance parameters for an aircraft.
4. **Autoland** – An autopilot coupled precision instrument approach to landing and rollout on those aircraft that are rollout equipped.
5. **CFR** – The applicable portions of the Code of Federal Regulations.
6. **Considered Inoperative** - As used in the provisos, means that an instrument and equipment item must be treated for dispatch, taxi and flight purposes as though it were inoperative. The item shall not be used or operated until the original deferred item is repaired. Additional actions include: documenting the item on the dispatch release (if applicable), placarding, and complying with all remarks, exceptions, and related MMEL provisions, including any (M) and (O) PROCEDURES and observing the repair category.
7. **Contact MCC** - under NAME/DESCRIPTION means that the Maintenance Coordinator must be notified prior to takeoff. If the discrepancy is found prior to pushback, the Maintenance Coordinator must be notified before leaving the gate. This designation is for heightened awareness for certain MEL items requiring MCC review, but not requiring Flight Superintendent (Dispatcher) approval. For example, this statement can be used to alert MCC personnel to items that have short time deferral limits, (Category "A" "B", items), repetitive maintenance checks, or items of high customer impact.
8. **Continuing Authorization (Single Extension)** – An aircraft operator who has the authorization to use an FAA – approved MEL may also have the authority to use a continuing authorization to approve a single (one-time) extension to the repair interval for category B or C items in accordance with Operations Specification D095. Continuing Authorization (Single Extension) is not authorized for repair category A and D items.
9. **Dash (-)** – Indicates a variable number (quantity) of the instrument and equipment items may be installed or required for dispatch. This is common when a fleet MEL is used since aircraft of the same make and model may have differing numbers of specific instrument and/or equipment items installed.

	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-6

10. **Day** - means the time between the beginning of morning civil twilight and the end of evening civil twilight, or approximately 30 minutes before official local sunrise and 30 minutes after official local sunset.
11. **Day of Discovery** - The calendar day an equipment / instrument malfunction was recorded in the aircraft maintenance log and/or record. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative instrument and/or item of equipment. This provision is applicable to all MMEL items, i.e., category's "A, B, C and D" and is based on UTC time ([see MEL Instructions](#)).
12. **Deactivated and Secured** - The specified component must be put into an acceptable condition for safe flight. An acceptable method of deactivating and securing will be established by the operator.
13. **DISP. APPR. REQ'D."** - Under NAME/DESCRIPTION, means that the approval of the controlling Flight Superintendent (Dispatcher) is required prior to takeoff. If the discrepancy is found prior to pushback, the approval must be received before leaving the gate. This approval is necessary to ensure that Flight Planning issues which result from this MEL item have been appropriately considered.
Any of the following constitute Dispatcher approval:
 - The MEL item number and description are indicated on the Flight Plan.
 - The Captain has received an amended release adding the MEL item number and description.
 - The Dispatcher and the Captain have communicated by telephone or radio and have agreed on the conditions of the dispatch.
14. **Electronic Fault Alerting Systems** - New generation aircraft display system fault indications to the flight crew by use of computerized display systems. Each aircraft manufacturer has incorporated individual design philosophies in determining the data that would be represented. The following are customized definitions (specific to each manufacturer) to help determine the level of messages affecting the aircraft's dispatch status.

For the Boeing 777:

- Boeing airplanes equipped with Engine Indicating and Crew Alerting Systems (EICAS), provide different priority levels of system messages (WARNING, CAUTION, ADVISORY, STATUS and MAINTENANCE). Any messages that affect airplane dispatch status will be displayed at a STATUS message level or higher. The absence of an EICAS STATUS or higher level (WARNING, CAUTION, ADVISORY) indicates that the system/component is operating within its approved operating limits or tolerances.
- System conditions that result only in a MAINTENANCE level message (i.e., no correlation with a higher level EICAS message) do not affect dispatch and do not require action other than when required during accomplishment of a Lower Order Check, Job Instruction Card, etc.
- The EICAS section of the MEL contains an EICAS Message List which includes System Alert (Warning, Caution, Advisory), Status level and Comm level messages and possible corresponding MEL relief. MEL relief is allowed provided all MEL Remarks or Exceptions and applicable (M) and/or (O) PROCEDURES are accomplished as written. Dispatch is prohibited with certain Status level messages displayed and are identified as "None" in the MEL Item X-Ref column. N/A will be listed in the MEL Item X-Ref column for messages that do not indicate a system failure.
- Under each MEL item there is a corresponding EICAS STATUS MESSAGES entry. This entry identifies those Status messages that *may* be associated with the item. If listed, the Status message(s) does not have to be displayed in order to utilize the MEL relief. MEL relief is allowed provided all MEL Remarks or Exceptions and applicable (M) and/or (O) PROCEDURES are accomplished as written.

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-7

15. **ER or ETOPS** - Refers to extended range operations for turbine-engine-powered passenger-carrying airplanes with two engines, whose flight planned routing contains a point farther than 60 minutes flying time from an adequate airport, computed using a one-engine-inoperative cruise speed under standard conditions in still air.
16. **ETO** deferral codes may be used when conditions occur where it becomes necessary to restrict ETOPS flight operations. In these cases, the MCC will determine the requirement for restricting the aircraft from ETOPS operations. Technicians at the station will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate ETO deferral code. These deferrals will restrict the aircraft to either 60 minutes or 120 minutes. Refer to MEL Chapter 05 ER (ETOPS). This deferral code requires MCC authorization prior to its usage or removal.
17. **Extended Overwater Operation or Flight** - An operation overwater at a horizontal distance of more than 50 nautical miles from the nearest shoreline.
18. **Flight Cycle** - One aircraft takeoff and subsequent landing.
19. **Flight Day** - A 24 hour period (from midnight to midnight) using UTC time, during which at least one flight is initiated for the affected aircraft.
20. **Flight Hours** - The time from the moment an aircraft leaves the surface of the earth until it touches it at the next point of landing (i.e., takeoff to landing time). "Flight hours" is identical to "time in service" as defined in 14 CFR.
21. **Heavy Maintenance Visit (HMV)** - As used in this MEL is a scheduled L/H/M, PSV, HMV or C-check.
22. **Icing Conditions** - An atmospheric environment that may cause ice to form on the aircraft (Structural) or in the engine(s) (Induction).
 - **Aircraft (Structural) Icing** is present when the aircraft surface temperature is between 0 degrees C and -40 degrees C and visible moisture in any form is present (such as clouds, fog with visibility of one mile or less, rain, snow, sleet and ice crystals).
 - **Engine (Induction) Icing** is present when the OAT, TAT or RAT is 10 degrees C or below and visible moisture in any form is present (such as clouds, fog with visibility of one mile or less, rain, snow, sleet and ice crystals).
23. **Instrument Meteorological Conditions (IMC)** – Meteorological conditions such as to require the flight to be conducted under Instrument Flight Rules.
24. **Inoperative** - When a system and/or component malfunctions to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limit(s) or tolerance(s).
25. **Inoperative components of an inoperative system** - Inoperative instrument and equipment items which are components of a system which is inoperative, are usually considered components directly associated with and having no other function than to support that system. (Warning/caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the MMEL).

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-8

26. **Is not used** – As stated in the provisos, remarks or exceptions for an MMEL instrument or equipment item may specify that another item relieved in the MMEL “is not used.” In such cases, crewmembers must not activate, actuate, or otherwise utilize that component or system under normal operations. It is not necessary for aircraft operators to accomplish the (M) PROCEDURES associated with the item. However, operational requirements must be complied with, and an additional placard must be affixed, to the extent practical, adjacent to the control or indicator for the item that is not used. This informs crewmembers that an instrument or equipment item is not to be used under normal operations.

27. **Known or Forecast Windshear Conditions:**

- Occurring at or below 1,000 feet,
AND
- Resulting in a loss or gain of greater than 15 knots indicated airspeed.

28. **LLM** – The definition of LLM when used in this manual is as follows:

- A. The FAA approves CAT II/III OpSpec's which allow aircraft to land in reduced weather minimums or Lower Landing Minimums (LLM). The LLM program allows an aircraft to be dispatched to Category II and/or III conditions as outlined in the aircraft Minimum Equipment List. The aircraft Auto Flight System may be utilized for LLM CAT I operations, or in some cases, CAT II and/or CAT III, depending on the item. The CAT II/III restriction will be noted in the MEL/CDL.
- B. The LLM CAT II/III status of an aircraft may be deferred and placarded by using the MEL deferral code. Several examples of where an LLM deferral will be implemented are:
 - 1) Aircraft was returned to service after unsuccessful autoland, but maintenance procedures were accomplished by non-Auto Flight Qualified (AFQ) authorized personnel which downgraded the aircraft from CATIII.
 - 2) An Autoflight system has had similar repetitive discrepancies.
 - 3) The scheduled auto land system check has not been accomplished.
- C. The LLM deferral code requires MCC authorization prior to its usage or removal. The aircraft LLM status is upgraded to CAT III by using maintenance procedures which must be accomplished by AFQ authorized personnel allowing removal of the LLM deferral.
- D. The following definitions should be used when making MEL compliance or aircraft equipage decisions prior to the dispatch event. Equipment failures that occur after that event will be referenced in the appropriate AOM (ILS Airborne Equipment Requirements). The values referenced below are not intended to reduce the minimum values published on any approach chart or reduce any crew qualification restriction.
 - 1) Basic Turbojet Minimums - A precision or non-precision approach to no less than RVR 4000 (1200m) or $\frac{3}{4}$ SM (1200m) visibility, and a DH of no less than 200 ft or MDH of no less than 250 ft.
 - 2) Category I Non-ILS - A non-precision approach to no less than RVR 2400 (550m) or $\frac{1}{2}$ SM (800m) visibility, and a MDH of no less than 250 ft.
 - 3) Category I ILS - A precision approach to no less than RVR 1800 (550m) or $\frac{1}{2}$ SM (800m) visibility, and a DH of no less than 200 ft.
 - 4) Category II - A precision approach to no less than RVR 1000 (300m) and a DH of no less than 100 ft. (Autoland required).
 - 5) Category III - A precision approach to no less than RVR 300 (75m) and an AH of no less than 50 ft. (Autoland required).

	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-9

29. **Local calendar day** – Means a 24-hour period (from midnight to midnight local time).
30. **(M) PROCEDURES** - The “(M)” symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally, these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Other personnel may include, but are not limited to Aircraft Maintenance Technicians, Flight Crews and Ramp Personnel. Procedures requiring specialized knowledge or skill or requiring the use of tools or test equipment should be accomplished by maintenance personnel. The satisfactory accomplishment of all maintenance procedures (M) PROCEDURES, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are published in this MEL/CDL.
31. **Non-Combustible Materials** - Materials that will not take fire and burn, ignite, support combustion or give off flammable vapors (e.g., sand).
32. **Nonessential Equipment and Furnishings (NEF)** - Items installed on the aircraft as part of the original type certification, supplemental type certificate, or other form of alteration that have no effect on the safe operation of flight and would not be required by the applicable certification rules or operational rules. They are those items that if inoperative, damaged or missing have no effect on the aircraft's ability to be operated safely under all operational conditions. These nonessential items may be installed in areas including, but not limited to, lavatories, and galley areas. NEF items are not instrument and equipment items already identified in the MEL or CDL of the applicable aircraft. They do not include instrument and equipment items that are functionally required to meet the certification rule or for compliance with any operational rule. See [TOPP 40-40-08](#).
33. **Notes** - As found under the "REMARKS or EXCEPTIONS" column provide additional information for flight crew, maintenance, or other personnel. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.
34. **(O) PROCEDURES** - The “(O)” symbol indicates a requirement for a specific operations procedure which must be accomplished in planning for and/or operating with the listed item inoperative. Normally, these procedures are accomplished by the flight crew (pilots); however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are published in this MEL/CDL.
35. **Operative** - An operative system and/or component will accomplish its intended purpose and is consistently functioning normally within its design operating limit(s) and tolerance(s). When an MEL item specifies that an item of equipment must be operative, it does not mean that its operational status must be verified; it is to be considered operative unless reported or known to be malfunctioning. When an MEL item specifies that an item of equipment must be verified operative, it means that it must be checked and confirmed operative at the interval(s) specified for that MEL item. When an MEL item specifies that an item of equipment must be verified but no interval is specified, verification is required only at the time of deferral. Other terminology sometimes used interchangeably with “operative” within the MEL is “operates normally”, “fully operative”, and “considered operative”.
36. **Proviso** – Conditions or limitations that must be complied with for operation with the listed instrument or equipment item inoperative. Provisos are indicated by a number or a lower case letter in “REMARKS or EXCEPTIONS”.
37. **RNP-5 Status (BRNAV)** - Deferral code may be used when it is determined that RNP-5 (BRNAV) airspace operations cannot be used and no specific MEL relief applies. This deferral code requires MCC authorization prior to its usage or removal.

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-10

38. **RNP-10 Status** - Deferral code that may be used when it is determined that RNP-10 airspace operations cannot be used and no specific MEL relief applies. This deferral code requires MCC authorization prior to its usage or removal.
39. **RVSM Status** - Deferral code may be used when it is determined that RVSM operations cannot be used, no specific MEL relief applies and the aircraft must remain at or below FL280. This deferral code requires MCC authorization prior to its usage or removal.
40. **Takeoff** - Is the act of beginning a flight in which an aircraft is accelerated from a state of rest to that of flight. For the purposes of MEL relief, this translates to the point at which the pilot physically begins to apply power for the purpose of taking flight.
41. **Time In Service** - Means the time from the moment an aircraft leaves the surface of the earth until it touches it at the next point of landing (as defined in 14 CFR). "Time In Service" is identical to "Flight Hours" (as defined in 14 CFR).
42. A **vertical bar (change bar)** - Indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.
43. **Visible Moisture** - An atmospheric environment containing water in any form that can be seen in natural or artificial light; for example, clouds, fog, rain, sleet, hail or snow.
44. **Visual Flight Rules (VFR)** - Is as defined in 14 CFR. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.
45. **Visual Meteorological Conditions (VMC)** – When the atmospheric environment is such that would allow a flight to proceed under the visual flight rules applicable to the flight. This does not preclude operating under Instrument Flight Rules.

MEL/CDL Format

The ATA System Page is divided into six (6) columns and contains: Item Number and Name/Description, Flight Crew May Placard, Number Installed, Number Required for Dispatch, Repair Category, and Remarks or Exceptions. The units on the Minimum Equipment List/Configuration Deviation List (MEL/CDL) are presented in accordance with the ATA chapter numbering system, and are coded by a six digit number. Under each ATA chapter code, the units are listed in a column by numerical sequence.

Within the complete MEL/CDL item, each associated sub-item is designated by a letter after each item number (24-00-01A, 24-00-01B, etc.). A sub-item may denote one or more of the following:

- Two or more alternatives available for dispatch ("or" item)
- Sub-system(s) of the Main MEL/CDL item
- Aircraft group applicability
- Types of operation for the MEL/CDL item (icing, no-icing, etc.)

The following provides an explanation of the scope and use of each of the columns as titled:

④ NUMBER INSTALLED		NUMBER REQUIRED FOR DISPATCH ⑤	
③ FLIGHT CREW MAY PLACARD		REPAIR CATEGORY ⑥	
① ITEM NO.	② NAME/DESCRIPTION	REMARKS OR EXCEPTIONS ⑦	
21-00-XX	Air Conditioning Packs "DISP.APPR.REQ'D."	Y	2 0 C ⑧ (M)(O) Both may be inoperative provided flight is conducted in an unpressurized configuration.

1. ITEM NO. - This column lists the MEL/CDL Number in ATA Number format.
2. NAME/DESCRIPTION - Below the manufacturer's name of an item, the commonly used terminology for an item may be included in parenthesis. The term "DISP. APPR. REQ'D." in this column is explained in the section, MEL Definitions. The term "Contact MCC" is explained in the section, MEL Definitions. When aircraft numbers or types (e.g. -700 aircraft) are specified in this column, it signifies the applicability of the relief to these aircraft only. However, if no aircraft numbers or types are specified, the relief applies to all the aircraft in that fleet. When applicability is specified by AA compliance, the MCC should be contacted to determine AA completion status for the affected aircraft.
3. FLIGHT CREW MAY PLACARD - This column serves as additional reference to the pilots for items that qualify for Flight Crew Placarding. These items will be identified by the letter "Y". Items NOT available for Flight Crew Placarding will be identified by the letter "N". See Placarding Procedures.
A "Y" in the Flight Crew May Placard column indicates all (M) or (O) PROCEDURES for that item may be performed or managed by the pilots (see MEL Definitions).
4. NUMBER INSTALLED - This column serves as a reference to the number of units installed on the aircraft. The number in this column will also be equal to or greater than the requirements in column five (Number Required For Dispatch).
5. NUMBER REQUIRED FOR DISPATCH - This column depicts the minimum number (quantity) of instrument and equipment items required for operation provided the conditions specified in the "Remarks or Exceptions" column are met.

NOTE: Reference Numbers 4 and 5 above: When a specific number of units installed / required for dispatch cannot be determined due to the numerous fleet configurations, a dash (-) will be shown in the column and the special limitations will be shown under REMARKS or EXCEPTIONS Column.

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-12

6. REPAIR CATEGORY - This column denotes the repair category of the item. The timing for each category item is listed below. Items which are without a category identifier are either Administrative or CDL items and may be inoperative without limit as noted in the REMARKS or EXCEPTIONS column.

Category "A" - Items in this category shall be repaired within the time interval specified in the REMARKS or EXCEPTIONS column of the operator's approved MEL. For time intervals specified in "calendar days" or "flight days," the day the malfunction was recorded in the aircraft logbook is excluded. For all other time intervals (flights, flight legs, cycles, hours, etc.), repair tracking begins at the point when the malfunction is deferred in accordance with the operator's approved MEL.

NOTE: Category "A" items are marked with background shading to highlight their significance.

Category "B" - Items in this category shall be repaired within three (3) consecutive calendar days (72 hours), excluding the day the malfunction was recorded in the Aircraft Maintenance Record / Logbook. For example, if it were recorded at 10 a.m. on January 26th, the three day interval would begin at midnight on the 26th and end at midnight the 29th.

Category "C" - Items in this category shall be repaired within ten (10) consecutive calendar days (240 hours), excluding the day the malfunction was recorded in the Aircraft Maintenance Record / Logbook. For example, if it were recorded at 10 a.m. on January 26th, the 10 day interval would begin at midnight the 26th and end at midnight February 5th.

Category "D" - Items in this category shall be repaired within one hundred twenty (120) consecutive calendar days (2880 hours), excluding the day the malfunction was recorded in the Aircraft Maintenance Record / Logbook.

NOTE 1: Category "A" and "D" items cannot be extended beyond the maximum repair interval as specified in the Minimum Equipment List (MEL).

NOTE 2: Category "B" and "C" items can be extended by the Shift Manager – MCC (see MEL Extensions).

7. REMARKS or EXCEPTIONS – This column may include a statement(s) either prohibiting or permitting operation with a specific number of instrument and equipment items inoperative, provisos (conditions and limitations) for such operation, appropriate notes, and repetitive check (see Repetitive Checks, this manual). Specific procedures which must be accomplished with the listed item inoperative are indicated by "(M)" and/or "(O)" symbols. The function of the (M) and (O) symbols is to denote that a procedure exists which must be conducted, and not to necessarily identify who accomplishes the procedure. The (M) and (O) PROCEDURE(s) will be listed in their entirety below the MEL item along with the applicable graphics and performance corrections, if any.

8. **(M) and (O) PROCEDURES** - Manufacturer's Procedures Manuals are used as a baseline to develop the procedures found in Delta's MEL/CDLs. The procedures found in manufacturer's Procedures Manuals are recommended by the manufacturer and are intended to be used as guidance for the operator in development of their own procedures. The MEL Program Group has the responsibility for developing all applicable (M) and (O) Procedures found in Delta MEL/CDLs (see [TOPP 30-20-20](#)).

The (M) and (O) Procedures found in Delta MEL/CDLs may require accomplishment of various routine maintenance and/or pilot actions. In order to keep the size of MEL/CDLs manageable, normal procedures and associated warnings related to activating/deactivating aircraft electrical, pneumatic and hydraulic systems, operating flight controls or engines, etc., are not reproduced in Delta MEL/CDL (M) or (O) Procedures. These normal procedures and precautions are found in applicable TOPP documents, Aircraft Maintenance Manuals, Operations Manuals, Quick Reference Handbook, FOM, etc., and must be followed when accomplishing (M) and/or (O) Procedures.

	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-13

For MEL items that restrict cargo loading (bin empty or only empty cargo handling equipment, ballast and fly-away kits), only the items listed below are approved for carriage in the affected bin(s).

- Ballast sand bags (bulk loaded or in ULDs)
- Empty ULDs (containers and/or metal pallets)
- CRAF Mission Fly-Away-Kits (contents listed below)

Main Wheel Assy (2 ea)	IDG Service Pot	WXR Trans
Nose Wheel Assy (2 ea)	Starter	MMR
85 Ton Jack (2 ea)	Start Valve	Radio Altimeter
Tire Dolly	ELMs Relay (3ea)	APU Battery
Torque Wrench	Ram Air Door Hinge (2 ea)	Battery Charger
MLG/NLG Socket	Ram Air Door Plate	Contactor
Oil Case (2 ea)	HF Trans	Engine A/I Valve

NOTE 1: Aircraft /APU battery and containers of hydraulic fluid (Skydrol), oil, and servicing equipment that contain fluids, must be removed from the fly-away kit and located within an operative bin.

NOTE 2: Verify Main and Nose Wheels are inflated to minimum shipping pressure of 50 psi.

Remarks on the Weight Data Record (WDR) will provide verification to flight crews that bin(s) is empty or contains only approved materials as listed above.

MEL Videos

Within the (M) PROCEDURES throughout the MEL you may find the following icon and text.



[Link to Learning Video – \(Example: 36-11-02A\)](#)

This icon will link the user to a TechOps Learning Video. It is not a mandatory requirement of the (M) PROCEDURES that the Learning Video be viewed.

The “Intro to the MEL” video below does not supersede the MEL Front Matter. It is not intended to be a substitute for the instructions in the MEL Front Matter or any referenced TOPP documents.



[Link to Learning Video](#)

Disclaimer

Learning videos are intended to communicate basic ideas and concepts, and are not a substitute for approved manuals and work documents. Always refer to approved, controlled documentation or other stated reference material for the latest information when performing any maintenance or operations procedures.

	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-14

Repetitive Check Requirements

The REMARKS or EXCEPTIONS column of some MEL/CDL items is annotated with “Repetitive Check Required (Yellow Placard)”. A yellow placard will be installed as stated in the Placard Types section, and the Captain must ensure that required repetitive checks are accomplished by the appropriate personnel per the instructions for the MEL.

NOTE: At non-maintenance stations where a pilot is not qualified to accomplish the check, contact the Maintenance Coordinator or ACS personnel per TOPP 40-20-15 and the FOM for help in procuring contract maintenance.

The four Repetitive Checks are:

A. PRIOR TO EACH DEPARTURE

It is the Captain’s responsibility to manage these items by either checking the item himself or by advising Maintenance personnel a check is required. Enter the check into the Aircraft Log Book when “Log Book Entry Required” is listed in the MEL/CDL item.

NOTE: If a takeoff is aborted, the captain determines if it is necessary to repeat this type of check.

B. ONCE EACH FLIGHT DAY

The ONCE EACH FLIGHT DAY check is normally accomplished during a layover, but may be accomplished at any station as long as it is accomplished once each flight day. Enter the check into the Aircraft Log Book. The Repetitive Check is accomplished when the item is deferred on the ‘Day of Discovery’ (see Definitions), and fulfills the requirement of the Repetitive Check for that flight day.

C. PRIOR TO THE FIRST FLIGHT OF THE DAY

The check must be entered into the Aircraft Log Book as being accomplished per MEL/CDL requirement.

D. CONDITIONAL REPETITIVE CHECK

The MEL/CDL Remarks or Exceptions column may specify conditional repetitive check requirements, i.e., “BEFORE ENGINE START” or “AFTER FLIGHT CONTROL CHECK.” The Remarks or Exceptions column for these MEL/CDL items will be annotated with “Repetitive Check Required (Yellow Placard)” and may require a logbook entry.

Placard Instruction Table

The following instructions are applicable to the MEL/CDL placard tables. Each inoperative instrument or equipment item must be placarded to inform and remind the crewmembers and maintenance personnel of the item condition. To the extent practical, placards should be located adjacent to the control or indicator for the item affected as specified in the TAB LOCATION column. When the Tab Location column states N/A, no tab is required.

① MEL/CDL ITEM	② TAB LOCATION	④ PLACARD TEXT
34-00-xx	1. #1 Radio Altimeter Indicator 2. GPWS Switch	1. #1 Radio Altimeter Indicator INOP 2. GPWS INOP

MEL/CDL ITEM	TAB LOCATION	PLACARD TEXT
21-00-XX	③ Associated Pack Switch	⑤ _____ Air Conditioning Pack INOP

①	MEL/CDL ITEM - Lists the specific MEL/CDL item number.
②	TAB LOCATION - Place the TAB on or adjacent to the listed switch, indicator, lever, etc., that controls the inoperative unit/system. Multiple TAB locations may be listed for one MEL/CDL item and will be listed numerically in this column as indicated in the above example. When multiple TABs are required, use tabs from additional Aircraft Placards and discard the large unused portion of the placard. Record the same Log or Control No. on each TAB. Place a TAB at each listed location.
③	The term "associated" or "affected" may appear in this column. For example, with a <i>left</i> pack inoperative, the "associated" pack switch is the <i>left</i> switch; with a <i>left</i> boost pump LOW PRESSURE light inoperative, the "affected" LOW PRESSURE light is the <i>left</i> light. Place the TAB(s) on or adjacent to the associated or affected item(s) listed in this column.
④	PLACARD TEXT - A description of the inoperative unit/system to be recorded on the large portion of the Aircraft Placard that is placed in the Aircraft Log Book. Failures of certain systems may cause other systems to be inoperative or require other systems to be considered inoperative. All affected systems will be listed numerically in this column as indicated in the above example. All listed systems are to be recorded on a single Placard. NOTE: Commonly used terms or abbreviations may be substituted for TEXT listed in this column. Additional information that will enhance Flight Crew and Maintenance awareness of the inoperative system/component may be included at the discretion of the individual installing the Placard.
⑤	When there are multiple units or components within a system, a space (____) will be included in this column indicating a descriptive term or position (i.e., left, right, #1, #2, forward, aft, upper, lower, etc.) must be recorded on the placard in addition to the PLACARD TEXT.

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-16

Placard Types

All deferred MEL/CDL items require a Placard to be installed. Placards for the affected item should be located as specified in the TAB LOCATION column.

The following placards are used by both pilots and maintenance personnel:

- A. **White Placard** - The MEL Placard, form 0412-40441, serves as a visual indication to Maintenance personnel and flight crews that a unit or system on the aircraft is inoperative, missing, or restricted to limited operation. The white placard is used for all MEL/CDL items and other deferred items which do not require a Repetitive Check.
 - A placard may also be installed to give advisory information to the pilots about a particular item, such as recent maintenance performed on aircraft systems or major components.
 - On all advisory or information placards, use the white placard and write "N/A" in the MEL Reference Block.
 - In some instances, it is necessary to notify Maintenance personnel and flight crews of special installations or engineering modifications that have been accomplished on a particular aircraft. An information placard or Project Operation and Maintenance Information Form (EP-19) placed in the Aircraft Log Book can be used to accomplish this notification.
 - If an EP-19 Form is used, it will be placed inside a clear plastic sleeve located in the Aircraft Log Book.
- B. **Yellow Placard** - The MEL Placard, form 0412-40512, also provides a visual indication to advise Maintenance personnel and pilots that a unit or system is inoperative, missing, or restricted to limited operation and that a "Repetitive Check" is required. The MEL/CDL will state, in capital letters, when the checks are required. For those MEL/CDL items that require repetitive checks (i.e., "Prior to Each Departure," "Prior to the First Flight of the Day," "Once Each Flight Day", or "Conditional Repetitive Check"), a yellow placard must be installed to advise downline Maintenance personnel and the captain of the repetitive check requirement. Yellow placards may also be used for items deferred per the Maintenance Manual or other approved manuals which require a repetitive check (e.g., fluid leaks).
- C. **Use of Red Tape Placard** - While the tape placard is designed primarily for use in placarding passenger seats as unserviceable, it may be used to placard other unserviceable cabin equipment, such as lavatories. Additionally, the tape placard may be used in conjunction with a "placard" as an attention-getting device. When used in this manner, the "PLACARD" tab shall be affixed to the face of the tape placard.

Performance Instructions

The enroute performance penalties in this MEL/CDL are applied to all flights by the Flight Control Dispatcher when analyzing the flight plan using the FPS flight planning system. The penalty is entered as an Enroute Driftdown Penalty in FPS and applied in FPS by increasing the weight of the aircraft by the penalty amount. The flight planning system will then access the driftdown tables at the penalized, increased weight to determine the driftdown weight limit. One-engine inoperative performance limitations (under FAR 121.191) will be applied where most restrictive. Transoceanic operations are conducted under ETOPS rules and use the same MEL performance penalty method.

A sample Performance Correction for a MEL item is shown below. The contents of the Performance Correction box should be used in conjunction with the other limitations and procedures in the MEL for the applicable dispatch. A quick-reference guide to the Performance Correction is provided below. It is important to note that items appearing above the double line should be considered by all users including the flight crew and dispatcher. Items below the double line are primarily for flight crew or LCC use. Use the appropriate box depending on the type of Weight Data Record (WDR) generated.

NOTE: The Performance Correction shown below is provided for training purposes only and should not be used for MEL 21-25-01A. Additionally, the sample MEL item below may not reflect the most current information.

Example:

①	21-25-01A	Right Recirculation Fan
②	EFFECTIVITY	All
③	FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 0.3%.
④	NOTES	None
⑤	AWABS	Performance corrections have been applied.
⑥	TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

1. MEL/CDL Number and Title.
2. Effectivity: Aircraft affected by the subject MEL/CDL item.
3. Flight Planning Requirements: Requirements that must be taken into account prior to the flight.
 - These items will be the responsibility of the dispatcher and must be taken into account prior to the flight.
 - Examples of Flight Planning Requirements can be, but are not limited to, Enroute Climb Limit Weight or Block Fuel adjustments.
4. Notes: Other pertinent information applicable to this MEL item.

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-18

5. AWABS: Contains information regarding functionality applied by AWABS. One of the two following statements will be published:
- “Performance corrections have been applied” indicates that the AWABS document contains all applicable MEL adjustments and that no further Flight Crew action is required.
 - “Performance weight corrections have been applied” indicates that only the weights listed on the AWABS document contain the applicable MEL/CDL adjustments. This statement is followed by a specific action (or actions) required by the Flight Crew. Example – “Performance weight corrections have been applied. Reduce V1 by 3 KIAS.” These statements advise that the performance weight corrections have been applied by AWABS, but the Flight Crew must reduce the V1 noted on the AWABS document by 3 KIAS.

6. Takeoff Performance Worksheet: LCC (Load Control Center) will complete this Worksheet (including performance corrections shown in this section) and a copy will be provided to the flight crew when dispatched with a Manual WDR. This section contains three subsections: Takeoff, Landing, and Other Corrections. The section titled “Other Corrections” will only appear if other corrections are to be performed.

NOTE: Performance decrements specified in this section of the performance box are simplified and conservative for the manual computation of takeoff and landing limit weights. AWABS produces more precise weights based on runway length and obstacles. Therefore, comparing AWABS documents with and without an MEL item will frequently produce significantly different results than weights specified in the Takeoff Performance Worksheet section of the performance box.

TAKEOFF

- Runway Allowable Takeoff Weight adjustment.
- Takeoff Climb Limit Weight adjustment.

LANDING

- Runway Allowable Landing Weight adjustment.
- Approach/Landing Climb Limit Weight adjustment.
- Maximum Quick Turnaround Landing Weight adjustment.

OTHER CORRECTIONS

- V-speed adjustments.
- Landing speed adjustments.
- EPR or N1 adjustments.

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-19

MEL/CDL Use (Maintenance)

During Service Checks maintenance personnel will review the aircraft log book for the previous 10 days to ensure any open MEL deferrals are active in LMOS, reference the service check AMDS work card for each fleet. Maintenance personnel will call the MCC in ATL at 404-715-0088 (ext. 5-0088) or 1-800-DELTAMC (1-800-335-8262) immediately if any open MEL/CDL item is not listed on the current MEL/CDL Item List (tran code MEL).

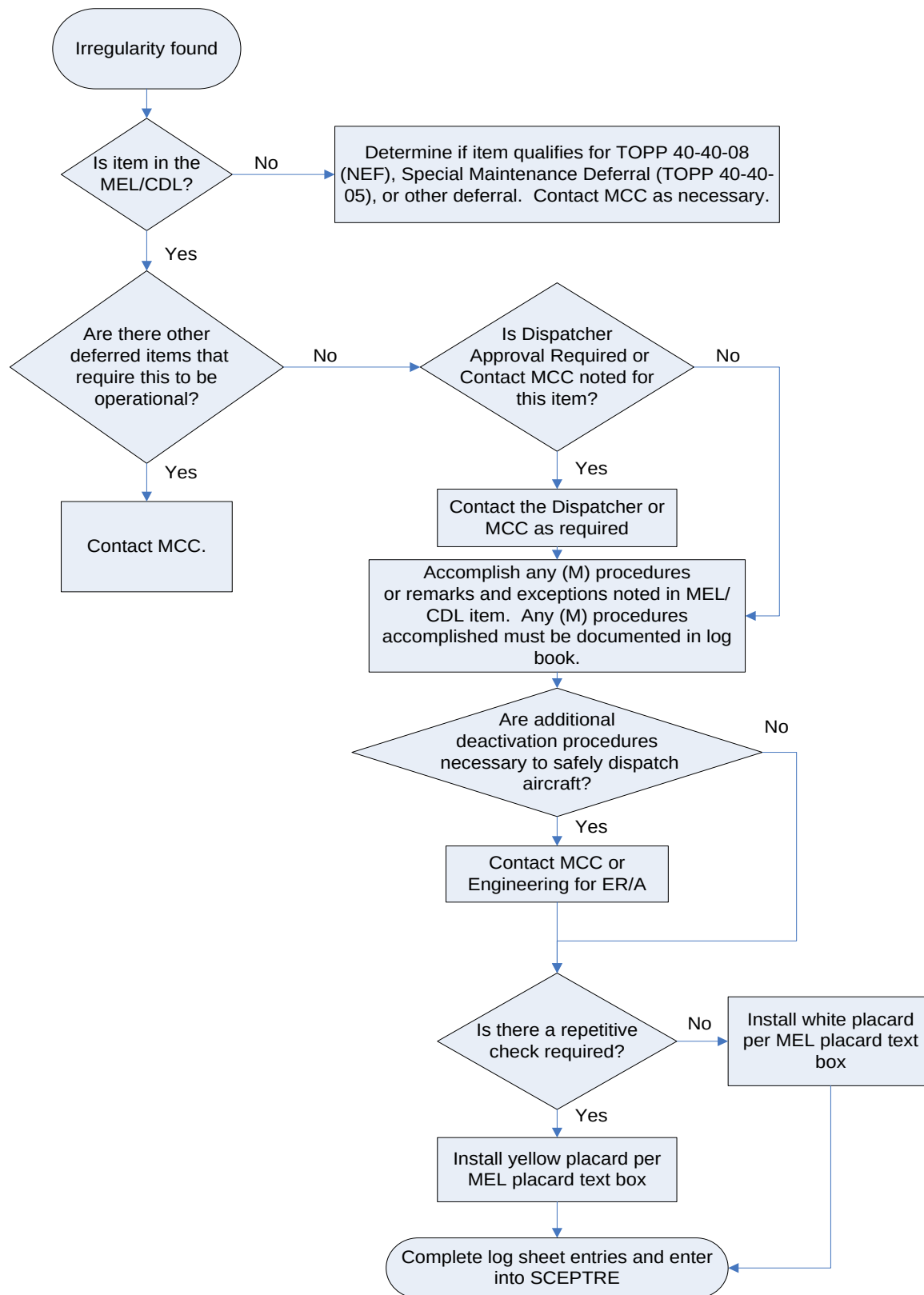
NOTE: If it is determined that a Repair Category 'A' item cannot be cleared prior to flight release from layover, the mechanic assigned to the aircraft must call Aircraft Routing, ATL, ext. 5-0222, to determine if there is sufficient flight time remaining to allow the aircraft to reach the next layover, or to reach a station where the repairs can be accomplished.

To document an MEL/CDL item in the log book and install the appropriate placard, Delta AMTs or contract maintenance vendors, under the guidance of MCC, must adhere to the following procedure:

1. When an irregularity is found, verify that the item is not already deferred (do not duplicate a log book entry). Document the irregularity in the aircraft log book in accordance with TOPP 50-10-05.
2. Determine if the item is in the MEL/CDL. If not, contact the MCC through Dispatch to determine if the item qualifies for deferral as NEF (see TOPP 40-40-08), or some other deferral method.
3. Determine that other deferred items do not require this item to be operational. If so, contact the MCC before continuing.
4. If required by the item, Contact Dispatch or MCC to gain authority to defer the item.
5. Accomplish all (M) PROCEDURES and instructions noted under the Remarks and Exceptions column in the MEL/CDL.

If a procedure requires a circuit breaker(s) to be pulled and secured, use the orange circuit breaker collar(s). If orange collars are not available, secure the required circuit breaker(s) via alternate means (e.g., Tyrap or other positive securing means) and annotate in the IRO section of the log book, "Missing orange CB collar(s)".

6. If any additional deactivation is required to safely dispatch the aircraft, contact MCC or Engineering for authority and documentation. Record all actions in the log book and install a placard.
7. Determine if a Repetitive Check is required. If so, install a yellow placard according to the MEL placard text box. If the repetitive check is an (M) procedure, comply with check in accordance with instructions.
8. If item does not require a Repetitive Check, install white placard according to the MEL placard text box (see Placarding Instructions, this manual).
9. Enter "Deferred per MEL/CDL xx-xx-xx" in the IRO section of the log book. If the MEL/CDL deferral includes a (M) procedure, compliance must be documented in the IRO section (example: (M) PROCEDURES complied with).



 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-21

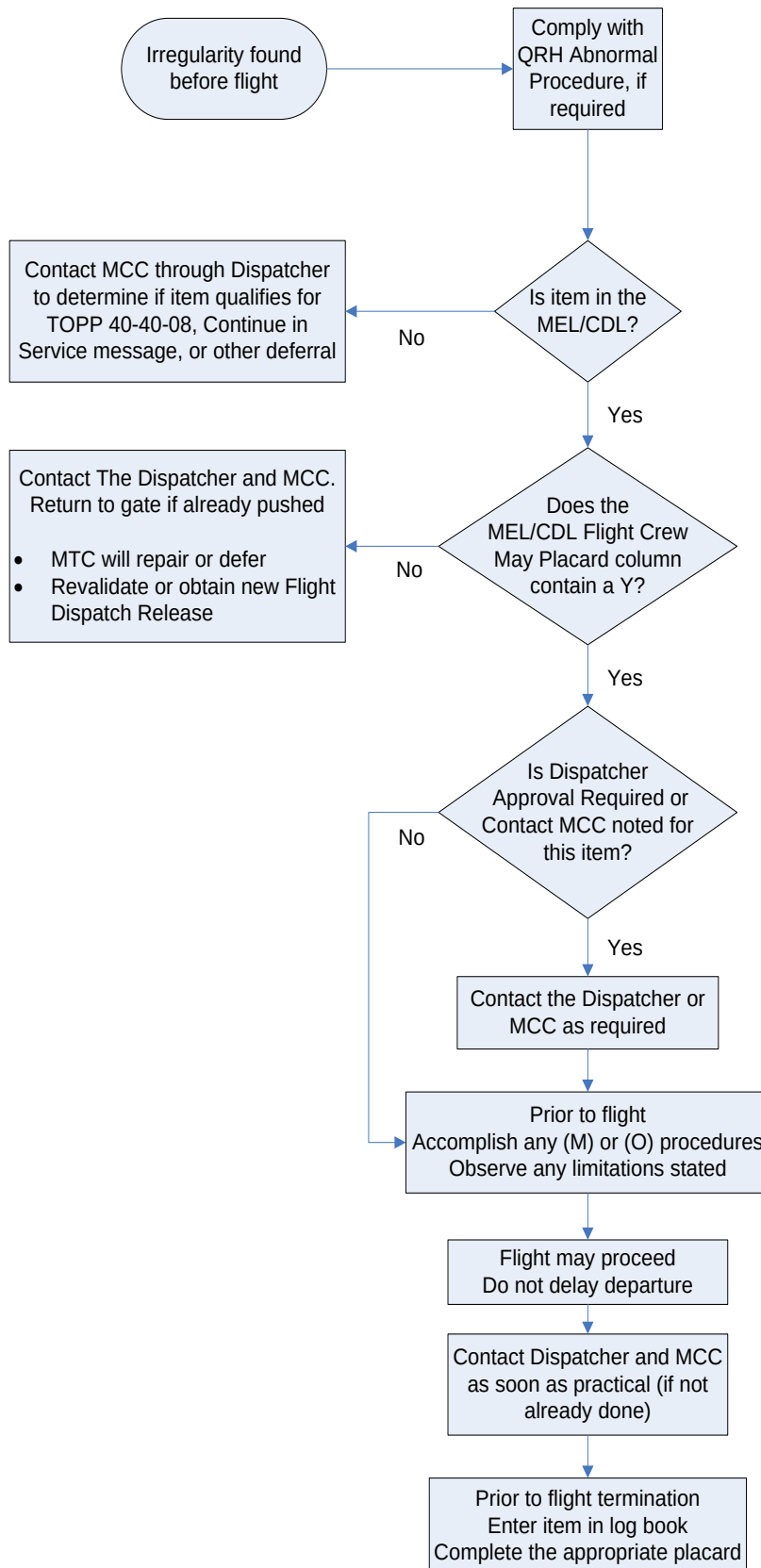
MEL/CDL Use (Pilots)

The MEL/CDL must be reviewed by the flight crew prior to flight to ensure compliance with all limitations and/or procedures associated with each deferred item. Systems/components deferred per the MEL will not be activated, actuated or otherwise utilized under normal operations. Elements, features or functions of deferred systems must not be used if their use will adversely affect the safe operation of the aircraft.

Pilots may document and install the appropriate placard when the MEL/CDL item denotes a 'Y' in the 'Flight Crew may Placard' columns, or when authorized under the NEF Program (see TOPP 40-40-08). In this case, the pilots may perform any required (M) or (O) PROCEDURES (see MEL/CDL Instructions section). To document an MEL/CDL item, the pilot must take the following actions:

1. When an irregularity is found, comply with the QRH Abnormal procedure if required. Verify that the item is not already deferred. Do not duplicate a log book entry.
2. Determine if the item is in the MEL/CDL. If not, contact the MCC through Dispatch to determine if the item qualifies for deferral as NEF (see TOPP 40-40-08), Continue in Service (TOPP 40-40-05), or other deferral method.
3. If the item is in the MEL/CDL, determine if the item contains a 'Y' under the Flight Crew May Placard column. If there is not a 'Y', contact the MCC through Dispatch and return to the gate if already pushed. Maintenance will repair or defer the item. Revalidate or obtain a new Flight Release as necessary.
4. If the item contains a 'Y', determine if "Dispatch Approval Required" or "Contact MCC" is indicated. Contact Dispatch and/or MCC as required.
5. Prior to flight, accomplish all (M) and (O) PROCEDURES and any instructions noted for the item under the Remarks and Exception column in the MEL/CDL and observe any restrictions or limitations.
If a procedure requires a circuit breaker(s) to be pulled and secured, use the orange circuit breaker collar(s). If orange collars are not available, secure the required circuit breaker(s) via alternate means (e.g., Tyrap or other positive securing means) and annotate in the IRO section of the log book, "Missing orange CB collar(s)" next to the "Flight crew installed placard at XXX." remark.
6. The flight may proceed without delay. Contact Dispatcher and MCC as soon as practical (if not already done). Logbook entry (see TOPP 50-10-05) and placard (see Placards, this manual) must be completed prior to flight termination.

The log book must have the discrepancy written in the IRF block. Under the direction of MCC, complete the IRO "Correction/Deferral" portion of the Aircraft Maintenance Log. Flight crews completing the deferral will enter the phrase, "Flight Crew Placard Installed at (station) per MEL (xx-xx-xx) followed by the captain's title, name, six digit employee number, the Maintenance Coordinator's title, name, and six digit employee number in the IRO block. The Mech. Signature or SIGNATURE block will be signed by the AMT.



MEL Expiration / Removal

- Expiration dates/times are based on UTC time. Under normal circumstances the aircraft must arrive at the destination station prior to midnight of the expiration date (UTC time). This applies to all Category A, B, C, and D items. If the aircraft cannot arrive at the destination station prior to midnight, due to an unexpected delay (maintenance, flight exception, weather, ATC flow control, etc.), the MCC Shift Manager may approve the flight departure provided the aircraft departs (departs for this policy means an "OUT" time has been sent or all doors closed) prior to midnight (UTC time) of the expiration date. In the event of any additional unexpected delay (ATB, DIV, RTB, etc.), the aircraft may still depart (depart for this policy means an "OUT" time has been sent or all doors closed) prior to midnight (UTC time) of the expiration date. If the delayed departure time is expected to be after midnight, the item must either be repaired, or reviewed by the MCC Shift Manager for possible extension (Category B, C) prior to further revenue flight.
- The Captain and the Maintenance Coordinator have joint responsibility to ensure that MEL expiration periods are not exceeded for MEL/CDL Category B, C and D items. The MCC is solely responsible for monitoring the expiration of Category A items and non-MEL items. The MEL serves as the primary reference source for category and expiration period guidance.
 - The expiration period of category "A" items is defined as the time interval specified in the REMARKS or EXCEPTIONS column of the operator's approved MEL/CDL. For time intervals specified in "flight days," the day the malfunction was recorded in the aircraft logbook is excluded. For all other time intervals (flights, flight legs, cycles, hours, etc.), repair tracking begins at the point when the malfunction is deferred in accordance with the operator's approved MEL/CDL.
 - The MEL/CDL should always be consulted regarding limitations and restrictions. The flight plan MEL/CDL expiration information should be used as a cross-check, not a substitute, for reviewing the MEL/CDL. If any MEL/CDL item in the log book is not listed in the flight plan, check the MEL for its category and expiration period based on the "Day of Discovery" (see *MEL Definitions*).
 - The Captain shall contact the MCC in accordance with the FOM with any questions concerning MEL currency.

MEL/CDL Category	MEL/CDL Expiration Time	Extendible?	Who is responsible for MEL/CDL currency?
A	Time interval specified in MEL	No	MCC
B	3 Days	Yes	Pilot and MCC
C	10 Days	Yes	Pilot and MCC
D	120 Days	No	Pilot and MCC
N/A ¹	Item specific (Not in MEL)	Item specific (Not in MEL)	MCC

¹NOTE: A MEL placard may be placed in the logbook which identifies other components / systems not specifically referenced in the MEL. This is done for administrative tracking purposes. These items do not have a MEL Number and the placard MEL/CDL Reference Number block will indicate "N/A" (not applicable). The Captain is not responsible for verification of the expiration period for this type of entry.

 DELTA	B777 Minimum Equipment List	Front Matter	R14 05/09/16 Page FM-24

- The MEL/CDL references and expiration dates/times will be listed in the "FLIGHT CONTROL & MAINTENANCE REMARKS" section of the Delta Flight Plan to help verify MEL/CDL information and currency.

The following examples show how MEL/CDL information will appear on the flight plan:

Category A items

M78-34-01 REVERSER UNLOCK INDIC/AMBER U/L/--1INOP
 **CATEGORY A MEL

Category B, C and D items

M32-46-01C TIRE PRESSURE INDICATIONS - UP TO 12 INOP
 MEL EXPIRATION DATE - 20MAR95 AT 2400 UTC

Extensions of Expiration Date

When a B or C category item has expired and cannot be cleared prior to the next flight release, the appropriate Maintenance Coordinator - MCC must be contacted for possible extension approval. See [TOPP 40-40-05](#) for instructions on MEL extensions.

Removal of a Deferral

When documenting the removal of a MEL/CDL deferral in the IRO section of the log page, indicate the action(s) taken to reactivate previously deactivated systems/components, and a statement that the item is cleared (system reactivated and placard removed).

RNAV Minimum Requirements

The chart below should be used when making MEL compliance or aircraft equipage decisions prior to the dispatch event (See MEL Front Matter, Delta's MEL/CDL Authority and Scope). Equipment failures that occur after that event will be referenced in the OM (Operations Manual Volume 1). The values referenced below are not intended to reduce the minimum values published on any approach chart or reduce any crew qualification restriction.

To use the chart, locate the MEL number for the system being deferred. Read the columns to the right of the appropriate MEL number to determine the number of systems required for the type of operation under consideration.

MEL Item on Deferral	Number Required						
	ADS-B	RNP-2	RNP-4	RNAV ENROUTE	RNAV SID/STAR	RNAV Approach	
						RNAV (GPS), GPS, NDB, or VOR using LNAV/VNAV	RNAV (RNP)
22-11-01: Autopilot Flight Director Computers	0	1	1	1	1	1	2
22-11-02: Autopilot Backdrive Actuator Systems	0	and 1	and 1	and 1	and 1	and 1	and 2
		OR	OR	OR	OR		AND
22-11-06: MCP – F/D Switches and	0	1	1	1	1	0	2
22-11-10: Flight Director Systems	0	and 1	and 1	and 1	and 1	0	and 2
22-11-06: MCP – Autopilot Engage Switches	0	0	0	0	0	1	2
22-11-06: MCP – Autothrottle ARM Switches	0	0	0	0	0	0	1
22-11-06: MCP – LNAV Switch	0	0	0	0	1	1	1
22-11-06: MCP – VNAV Switch	0	0	0	0	0	1	1
22-11-09: Takeoff/Go-Around (TO/GA) Switches	0	0	0	0	0	0	1
22-31-01: Autothrottle System	0	0	0	0	0	0	1
22-31-02: Autothrottle Servo Motors	0	0	0	0	0	0	1
23-15-01: Satellite Communication Systems (SATCOM)	0	1	1	0	0	0	0

CONTINUED NEXT PAGE

MEL Item on Deferral	Number Required						
	ADS-B	RNP-2	RNP-4	RNAV ENROUTE	RNAV SID/STAR	RNAV Approach	
						RNAV (GPS), GPS, NDB, or VOR using LNAV/VNAV	RNAV (RNP)
23-27-01: Data Communication Management System	0	1	1	0	0	0	0
23-27-01: Automatic Dependent Surveillance Function (ADS-C)	0	1	1	0	0	0	0
23-27-02: Flight Deck Communications System (ACARS Data Link)	0	1	1	0	0	0	0
34-21-03: ADIRU ^①	0	0	0	0	1	1	1
34-46-01: EGPWS Terrain Awareness Function	0	0	0	0	0	0	1
34-53-01A: ATC Transponder	1	0	0	0	0	0	0
34-53-01D: ADS-B Extended Squitter Transmissions	1	0	0	0	0	0	0
34-55-01: Distance Measuring Equipment (DME)	0	0	0	1 or	1 or	1	0
34-58-01: Global Positioning Systems (GPS)	1	2	2	1	1	1	2
34-61-01: Flight Management Computing Systems (FMCS)	1	2	2	1	1	1	2
34-61-01: Navigation Databases	0	1 ^②	1 ^②	1 ^②	1 ^②	1 ^②	1 ^②

① This item is for an ADIRU Status Message only.

② Authorized with 1 or 0 if MEL 34-61-01 NAV Database (O) PROCEDURE is successfully accomplished.

CONTINUED NEXT PAGE

Low Weather Minimum Requirements**APPROACH CATEGORIES**

The following definitions should be used when making MEL compliance or aircraft equipage decisions prior to the dispatch event. Equipment failures that occur after that event will be referenced in the appropriate QRH (ILS Airborne Equipment Requirements). The values referenced below are not intended to reduce the minimum values published on any approach chart or reduce any crew qualification restriction.

Basic Turbojet Minimums:

A non-precision or precision approach to no less than RVR 4000 (1200m) or $\frac{3}{4}$ SM (1200m) visibility, and a DH of no less than 200 ft or MDH of no less than 250 ft.

Category I Non-ILS:

A non-precision approach to no less than RVR 2400 (550m) or $\frac{1}{2}$ SM (800m) visibility, and a MDH of no less than 250 ft.

Category I ILS:

A precision approach to no less than RVR 1800 (550m) or $\frac{1}{2}$ SM (800m) visibility, and a DH of no less than 200 ft.

Category II:

A precision approach to no less than RVR 1200 (350m) and a DH of no less than 100 ft.

A precision approach to no less than RVR 1000 (300m) and a DH of no less than 100 ft.

Category III:

A precision approach to no less than RVR 300 (75m) and an AH of no less than 50 ft.

Note: See Airway Manual for ground-based equipment requirements.

SEE NEXT PAGE FOR EQUIPMENT REQUIREMENTS

LOW WEATHER MINIMUM APPROACHES: EQUIPMENT REQUIREMENTS

To use the chart, locate the MEL number for the system on MCO. Read the columns to the right of the appropriate MEL number to determine the number of systems required for the type of approach under consideration.

MEL Item	Number Required for Approach				
	Basic Turbojet Min.	CAT I Non-ILS	CAT I ILS	CAT II	CAT III
22-11-01: AFDC and / or ❶ 22-11-10: Flight Director Systems	❷	1 and 0	1 or 1	2 and 2	3 and 2
22-11-02: Autopilot Backdrive Actuator Systems	❷	1	1	1	2
22-11-06: MCP A/P Engage Switches	❷	1	0	1	1
22-11-06: MCP Autothrottle Arm Switches	0	0	0	0	2
22-11-06: MCP A/T Engage Switch	0	0	0	0	1
22-11-06: MCP F/D Switches	0	0	1	2	2
22-11-06: MCP APP Switch	0	0	1	1	1
22-11-07: Automatic Landing System (AUTOLAND)	0	0	0	1	1
22-11-07: Triple Channel Autoland (LAND 3)	0	0	0	0	1
22-11-08: Control Wheel Autopilot Disconnect Switches	0	0	1	2	2
22-11-09: TO/GA Switches	0	0	0	1	2
22-31-01: Autothrottle System	0	0	0	0	1
22-31-02: Autothrottle Servo Motors	0	0	0	0	1
22-31-03: Autothrottle Disconnect Switches	0	0	0	0	1
27-02-03: Primary Flight Computer (PFC) Channels	2	2	2	2	3
30-31-01: Pitot Probe Heaters (L, C, R)	2	2	2	2	3
30-42-01: Windshield Wipers	0	0	0	2	2
30-42-01: Windshield Wiper High Speed Function	0	0	0	2	2
31-51-05: Warning Electronic System (WES) Autopilot Disconnect Warning Function	0	0	0	1	1
32-42-01: Normal Antiskid Valves	10	10	10	10	12
32-42-02: Antiskid Wheelspeed Transducers	10	10	10	10	12
32-45-01: Wheel Brakes	10	10	10	10	12
34-21-03: ADIRU Faults	❸	❸	❸	❸	❹
34-21-04: Pitot Air Data Modules (L, C, R)	2	2	2	2	3
34-21-05: Static Air Data Modules (L, C, R)	2	2	2	2	3
34-31-01: Instrument Landing Systems (ILS)	❺	❺	1	2	3

CHART CONTINUED NEXT PAGE

MEL Item	Number Required for Approach				
	Basic Turbojet Min.	CAT I Non-ILS	CAT I ILS	CAT II	CAT III
34-31-02: Glide Slope Antenna Switching	⑤	⑤	1	2	3
34-31-03: Localizer Antenna Switching	⑤	⑤	1	2	3
34-32-01: Marker Beacon System	⑤	⑤	0	0	0
34-33-01: Radio Altimeter Systems	2	2	2	2	3
34-51-01: VOR Navigation Systems	⑤	⑤	1	2	2
34-55-01: DME	⑤	⑤	1	1	1
34-57-01: ADF Systems	⑤	⑤	0	0	0
34-58-01: Global Positioning Systems	⑤	⑤	0	0	0

- ❶ If operable, both autopilot and flight director will be utilized for all ILS approaches when the reported weather is below RVR 4,000 or $\frac{3}{4}$ mile.
- ❷ Autopilot required for Non-ILS approaches.
- ❸ ADIRU Status Message may be displayed.
- ❹ ADIRU Status Message must NOT be displayed.
- ❺ One or more of these systems may be required as noted on the approach plate.

 DELTA	B777 Minimum Equipment List	Navigation Equipment	R14 05/09/16 Page NE-6

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Aircraft / Engine Configurations

Aircraft / Engine Configuration

Aircraft Ship Numbers

777-200ER RR895

7001 - 7008

777-200LR GE90-110B

7101 - 7110

 DELTA	B777 Minimum Equipment List	Aircraft / Engine Configurations	R14 05/09/16 Page AE-2

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EICAS Message List

CROSS REFERENCE LIST

A Cross Reference List of Engine Indication and Crew Alerting System (EICAS) messages and corresponding MEL items is provided in this section. The Cross Reference List is intended to assist personnel in quickly identifying the proper MEL item to consult for possible dispatch relief. All EICAS messages at Status level or higher are listed by message text in alphabetic order. A description of the information provided in each column of the Cross Reference List follows.

Message Text	This column alphabetically lists each message exactly as they would appear on EICAS.	
Level	The appropriate EICAS message level is listed: Warning, Caution, Advisory, Memo, Comm, or Status.	
MEL ITEM	This column lists the appropriate MEL item(s) to consult for possible dispatch relief with the associated message displayed. EICAS messages that do not have a specific MEL item to allow dispatch are listed with one of the following cross references:	
	N/A	Not Applicable: There is no MEL item listed because the message does not indicate a system failure.
	None	There is no MEL item for the failure condition indicated by this message. Dispatch is prohibited with the message displayed.

EICAS MESSAGES

EICAS is the primary means of displaying airplane system information to the flight crew. EICAS consolidates engine and subsystem indications and provides a centrally located crew alerting function. EICAS displays System Alerts (Warning, Caution, and Advisory), Communication Alerts, Memo messages, and Status messages as described below. All EICAS messages are displayed on the primary EICAS display, except Status messages which are displayed on the Status page of the selected Multi-Function Display (MFD).

Warning	A non-normal operational or system condition displayed in red text accompanied by annunciation of the master warning lights and an aural tone. Immediate crew awareness and corrective action is required.
Caution	A non-normal operational or system condition displayed in amber text accompanied by annunciation of the master caution lights and an aural tone. Immediate crew awareness is required and corrective action may be required.
Advisory	A non-normal operational or system condition displayed in amber text without other visual or aural annunciations. Routine crew awareness is required and corrective action may be required.
Comm	A reminder of normal incoming flight crew communications displayed in white text.
Memo	A reminder of a normal condition in white text that indicates the current state of certain manually and automatically configured airplane systems.
Status	A system condition which affects airplane dispatch, displayed in white text on the MFD status page. Status messages are checked prior to engine start and the condition should be corrected or dispatched per the MEL. There are no inflight crew procedures associated with Status messages.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	EICAS Message List	R9 07/07/11 Page EM-2

Maintenance Level Messages

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

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

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

Considerations for Dispatch with Displayed EICAS and CMCS Messages

Any monitored faults that affect airplane dispatchability will be displayed on EICAS as a Status or Alert level (Warning, Caution, Advisory) message, with a corresponding correlated maintenance message. System faults displayed at Status level or Alert level should be resolved by MEL compliance or maintenance action prior to engine start. After engine start, EICAS Alert messages are the primary means of alerting the crew to non-normal conditions or improper configuration. Display of any Alert message requires accomplishment of the appropriate non-normal procedure by the crew. Upon completion of the procedure and prior to takeoff, the MEL should be consulted to determine if relief is available for continued operation with system faults displayed at the Alert level (Warning, Caution, Advisory).

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

Considerations for Dispatch Using Synoptic Displays

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

EICAS Message List Begins Next Page

	B777 Minimum Equipment List	EICAS Message List	R10 02/16/12 Page EM-3

NOTE: This EICAS message list covers all B777 types; therefore, not all messages are applicable to Delta aircraft.

EICAS MESSAGE	LEVEL	MEL ITEM
A/P DISC WARN SYS	Status	31-51-05
ACTUATOR PRESS SNSR	Status	27-02-05
ADF L	Status	34-57-01
ADF R	Status	34-57-01
ADIRU	Status	34-21-03
ADIRU ALIGN MODE	Memo	N/A
ADS-B OUT L	Advisory	34-53-01
ADS-B OUT L	Status	34-53-01
ADS-B OUT R	Advisory	34-53-01
ADS-B OUT R	Status	34-53-01
AFDC C	Status	22-11-01
AFDC L	Status	22-11-01
AFDC R	Status	22-11-01
AFT CGO A/C EXH SOV	Status	21-28-04
AILERON ACTUATOR	Status	27-11-03
AIMS	Status	None
AIMS CABINET BUS	Status	31-41-03
AIR/AIR VLV CLOSED L	Status	75-23-03
AIR/AIR VLV CLOSED R	Status	75-23-03
AIR/GROUND L	Status	32-09-01A
AIR/GROUND R	Status	32-09-01B
AIR/OIL VLV CLOSED L	Status	None
AIR/OIL VLV CLOSED R	Status	None
AIR DATA SYS	Caution	None
AIRSPEED LOW	Caution	N/A
ALTITUDE ALERT	Caution	N/A
ALTITUDE ALERT SYS	Status	34-16-01
ALTITUDE CALLOUTS	Advisory	34-46-01
ALTN ATTITUDE	Advisory	N/A
ALTN GEAR EXTEND	Status	32-35-01
ALTN PITCH TRIM LEV	Status	27-41-02
ALTN VENT SYS	Advisory	21-26-07 21-26-08 21-26-09 21-26-10
ANTI-ICE ENG L	Advisory	30-21-01
ANTI-ICE ENG R	Advisory	30-21-01
ANTI-ICE LEAK ENG L	Caution	30-21-01
ANTI-ICE LEAK ENG R	Caution	30-21-01
ANTI-ICE LOSS ENG L	Advisory	30-21-01

EICAS MESSAGE	LEVEL	MEL ITEM
ANTI-ICE LOSS ENG R	Advisory	30-21-01
ANTI-ICE ON	Advisory	N/A
ANTI-ICE WING	Advisory	30-11-01 30-11-02
ANTISKID	Advisory	None
ANTISKID	Status	None
ANTISKID ALTN VALVE	Status	32-42-03
ANTISKID NORM VLV L	Status	32-42-01
ANTISKID NORM VLV R	Status	32-42-01
ANTISKID XDCR L	Status	32-42-02
ANTISKID XDCR R	Status	32-42-02
AOA VANE L	Status	34-21-06
AOA VANE R	Status	34-21-06
APU	Status	49-11-01
APU AIR STARTER	Status	49-43-01
APU BATTERY	Status	24-31-01
APU BATTERY OVHT	Status	24-31-01
APU BLEED AIR	Status	49-52-01
APU CONTROL	Status	49-61-01
APU COOLDOWN	Memo	N/A
APU DOOR	Status	49-15-01
APU LIMIT	Caution	49-11-01
APU OIL QTY	Status	49-94-01
APU REMOTE SHUTDOWN	Status	49-11-01
APU RUNNING	Memo	N/A
APU SHUTDOWN	Advisory	49-11-01
APU START SYS	Status	49-42-01
ARINC 629 DATA BUS	Status	None
ASCP CONTROLLER	Status	None
ASCP PRIMARY CTRL L	Status	36-00-01
ASCP PRIMARY CTRL R	Status	36-00-01
ATC	Comm	N/A
ATC COMM	Status	23-27-02
ATC DATALINK LOST	Advisory	N/A
AUTO SPEEDBRAKE	Advisory	27-62-01
AUTO SPEEDBRAKE	Status	27-62-01
AUTOBRAKE	Advisory	32-42-04
AUTOBRAKE	Status	32-42-04
AUTOBRAKE 1	Memo	N/A
AUTOBRAKE 2	Memo	N/A
AUTOBRAKE 3	Memo	N/A



EICAS MESSAGE	LEVEL	MEL ITEM
AUTOBRAKE 4	Memo	N/A
AUTOBRAKE MAX	Memo	N/A
AUTOBRAKE RTO	Memo	N/A
AUTOBRAKE SOL VALVE	Status	32-42-04
AUTOPILOT	Caution	22-11-01
AUTOPILOT BACKDRV L	Status	22-11-02
AUTOPILOT BACKDRV R	Status	22-11-02
AUTOPILOT DISC	Warning	22-11-01
AUTOTHROTTLE DISC	Caution	22-31-01
AUTOTHROTTLE L	Advisory	22-31-02
AUTOTHROTTLE R	Advisory	22-31-02
AUTOTHROTTLE SERVO L	Status	22-31-02
AUTOTHROTTLE SERVO R	Status	22-31-02
AUTOTHROTTLE SYS	Status	22-31-01
AUX FUEL BACKUP SYS	Status	28-14-07
AUX FUEL PRESS HOLD	Status	28-14-08
AUX PRES SNSR CELL 1	Status	28-45-01
AUX PRES SNSR CELL 2	Status	28-45-01
AUX PRES SNSR CELL 3	Status	28-45-01
AUX PRES SNSR PUMP 1	Status	28-42-02
AUX PRES SNSR PUMP 2	Status	28-42-02
AUX PRES SNSR PUMP 3	Status	28-42-02
AUX FUEL PUMP 1	Status	28-14-04
AUX FUEL PUMP 2	Status	28-14-04
AUX FUEL PUMP 3	Status	28-14-04
AUX PUMP ISLN VLV 1	Status	28-14-05
AUX PUMP ISLN VLV 2	Status	28-14-05
AUX PUMP ISLN VLV 3	Status	28-14-05
AUX RFUEL ISLN VLV 1	Status	28-14-02
AUX RFUEL ISLN VLV 2	Status	28-14-02
AUX RFUEL XFR VLV 1	Status	28-14-03
AUX RFUEL XFR VLV 2	Status	28-14-03
AUX RFUEL XFR VLV 3	Status	28-14-03
AUX VENT VLV 1	Status	28-14-01
AUX VENT VLV 2	Status	28-14-01
AUX XFR VLV 1	Status	28-14-06
AUX XFR VLV 2	Status	28-14-06
AVS AFT SOV	Status	21-26-09
AVS FAN	Status	21-26-08
AVS FWD SOV	Status	21-26-09

EICAS MESSAGE	LEVEL	MEL ITEM
AVS SWITCH	Status	21-26-10
BANK ANGLE PROTECT	Status	27-02-01
BARO SET DISAGREE	Advisory	N/A
BAT CHARGER APU	Status	24-31-02
BAT CHARGER MAIN	Status	None
BLEED FAMV L	Status	36-11-05
BLEED FAMV R	Status	36-11-05
BLEED HPSOV L	Status	36-11-02
BLEED HPSOV R	Status	36-11-02
BLEED ISLN CLOSED C	Advisory	36-12-02
BLEED ISLN CLOSED L	Advisory	36-12-01
BLEED ISLN CLOSED R	Advisory	36-12-01
BLEED ISLN OPEN C	Advisory	36-12-02
BLEED ISLN OPEN L	Advisory	36-12-01
BLEED ISLN OPEN R	Advisory	36-12-01
BLEED ISLN VALVE C	Status	36-12-02
BLEED ISLN VALVE L	Status	36-12-01
BLEED ISLN VALVE R	Status	36-12-01
BLEED LEAK BODY	Caution	None
BLEED LEAK L	Caution	None
BLEED LEAK R	Caution	None
BLEED LEAK STRUT L	Caution	None
BLEED LEAK STRUT R	Caution	None
BLEED LOOP 1 BODY	Status	26-18-02
BLEED LOOP 1 STRUT L	Status	26-18-03
BLEED LOOP 1 STRUT R	Status	26-18-03
BLEED LOOP 1 WING L	Status	26-18-01
BLEED LOOP 1 WING R	Status	26-18-01
BLEED LOOP 2 BODY	Status	26-18-02
BLEED LOOP 2 STRUT L	Status	26-18-03
BLEED LOOP 2 STRUT R	Status	26-18-03
BLEED LOOP 2 WING L	Status	26-18-01
BLEED LOOP 2 WING R	Status	26-18-01
BLEED LOSS BODY	Advisory	None
BLEED LOSS BODY L	Advisory	None
BLEED LOSS BODY R	Advisory	None
BLEED LOSS WING L	Advisory	None
BLEED LOSS WING R	Advisory	None
BLEED OFF APU	Advisory	36-12-03
BLEED OFF ENG L	Advisory	36-11-01 36-11-02

EICAS MESSAGE	LEVEL	MEL ITEM
BLEED OFF ENG R	Advisory	36-11-01 36-11-02
BLEED PRESS SENSOR L	Status	36-21-02
BLEED PRESS SENSOR R	Status	36-21-02
BLEED PRSOV L	Status	36-11-01
BLEED PRSOV R	Status	36-11-01
BLEED TEMP SENSOR L	Status	36-22-01
BLEED TEMP SENSOR R	Status	36-22-01
BLEED VALVE APU	Status	36-12-03
BOTTLE 1 DISCH ENG	Advisory	None
BOTTLE 1 ENG	Status	None
BOTTLE 1A CARGO	Status	26-23-01
BOTTLE 1B CARGO	Status	26-23-01
BOTTLE 2 DISCH ENG	Advisory	None
BOTTLE 2 ENG	Status	None
BOTTLE 2A CARGO	Status	26-23-01
BOTTLE 2B CARGO	Status	26-23-01
BOTTLE 2C CARGO	Status	26-23-01
BOTTLE 2D CARGO	Status	26-23-01
BOTTLE 2E CARGO	Status	26-23-01
BOTTLE 2F CARGO	Status	26-23-01
BOTTLE APU	Status	26-22-01
BOTTLE CREW REST LWR	Status	26-25-01
BOTTLE DISCH APU	Advisory	26-22-01
BOTTLE DISCH CARGO	Advisory	26-23-01
BRAKE SOURCE	Advisory	N/A
BRAKE TEMP	Advisory	N/A
BRAKE TEMP SYS	Status	32-46-01
CABIN ALERT	Comm	N/A
CABIN ALT AUTO L	Status	21-31-01
CABIN ALT AUTO R	Status	21-31-01
CABIN ALTITUDE	Warning	None
CABIN ALTITUDE AUTO	Caution	21-31-01 21-31-03
CABIN CALL	Comm	N/A
CABIN EXH VALVE AFT	Status	21-26-04
CABIN EXH VALVE FWD	Status	21-26-04
CABIN INTERPHONE	Status	23-42-01
CABIN READY	Comm	N/A
CABIN TEMP CTRL L	Status	21-61-01
CABIN TEMP CTRL R	Status	21-61-01
CABIN TEMPERATURE	Advisory	N/A



EICAS MESSAGE	LEVEL	MEL ITEM
CARGO A/C FWD	Advisory	21-00-01 21-28-01 21-61-05 21-61-06 21-61-07 21-61-08 21-61-01 21-62-02
CARGO A/C LWR AFT	Advisory	21-28-03 21-28-04 21-61-01 21-61-09 21-61-10 21-61-11 21-61-12 21-62-01 21-62-02
CARGO A/C LWR FWD	Advisory	21-28-02 21-61-01 21-62-02 21-61-05 21-61-06 21-61-07 21-61-08 21-62-01
CARGO A/C SELECT FWD	Status	21-61-08
CARGO A/C SOV FWD	Status	21-28-01
CARGO CALL	Comm	N/A
CARGO DUCT SNSRS FWD	Status	21-61-05-01
CARGO EXH FAN FWD	Status	21-26-05
CARGO HEAT AFT	Advisory	21-00-01 21-44-01 21-44-02
CARGO HEAT BULK	Advisory	21-00-01 21-44-03 21-44-04
CARGO HEAT VALVE AFT	Status	21-44-01
CARGO HEAT VALVE FWD	Status	21-27-07
CARGO HEAT VLV BULK	Status	21-44-03
CARGO SQUIB TEST	Status	26-21-02
CARGO TEMP SNSR AFT	Status	21-44-02
CARGO TEMP SNSR BULK	Status	21-44-04
CARGO TEMP SNSRS FWD	Status	21-61-06
CARGO VENT FAN BULK	Status	21-26-02 21-26-03
CDU C	Status	34-61-03
CDU L	Status	34-61-03
CDU R	Status	34-61-03
CGO A/C FRV LWR AFT	Status	21-28-03
CGO A/C FRV LWR FWD	Status	21-28-02
CGO A/C SEL LWR AFT	Status	21-61-12
CGO A/C SEL LWR FWD	Status	21-61-08
CGO A/C SEL MAIN AFT	Status	21-61-16
CGO A/C SEL MAIN FWD	Status	21-61-16
CGO DCT SNSR LWR AFT	Status	21-61-09
CGO DCT SNSR LWR FWD	Status	21-61-05
CGO DCT SNSR M/D AFT	Status	21-61-13
CGO DCT SNSR M/D FWD	Status	21-61-13
CGO TMP SNSR LWR AFT	Status	21-61-10
CGO TMP SNSR LWR FWD	Status	21-61-06
CGO TMP SNSR M/D AFT	Status	21-61-14
CGO TMP SNSR M/D FWD	Status	21-61-14
CGO TRM VLV LWR AFT	Status	21-61-11
CGO TRM VLV LWR FWD	Status	21-61-07
CGO TRM VLV MAIN AFT	Status	21-61-15

EICAS MESSAGE	LEVEL	MEL ITEM
CGO TRM VLV MAIN FWD	Status	21-61-15
CHECKLIST SYS	Status	31-61-07
CHILLER EXHAUST SYS	Status	21-26-06
CMPRSR TEMP SENSOR L	Status	21-52-03
CMPRSR TEMP SENSOR R	Status	21-52-03
COMM	Comm	N/A
COMM BUSY	Comm	N/A
CON IGNITION ON L	Memo	N/A
CON IGNITION ON L+R	Memo	N/A
CON IGNITION ON R	Memo	N/A
COND TEMP SENSOR L	Status	21-52-07
COND TEMP SENSOR R	Status	21-52-07
CONFIG DOORS	Warning	N/A
CONFIG FLAPS	Warning	N/A
CONFIG GEAR	Warning	N/A
CONFIG GEAR STEERING	Warning	N/A
CONFIG PARKING BRAKE	Warning	N/A
CONFIG RUDDER	Warning	N/A
CONFIG SPOILERS	Warning	N/A
CONFIG STABILIZER	Warning	N/A
CONFIG WARNING SYS	Advisory	None
CONFIG WARNING SYS	Status	None
CONTROL COLUMN XDCR	Status	27-31-01
CONTROL WHEEL XDCR	Status	27-11-02
CPCS AIR/GND	Status	None
CPCS REMOTE SENSOR	Status	21-31-04
CREW OXYGEN LOW	Advisory	35-11-01
CREW REST CALL	Comm	N/A
CREW REST SQUIB TEST	Status	26-21-02
CSD CAN BUS	Status	26-16-04
CSD CONTROLLER CH A	Status	26-16-04
CSD CONTROLLER CH B	Status	26-16-04
CSD POWER BUS	Status	26-16-04
CSD ZONE 1 CARGO AFT	Status	26-16-02
CSD ZONE 1 CARGO FWD	Status	26-16-02
CSD ZONE 1 MAIN	Status	26-16-03
CSD ZONE 2 CARGO AFT	Status	26-16-02
CSD ZONE 2 CARGO FWD	Status	26-16-02
CSD ZONE 2 MAIN	Status	26-16-03
CSD ZONE 3 CARGO AFT	Status	26-16-02



EICAS MESSAGE	LEVEL	MEL ITEM
CSD ZONE 3 CARGO FWD	Status	26-16-02
CSD ZONE 3 MAIN	Status	26-16-03
CSD ZONE 4 MAIN	Status	26-16-03
CSD ZONE 5 MAIN	Status	26-16-03
CSD ZONE 6 MAIN	Status	26-16-03
CSD ZONE 7 MAIN	Status	26-16-03
CSD ZONE 8 MAIN	Status	26-16-03
CURSOR CONTROL L	Status	31-61-02
CURSOR CONTROL R	Status	31-61-02
DATA COMM MGMT	Status	23-27-01
DATALINK AVAIL	Comm	N/A
DATALINK LOST	Advisory	N/A
DATALINK SYS	Advisory	23-27-01
DET CHAN 1 C/R LWR	Status	26-14-01
DET CHAN 1 CARGO AFT	Status	26-14-01 26-16-01
DET CHAN 1 CARGO FWD	Status	26-16-01
DET CHAN 1 E/E SMOKE	Status	26-19-01
DET CHAN 2 C/R LWR	Status	26-14-01
DET CHAN 2 CARGO AFT	Status	26-14-01 26-16-01
DET CHAN 2 CARGO FWD	Status	26-16-01
DET CHAN 2 E/E SMOKE	Status	26-19-01
DET FAN 1 CARGO AFT	Status	26-16-01
DET FAN 1 CARGO FWD	Status	26-16-01
DET FAN 2 CARGO AFT	Status	26-16-01
DET FAN 2 CARGO FWD	Status	26-16-01
DET FIRE APU	Advisory	26-15-01
DET FIRE CARGO AFT	Advisory	26-16-01 26-16-02
DET FIRE CARGO FWD	Advisory	26-16-01 26-16-02
DET FIRE CARGO MAIN	Advisory	26-16-03
DET FIRE ENG L	Advisory	None
DET FIRE ENG R	Advisory	None
DET FIRE WHEEL WELL	Advisory	26-17-01
DET FIRE WHEEL WELL	Status	26-17-01
DET HTR CARGO AFT	Status	26-16-01
DET HTR CARGO FWD	Status	26-16-01
DET OVERHEAT ENG L	Advisory	26-11-02
DET OVERHEAT ENG R	Advisory	26-11-02
DET SMOKE C/R LWR	Status	26-14-01
DET SMOKE E/E EXH	Status	26-19-02
DET SMOKE E/E SUPPLY	Status	26-19-02

EICAS MESSAGE	LEVEL	MEL ITEM
DET TURB OVHT ENG L	Status	None
DET TURB OVHT ENG R	Status	None
DET ZONE 1 CARGO AFT	Status	26-16-01 26-16-02
DET ZONE 1 CARGO FWD	Status	26-16-01 26-16-02
DET ZONE 1 MAIN	Status	26-16-03
DET ZONE 2 CARGO AFT	Status	26-16-01 26-16-02
DET ZONE 2 CARGO FWD	Status	26-16-01 26-16-02
DET ZONE 2 MAIN	Status	26-16-03
DET ZONE 3 CARGO AFT	Status	26-16-01 26-16-02
DET ZONE 3 CARGO FWD	Status	26-16-01 26-16-02
DET ZONE 3 MAIN	Status	26-16-03
DET ZONE 4 CARGO AFT	Status	26-16-01
DET ZONE 4 CARGO FWD	Status	26-16-01
DET ZONE 4 MAIN	Status	26-16-01
DET ZONE 5 MAIN	Status	26-16-01
DET ZONE 6 MAIN	Status	26-16-01
DET ZONE 7 MAIN	Status	26-16-01
DET ZONE 8 MAIN	Status	26-16-01
DETECTOR IFES SMOKE	Status	21-27-11
DISPLAY INTERCABINET	Status	None
DISPLAY INTERFACE	Status	None
DISPLAY PROCESSING	Status	None
DISPLAY RESOURCES	Status	None
DISPLAY SELECT PNL	Advisory	31-61-04
DME L	Status	34-55-01
DME R	Status	34-55-01
DOOR AFT CARGO	Advisory	52-71-01
DOOR AFT CARGO	Caution	52-71-01
DOOR AFT CARGO ARMED	Status	None
DOOR AFT CARGO IND	Status	52-71-01
DOOR BULK CARGO	Advisory	52-71-01
DOOR E/E ACCESS	Advisory	52-71-01
DOOR ENTRY 1L	Advisory	52-71-01
DOOR ENTRY 1R	Advisory	52-71-01
DOOR ENTRY 2L	Advisory	52-71-01
DOOR ENTRY 2R	Advisory	52-71-01
DOOR ENTRY 3L	Advisory	52-71-01
DOOR ENTRY 3R	Advisory	52-71-01
DOOR ENTRY 4L	Advisory	52-71-01
DOOR ENTRY 4R	Advisory	52-71-01

EICAS MESSAGE	LEVEL	MEL ITEM
DOOR ENTRY 5L	Advisory	52-71-01
DOOR ENTRY 5R	Advisory	52-71-01
DOOR ENTRY IND 1L	Status	52-71-01
DOOR ENTRY IND 1R	Status	52-71-01
DOOR ENTRY IND 2L	Status	52-71-01
DOOR ENTRY IND 2R	Status	52-71-01
DOOR ENTRY IND 3L	Status	52-71-01
DOOR ENTRY IND 3R	Status	52-71-01
DOOR ENTRY IND 4L	Status	52-71-01
DOOR ENTRY IND 4R	Status	52-71-01
DOOR ENTRY IND 5L	Status	52-71-01
DOOR ENTRY IND 5R	Status	52-71-01
DOOR FLIGHT LOCK 1L	Status	52-11-05
DOOR FLIGHT LOCK 1R	Status	52-11-05
DOOR FLIGHT LOCK 2L	Status	52-11-05
DOOR FLIGHT LOCK 2R	Status	52-11-05
DOOR FLIGHT LOCK 3L	Status	52-11-05
DOOR FLIGHT LOCK 3R	Status	52-11-05
DOOR FLIGHT LOCK 4L	Status	52-11-05
DOOR FLIGHT LOCK 4R	Status	52-11-05
DOOR FLIGHT LOCK 5L	Status	52-11-05
DOOR FLIGHT LOCK 5R	Status	52-11-05
DOOR FWD ACCESS	Advisory	52-71-01
DOOR FWD CARGO	Caution	52-71-01
DOOR FWD CARGO IND	Status	52-71-01
DOOR MAIN CARGO IND	Status	52-71-01
DOOR MAIN DECK CARGO	Caution	52-71-01
DOOR WING SLIDE L	Advisory	52-71-01
DOOR WING SLIDE L	Status	52-71-01
DOOR WING SLIDE LK L	Status	52-71-01
DOOR WING SLIDE LK R	Status	52-71-01
DOOR WING SLIDE R	Advisory	52-71-01
DOOR WING SLIDE R	Status	52-71-01
DOORS	Advisory	52-71-01
DOORS AUTO	Memo	N/A
DOORS AUTO/MANUAL	Memo	N/A
DOORS MANUAL	Memo	N/A
DUCT PRESS DET E4	Status	21-27-12
DUCT PRESS DET E5	Status	21-27-12
DUCT PRESS DET F/D	Status	21-27-12

EICAS MESSAGE	LEVEL	MEL ITEM
DUCT PRESS DET VSCF	Status	21-27-12
DUCT SENS EQUIP COOL	Status	21-61-17
EAI CARD L	Status	30-21-01
EAI CARD R	Status	30-21-01
EAI LOOPS FANCASE L	Status	26-18-04
EAI LOOPS FANCASE R	Status	26-18-04
EAI PRESS SENSOR L	Status	30-21-01
EAI PRESS SENSOR R	Status	30-21-01
EAI VALVE L	Status	30-21-01
EAI VALVE R	Status	30-21-01
ECON COOL VALVE L	Status	21-52-02
ECON COOL VALVE R	Status	21-52-02
ECS CARD L	Status	21-00-01
ECS CARD R	Status	21-00-01
EFIS CONTROL PNL L	Advisory	31-61-08
EFIS CONTROL PNL L	Status	31-61-08
EFIS CONTROL PNL R	Advisory	31-61-08
EFIS CONTROL PNL R	Status	31-61-08
ELEC AC BUS L	Caution	None
ELEC AC BUS R	Caution	None
ELEC BACKUP GEN L	Advisory	24-25-01
ELEC BACKUP GEN L	Status	24-25-01
ELEC BACKUP GEN R	Advisory	24-25-01
ELEC BACKUP GEN R	Status	24-25-01
ELEC BACKUP SYS	Advisory	24-25-01
ELEC BACKUP SYS	Status	24-25-01
ELEC BATTERY BUS	Status	None
ELEC BATTERY OFF	Advisory	N/A
ELEC BUS ISLN L	Advisory	None
ELEC BUS ISLN R	Advisory	None
ELEC CABIN/UTIL OFF	Advisory	N/A
ELEC IFE/SEATS OFF	Advisory	N/A
ELEC DC BUS L	Status	None
ELEC DC BUS R	Status	None
ELEC GEN DRIVE L	Advisory	24-11-01
ELEC GEN DRIVE R	Advisory	24-11-01
ELEC GEN OFF APU	Advisory	24-21-01
ELEC GEN OFF L	Advisory	24-11-01
ELEC GEN OFF R	Advisory	24-11-01
ELEC GEN SYS L	Status	24-11-01

EICAS MESSAGE	LEVEL	MEL ITEM
ELEC GEN SYS R	Status	24-11-01
ELEC GND HDLG BUS	Advisory	24-22-01
ELEC GND HDLG BUS	Status	24-22-01
ELEC HOT BATTERY BUS	Status	None
ELEC STANDBY BUS	Status	None
ELEC STANDBY SYS	Advisory	None
ELEC STANDBY SYS	Status	None
ELEC TRU C1	Status	None
ELEC TRU C2	Status	None
ELEC TRU L	Status	None
ELEC TRU R	Status	None
ELMS P110 CHANNEL	Status	24-09-01
ELMS P110 PANEL	Status	None
ELMS P210 CHANNEL	Status	24-09-01
ELMS P210 PANEL	Status	None
ELMS P310 CHANNEL	Status	24-09-01
ELMS P310 PANEL	Status	None
ELT ON	Advisory	25-63-03
EMER LIGHTS	Advisory	N/A
ENG AIR/OIL VALVE L	Status	79-21-01
ENG AIR/OIL VALVE R	Status	79-21-01
ENG ANTI-ICE AIR L	Advisory	None
ENG ANTI-ICE AIR R	Advisory	None
ENG AUTOSTART L	Caution	80-11-02
ENG AUTOSTART OFF	Advisory	N/A
ENG AUTOSTART R	Caution	80-11-02
ENG CCC VALVE L	Status	75-23-02
ENG CCC VALVE R	Status	75-23-02
ENG CONTROL L	Advisory	None
ENG CONTROL L	Status	None
ENG CONTROL R	Advisory	None
ENG CONTROL R	Status	None
ENG DMS L	Status	None
ENG DMS R	Status	None
ENG EEC C1 L	Status	73-21-04
ENG EEC C1 R	Status	73-21-04
ENG EEC MODE L	Advisory	30-34-01 73-21-02
ENG EEC MODE L	Status	30-34-01 73-21-02
ENG EEC MODE R	Advisory	30-34-01 73-21-02
ENG EEC MODE R	Status	30-34-01 73-21-02

EICAS MESSAGE	LEVEL	MEL ITEM
ENG EEC OVHT L	Status	None
ENG EEC OVHT R	Status	None
ENG FAIL L	Caution	None
ENG FAIL R	Caution	None
ENG FUEL FILT SNSR L (GE)	Status	73-34-01
ENG FUEL FILT SNSR R (GE)	Status	73-34-01
ENG FUEL FILTER L (RR)	Advisory	73-34-01
ENG FUEL FILTER L (GE)	Advisory	None
ENG FUEL FILTER L (RR)	Status	73-34-01
ENG FUEL FILTER L (GE)	Status	None
ENG FUEL FILTER R (RR)	Advisory	73-34-01
ENG FUEL FILTER R (GE)	Advisory	None
ENG FUEL FILTER R (RR)	Status	73-34-01
ENG FUEL FILTER R (GE)	Status	None
ENG FUEL VALVE L	Advisory	73-21-06
ENG FUEL VALVE L	Status	73-21-06
ENG FUEL VALVE R	Advisory	73-21-06
ENG FUEL VALVE R	Status	73-21-06
ENG HP OIL FILT L	Status	79-35-01
ENG HP OIL FILT R	Status	79-35-01
ENG HPTACC VALVE L	Status	None
ENG HPTACC VALVE R	Status	None
ENG IDLE DISAGREE	Advisory	73-21-01
ENG IGNITOR L1	Status	74-00-01
ENG IGNITOR L2	Status	74-00-01
ENG IGNITOR R1	Status	74-00-01
ENG IGNITOR R2	Status	74-00-01
ENG L START EGT	Status	None
ENG LIMIT PROT L	Caution	N/A
ENG LIMIT PROT R	Caution	N/A
ENG LPC ANTI-ICE L	Advisory	75-10-01
ENG LPC ANTI-ICE R	Advisory	75-10-01
ENG LPC AI VALVE L	Status	75-10-01
ENG LPC AI VALVE R	Status	75-10-01
ENG LPTACC VALVE L	Status	75-24-01
ENG LPTACC VALVE R	Status	75-24-01
ENG OIL FILT SNSR L	Status	79-35-01 79-35-01
ENG OIL FILT SNSR R	Status	79-35-01 79-35-01
ENG OIL FILTER L	Advisory	None
ENG OIL FILTER L	Status	None

EICAS MESSAGE	LEVEL	MEL ITEM
ENG OIL FILTER R	Advisory	None
ENG OIL FILTER R	Status	None
ENG OIL PRESS L	Caution	N/A
ENG OIL PRESS R	Caution	N/A
ENG OIL TEMP L	Advisory	N/A
ENG OIL TEMP R	Advisory	N/A
ENG OPU L	Status	None
ENG OPU R	Status	None
ENG OVERSPEED GOV L	Status	None
ENG OVERSPEED GOV R	Status	None
ENG R START EGT	Status	None
ENG REV LIMITED L	Advisory	78-31-01 78-34-01
ENG REV LIMITED R	Advisory	78-31-01 78-34-01
ENG REVERSER L	Advisory	78-31-01
ENG REVERSER L	Status	78-31-01
ENG REVERSER R	Advisory	78-31-01
ENG REVERSER R	Status	78-31-01
ENG REVERSER SNSR L	Status	78-36-01
ENG REVERSER SNSR R	Status	78-36-01
ENG RPM LIMITED L	Advisory	N/A
ENG RPM LIMITED R	Advisory	N/A
ENG SCAV OIL FILT L	Status	79-35-01
ENG SCAV OIL FILT R	Status	79-35-01
ENG SHUTDOWN	Caution	N/A
ENG SHUTDOWN L	Caution	N/A
ENG SHUTDOWN R	Caution	N/A
ENG START BLEED L	Status	None
ENG START BLEED R	Status	None
ENG START VALVE L	Advisory	80-11-01
ENG START VALVE L	Status	80-11-01
ENG START VALVE R	Advisory	80-11-01
ENG START VALVE R	Status	80-11-01
ENG STARTER CUTOUT L	Caution	80-11-01 80-11-03
ENG STARTER CUTOUT R	Caution	80-11-01 80-11-03
ENG TCMA L	Status	73-21-07
ENG TCMA R	Status	73-21-07
ENG THRUST L	Caution	None
ENG THRUST R	Caution	None
ENG TURB OVSP SYS L	Status	73-21-05
ENG TURB OVSP SYS R	Status	73-21-05

EICAS MESSAGE	LEVEL	MEL ITEM
ENG VIB MONITOR L	Status	77-31-01
ENG VIB MONITOR R	Status	77-31-01
ENG/APU SQUIB TEST	Status	26-21-02
EQUIP 3 WAY VALVE	Status	21-27-15
EQUIP COOL A/C FLOW	Status	21-27-16
EQUIP COOLING	Advisory	None
EQUIP COOLING CTRL L	Status	21-27-08
EQUIP COOLING CTRL R	Status	21-27-08
EQUIP COOLING FAN L	Status	21-27-02
EQUIP COOLING FAN R	Status	21-27-02
EQUIP COOLING OVRD	Advisory	None
EQUIP DIVERT VALVE	Status	21-27-13
EQUIP FLOW DET	Status	21-27-04
EQUIP INBOARD VALVE	Status	21-27-14
EQUIP VENT FAN	Status	21-27-05
EQUIP VENT VALVE	Status	21-27-06
EXH CREW REST MN DK	Status	21-29-03
EXH REST UPR AFT	Status	21-29-05
EXH REST UPR FWD	Status	21-29-05
F/OIL VALVE CLOSED L	Status	79-21-02
F/OIL VALVE CLOSED R	Status	79-21-02
F/OIL VALVE OPEN L	Status	None
F/OIL VALVE OPEN R	Status	None
FIRE APU	Warning	None
FIRE CARD APU	Status	26-15-01
FIRE CARD ENG L	Status	None
FIRE CARD ENG R	Status	None
FIRE CARGO AFT	Warning	None
FIRE CARGO FWD	Warning	None
FIRE CARGO MAIN DECK	Warning	None
FIRE ENG L	Warning	None
FIRE ENG R	Warning	None
FIRE LOOP 1 APU	Status	26-15-01
FIRE LOOP 1 ENG L	Status	26-11-01
FIRE LOOP 1 ENG R	Status	26-11-01
FIRE LOOP 2 APU	Status	26-15-01
FIRE LOOP 2 ENG L	Status	26-11-01
FIRE LOOP 2 ENG R	Status	26-11-01
FIRE TEST FAIL	Warning	26-11-02 26-15-01 26-16-01 26-17-01
FIRE TEST IN PROG	Warning	N/A



EICAS MESSAGE	LEVEL	MEL ITEM
FIRE TEST PASS	Warning	N/A
FIRE WHEEL WELL	Warning	None
FLAP/SLAT CONTROL	Caution	None
FLAP/SLAT CONTROL 1	Status	27-03-01
FLAP/SLAT CONTROL 2	Status	27-03-01
FLAP/SLAT SKEW SNSRS	Status	27-59-01
FLAPERON ACTUATOR	Status	27-11-04
FLAPS DRIVE	Caution	None
FLAPS PRIMARY FAIL	Caution	None
FLAPS SECONDARY FAIL	Status	27-03-02
FLIGHT CONTROL MODE	Caution	None
FLIGHT CONTROL SYS	Status	None
FLIGHT CONTROLS	Caution	None
FLIGHT DECK A/C FRV	Status	21-51-04
FLOW VALVE CARGO AFT	Status	26-23-02
FLOW VALVE CARGO FWD	Status	26-23-02
FLT CONTROL VALVE	Advisory	27-02-06 27-02-07
FLT DECK FLOW DET	Status	21-27-04
FLT INST BUS CAPT	Status	None
FLT INST BUS F/O	Status	None
FLT RECORDER SYS	Status	31-31-01
FMC	Advisory	34-61-01
FMC	Comm	N/A
FMC	Status	34-61-01
FMC L	Advisory	34-61-01
FMC L	Status	34-61-01
FMC MESSAGE	Advisory	N/A
FMC R	Advisory	34-61-01
FMC R	Status	34-61-01
FMC RUNWAY DISAGREE	Caution	N/A
FUEL AUTO JETTISON	Caution	28-31-01A
FUEL AUX XFR	Caution	28-14-01 28-14-03 28-14-04 28-14-05 28-14-06 28-14-07 28-14-08 28-41-01 28-42-02 28-45-01
FUEL CROSSFEED AFT	Advisory	28-22-03
FUEL CROSSFEED AFT	Status	28-22-03
FUEL CROSSFEED FWD	Advisory	28-22-03
FUEL CROSSFEED FWD	Status	28-22-03
FUEL DISAGREE	Advisory	N/A
FUEL FLOW ENG L	Advisory	N/A
FUEL FLOW ENG R	Advisory	N/A



EICAS MESSAGE	LEVEL	MEL ITEM
FUEL IMBALANCE	Advisory	N/A
FUEL IN AUX	Advisory	N/A
FUEL IN CENTER	Advisory	N/A
FUEL ISLN VALVE APU	Status	28-25-03
FUEL JETT NOZZLE L	Advisory	28-31-04
FUEL JETT NOZZLE L	Status	28-31-04
FUEL JETT NOZZLE R	Advisory	28-31-04
FUEL JETT NOZZLE R	Status	28-31-04
FUEL JETT PUMP L	Status	28-31-03
FUEL JETT PUMP R	Status	28-31-03
FUEL JETTISON MAIN	Advisory	28-31-03
FUEL JETTISON SYS	Caution	28-31-01A
FUEL JETTISON SYS	Status	28-31-01A
FUEL LOW AUX	Advisory	N/A
FUEL LOW CENTER	Advisory	N/A
FUEL PRESS ENG L	Caution	None
FUEL PRESS ENG L+R	Advisory	N/A
FUEL PRESS ENG R	Caution	None
FUEL PUMP APU	Status	28-25-01
FUEL PUMP CENTER L	Advisory	28-22-02
FUEL PUMP CENTER L	Status	28-22-02
FUEL PUMP CENTER R	Advisory	28-22-02
FUEL PUMP CENTER R	Status	28-22-02
FUEL PUMP L AFT	Advisory	28-22-01
FUEL PUMP L AFT	Status	28-22-01
FUEL PUMP L FWD	Advisory	28-22-01
FUEL PUMP L FWD	Status	28-22-01
FUEL PUMP R AFT	Advisory	28-22-01
FUEL PUMP R AFT	Status	28-22-01
FUEL PUMP R FWD	Advisory	28-22-01
FUEL PUMP R FWD	Status	28-22-01
FUEL QTY CHANNEL	Status	28-41-02
FUEL QTY INDICATION	Status	28-41-01
FUEL QTY LOW	Caution	N/A
FUEL SCAVENGE SYS	Advisory	28-22-04
FUEL SOV BATTERY	Status	28-22-06
FUEL SPAR VALVE L	Status	None
FUEL SPAR VALVE R	Status	None
FUEL TEMP INDICATION	Status	28-43-01
FUEL TEMP LOW	Advisory	N/A

EICAS MESSAGE	LEVEL	MEL ITEM
FUEL VALVE APU	Advisory	28-25-02
FUEL VALVE APU	Status	28-25-02
G/S ANTENNA C	Status	34-31-02
G/S ANTENNA L	Status	34-31-02
G/S ANTENNA R	Status	34-31-02
GEAR CONTROL	Status	32-31-02
GEAR DISAGREE	Caution	None
GEAR DOOR	Advisory	None
GEAR INDICATION SYS	Status	32-61-01
GND PROX SYS	Advisory	34-46-01
GND PROX SYS	Status	34-46-01
GPS	Advisory	34-58-01
GPS L	Status	34-58-01
GPS R	Status	34-58-01
GROUND CALL	Comm	N/A
GROUND TEST ENABLE	Status	73-21-02
HEAT PITOT C	Advisory	30-31-01
HEAT PITOT C	Status	30-31-01
HEAT PITOT L	Advisory	30-31-01
HEAT PITOT L	Status	30-31-01
HEAT PITOT L+C+R	Advisory	None
HEAT PITOT R	Advisory	30-31-01
HEAT PITOT R	Status	30-31-01
HEAT TAT	Status	30-33-01
HF DATALINK	Advisory	23-11-01
HF DATALINK OFF	Memo	N/A
HUMID FLIGHT DECK	Status	21-71-01
HYD AUTO CONTROL C	Advisory	None
HYD AUTO CONTROL L	Advisory	29-11-05
HYD AUTO CONTROL R	Advisory	29-11-05
HYD ISLN VALVE	Status	29-11-06
HYD OVERHEAT DEM C1	Advisory	29-11-03
HYD OVERHEAT DEM C2	Advisory	29-11-03
HYD OVERHEAT DEM L	Advisory	None
HYD OVERHEAT DEM R	Advisory	None
HYD OVERHEAT PRI C1	Advisory	29-11-02
HYD OVERHEAT PRI C2	Advisory	29-11-02
HYD OVERHEAT PRI L	Advisory	None
HYD OVERHEAT PRI R	Advisory	None
HYD PRESS DEM C1	Advisory	29-11-03 29-11-04



EICAS MESSAGE	LEVEL	MEL ITEM
HYD PRESS DEM C2	Advisory	29-11-03 29-11-04
HYD PRESS DEM L	Advisory	29-11-04 29-31-02
HYD PRESS DEM R	Advisory	29-11-04 29-31-02
HYD PRESS IND DEM C1	Status	29-31-02
HYD PRESS IND DEM C2	Status	29-31-02
HYD PRESS IND DEM L	Status	29-31-02
HYD PRESS IND DEM R	Status	29-31-02
HYD PRESS IND PRI C1	Status	29-31-02
HYD PRESS IND PRI C2	Status	29-31-02
HYD PRESS IND PRI L	Status	29-31-02
HYD PRESS IND PRI R	Status	29-31-02
HYD PRESS PRI C1	Advisory	29-11-02 29-31-02
HYD PRESS PRI C2	Advisory	29-11-02 29-31-02
HYD PRESS PRI L	Advisory	29-31-02
HYD PRESS PRI R	Advisory	29-31-02
HYD PRESS SYS C	Caution	None
HYD PRESS SYS L	Caution	None
HYD PRESS SYS L+C	Caution	None
HYD PRESS SYS L+C+R	Caution	None
HYD PRESS SYS L+R	Caution	None
HYD PRESS SYS R	Caution	None
HYD PRESS SYS R+C	Caution	None
HYD PUMP DEM C1	Status	29-11-03 29-11-04
HYD PUMP DEM C2	Status	29-11-03 29-11-04
HYD PUMP DEM L	Status	29-11-04 29-31-02
HYD PUMP DEM R	Status	29-11-04 29-31-02
HYD PUMP PRI C1	Status	29-11-02
HYD PUMP PRI C2	Status	29-11-02
HYD PUMP PRI L	Status	29-31-02
HYD PUMP PRI R	Status	29-31-02
HYD QTY LOW C	Advisory	None
HYD QTY LOW L	Advisory	None
HYD QTY LOW L+C	Caution	None
HYD QTY LOW L+C+R	Caution	None
HYD QTY LOW L+R	Caution	None
HYD QTY LOW R	Advisory	None
HYD QTY LOW R+C	Caution	None
HYD RSVR PRESS C	Status	None
HYD RSVR PRESS L	Status	None
HYD RSVR PRESS R	Status	None

EICAS MESSAGE	LEVEL	MEL ITEM
HYD SYS PRESS SNSR C	Status	29-31-01
HYD SYS PRESS SNSR L	Status	29-31-01
HYD SYS PRESS SNSR R	Status	29-31-01
HYD TEMP IND DEM C1	Status	29-32-01
HYD TEMP IND DEM C2	Status	29-32-01
HYD TEMP IND DEM L	Status	29-32-01
HYD TEMP IND DEM R	Status	29-32-01
HYD TEMP IND PRI C1	Status	29-32-01
HYD TEMP IND PRI C2	Status	29-32-01
HYD TEMP IND PRI L	Status	29-32-01
HYD TEMP IND PRI R	Status	29-32-01
HYDIM CARD HCL	Status	29-11-05
HYDIM CARD HCR	Status	29-11-05
HYDIM CARD HL	Status	29-11-05
HYDIM CARD HR	Status	29-11-05
ICE DETECTOR L	Status	30-81-01
ICE DETECTOR R	Status	30-81-01
ICE DETECTORS	Advisory	30-81-01
ICING ENG	Caution	N/A
ICING WING	Advisory	N/A
IDG VALVE CLOSED L	Status	24-11-01
IDG VALVE CLOSED R	Status	24-11-01
IFES COOLING FAN	Status	21-27-10
ILS ANTENNA	Caution	34-31-01 34-31-02 34-31-03
ILS C	Status	34-31-01
ILS L	Status	34-31-01
ILS R	Status	34-31-01
INSUFFICIENT FUEL	Advisory	N/A
JETT ISLN VALVE L	Status	28-31-02
JETT ISLN VALVE R	Status	28-31-02
L GEAR DOOR SENSOR	Status	32-61-02
L GEAR UPLOCK SENSOR	Status	32-61-03
LANDING ALTITUDE	Advisory	N/A
LAV-GALLEY FAN L	Status	21-26-01
LAV-GALLEY FAN R	Status	21-26-01
LAV-GALLEY SOV	Status	21-26-07
LOC ANTENNA C	Status	34-31-03
LOC ANTENNA L	Status	34-31-03
LOC ANTENNA R	Status	34-31-03
LSCF ASG CARD L	Status	31-09-01



EICAS MESSAGE	LEVEL	MEL ITEM
LSCF ASG CARD R	Status	31-09-01
LSCF PWR SUPPLY 1	Status	31-09-02
LSCF PWR SUPPLY 2	Status	31-09-02
MAIN BATTERY	Status	None
MAIN BATTERY DISCH	Advisory	None
MAIN BATTERY OVHT	Status	None
MAIN DECK A/C	Advisory	21-40-01 21-61-01 21-61-13 21-61-14 21-61-15 21-61-16 21-62-01 21-62-02
MAIN DECK AFT SOV 1	Status	21-40-01
MAIN DECK AFT SOV 2	Status	21-40-01
MAIN DECK AFT SOV 3	Status	21-40-01
MAIN DECK FWD SOV 1	Status	21-40-01
MAIN DECK FWD SOV 2	Status	21-40-01
MAIN DECK FWD SOV 3	Status	21-40-01
MAIN DK ALERT	Status	33-37-02
MAIN GEAR BRACE L	Caution	None
MAIN GEAR BRACE R	Caution	None
MAIN GEAR STEERING	Advisory	32-53-01
MAIN GEAR STEERING	Status	32-53-01
MAN PRESS SENSOR L	Status	36-21-01
MAN PRESS SENSOR R	Status	36-21-01
MANIFOLD SENSOR L	Status	36-21-01
MANIFOLD SENSOR R	Status	36-21-01
MODE CTRL PANEL LANE	Status	22-11-03
NACELLE VENT VALVE L	Status	75-23-01
NACELLE VENT VALVE R	Status	75-23-01
NAV ADIRU INERTIAL	Caution	None
NAV AIR DATA SYS	Advisory	None
NAV UNABLE RNP	Caution	N/A
NAV UNABLE RNP	Advisory	N/A
NITROGEN GEN PERF	Status	47-11-01B
NITROGEN GEN SYS	Status	47-11-01A
NO AUTOLAND	Advisory	22-11-07
NO AUTOLAND	Caution	22-11-07
NO AUTOLAND	Status	22-11-07
NO ELECTRONICS ON	Memo	N/A
NO LAND 3	Advisory	22-11-07
NO LAND 3	Caution	22-11-07
NO LAND 3	Status	22-11-07
NO SMOKING ON	Memo	N/A

EICAS MESSAGE	LEVEL	MEL ITEM
NOSE GEAR DOOR SNSR	Status	32-61-02
NOSE GEAR PRESS XDCR	Status	27-48-04
NOSE GEAR UP SENSOR	Status	32-61-03
OIL PRESS SENSORS L	Status	None
OIL PRESS SENSORS R	Status	None
OIL QTY SENSOR L	Status	79-31-01
OIL QTY SENSOR R	Status	79-31-01
OIL TEMP SENSORS L	Status	None
OIL TEMP SENSORS R	Status	None
OPBC L	Status	23-93-01
OPBC R	Status	23-93-01
OPIC LA1	Status	23-93-02
OPIC LA2	Status	23-93-02
OPIC RA1	Status	23-93-02
OPIC RA2	Status	23-93-02
OUTFLOW VALVE AFT	Advisory	21-31-03
OUTFLOW VALVE AFT	Status	21-31-03
OUTFLOW VALVE FWD	Advisory	21-31-03
OUTFLOW VALVE FWD	Status	21-31-03
OVERHEAT CIRCUIT L1	Status	26-11-02
OVERHEAT CIRCUIT L2	Status	26-11-02
OVERHEAT CIRCUIT R1	Status	26-11-02
OVERHEAT CIRCUIT R2	Status	26-11-02
OVERHEAT ENG L	Caution	None
OVERHEAT ENG R	Caution	None
OVERSPEED	Warning	N/A
OVERSPEED SYS	Status	None
OVERSPEED VFE	Status	None
OVERSPEED VMO/MMO	Status	None
OVRD VALVE MOTOR L	Status	21-27-03
OVRD VALVE MOTOR R	Status	21-27-03
PACK ACM L	Status	21-52-01
PACK ACM R	Status	21-52-01
PACK FCV L	Status	21-51-02
PACK FCV LWR L	Status	21-51-02
PACK FCV LWR R	Status	21-51-02
PACK FCV R	Status	21-51-02
PACK FCV UPR L	Status	21-51-02
PACK FCV UPR R	Status	21-51-02
PACK L	Advisory	21-51-01



EICAS MESSAGE	LEVEL	MEL ITEM
PACK L	Status	21-51-01
PACK L + R	Caution	21-51-01
PACK MODE L	Advisory	21-52-01 21-52-02 21-52-07
PACK MODE R	Advisory	21-52-01 21-52-02 21-52-07
PACK OUT TEMP SNSR L	Status	21-52-04
PACK OUT TEMP SNSR R	Status	21-52-04
PACK R	Advisory	21-51-01
PACK R	Status	21-51-01
PARKING BRAKE SET	Memo	N/A
PASS OXYGEN C	Status	35-21-01
PASS OXYGEN L	Status	35-21-01
PASS OXYGEN LOW	Advisory	35-21-01
PASS OXYGEN ON	Advisory	N/A
PASS OXYGEN R	Status	35-21-01
PASS SIGNS ON	Memo	N/A
PASSENGER ADDRESS	Status	23-31-01
PDCU L	Status	23-93-03
PDCU R	Status	23-93-03
PFC CHANNEL	Status	27-02-03
PFC CONTROL LANES	Status	27-02-02
PFCS INTERFACE	Status	27-02-04
PILOT RESPONSE	Advisory	N/A
PILOT RESPONSE	Caution	N/A
PILOT RESPONSE	Warning	N/A
PITCH DOWN AUTHORITY	Caution	None
PITCH UP AUTHORITY	Caution	None
PITOT ADM C	Status	34-21-04
PITOT ADM L	Status	34-21-04
PITOT ADM R	Status	34-21-04
PR SNS REST UPR FWD	Status	21-29-07
PRI FLIGHT COMPUTERS	Caution	None
PRINTER	Comm	N/A
PSEU 1	Status	None
PSEU 1 CHANNEL	Status	32-08-01
PSEU 2	Status	None
PSEU 2 CHANNEL	Status	32-08-01
PVD BOTH ON	Memo	N/A
PVD CAPT ON	Memo	N/A
PVD F/O ON	Memo	N/A
PVD SYS CAPT	Advisory	34-35-01

EICAS MESSAGE	LEVEL	MEL ITEM
PVD SYS CAPT	Status	34-35-01
PVD SYS F/O	Advisory	34-35-01
PVD SYS F/O	Status	34-35-01
R GEAR DOOR SENSOR	Status	32-61-02
R GEAR UPLOCK SENSOR	Status	32-61-03
RADIO ALT C	Status	34-33-01
RADIO ALT L	Status	34-33-01
RADIO ALT R	Status	34-33-01
RADIO TRANSMIT	Advisory	N/A
RAM AIR EXIT DOOR L	Status	21-52-06
RAM AIR EXIT DOOR R	Status	21-52-06
RAM AIR INLET DOOR L	Status	21-52-05
RAM AIR INLET DOOR R	Status	21-52-05
RAT DEPLOY INOP	Status	None
RAT GEN HEAT	Status	29-21-01
RAT UNLOCKED	Advisory	None
RECIRC FAN	Status	21-25-01
RECIRC FANS OFF	Memo	N/A
REMOTE LIGHT SENSOR	Status	31-61-03
RESERVE BRAKES/STRG	Advisory	29-11-06
REVERSER INTERLOCK L	Status	78-34-01
REVERSER INTERLOCK R	Status	78-34-01
RSCF ASG CARD L	Status	31-09-01
RSCF ASG CARD R	Status	31-09-01
RSCF PWR SUPPLY 1	Status	31-09-02
RSCF PWR SUPPLY 2	Status	31-09-02
RUNWAY OVRD	Advisory	N/A
RUNWAY POS	Advisory	N/A
RUNWAY SYS	Advisory	34-46-01
RUNWAY SYS	Status	34-46-01
SAARU	Status	34-21-07
SATCOM	Advisory	23-15-01
SATCOM COOLING FAN L	Status	21-27-09
SATCOM COOLING FAN R	Status	21-27-09
SATCOM DATALINK	Advisory	23-15-01
SATCOM DATALINK OFF	Memo	N/A
SATCOM HI GAIN	Status	23-15-01
SATCOM MESSAGE	Comm	N/A
SATCOM MESSAGE	Comm	N/A
SATCOM SYSTEM	Status	23-15-01



EICAS MESSAGE	LEVEL	MEL ITEM
SATCOM VOICE	Advisory	23-15-01
SATVOICE AVAIL	Comm	N/A
SATVOICE LOST	Advisory	N/A
SEATBELTS ON	Memo	N/A
SELCAL	Comm	N/A
SEMI LEVER GEAR	Status	32-30-02
SEMI LEVER GEAR LOCK	Status	32-30-02
SEMI LEVER GEAR SYS	Status	32-30-02
SGL SOURCE AIR DATA	Advisory	None
SGL SOURCE DISPLAYS	Caution	None
SGL SOURCE RAD ALT	Advisory	None
SINGLE SOURCE F/D	Advisory	N/A
SINGLE SOURCE ILS	Caution	34-31-01
SLATS DRIVE	Caution	None
SLATS PRIMARY FAIL	Caution	None
SLATS SECONDARY FAIL	Status	27-03-03
SMOKE COMP UPR DR 1	Caution	N/A
SMOKE COMP UPR DR 2	Caution	N/A
SMOKE COMP UPR DR 3	Caution	N/A
SMOKE COMP UPR DR 4	Caution	N/A
SMOKE COMP UPR DR 5	Caution	N/A
SMOKE CREW REST F/D	Caution	N/A
SMOKE CREW REST LWR	Caution	N/A
SMOKE CREW REST MAIN	Caution	N/A
SMOKE EQUIP COOLING	Caution	N/A
SMOKE LAV/COMPT	Advisory	N/A
SMOKE LAVATORY	Advisory	N/A
SMOKE LAVATORY	Caution	N/A
SMOKE REST UPR DR 1	Caution	N/A
SMOKE REST UPR DR 2	Caution	N/A
SMOKE REST UPR DR 3	Caution	N/A
SMOKE REST UPR DR 4	Caution	N/A
SMOKE REST UPR DR 5	Caution	N/A
SOV CREW REST LWR	Status	21-29-01
SOV CREW REST MN DK	Status	21-29-02
SOV REST UPR AFT	Status	21-29-04
SOV REST UPR FWD	Status	21-29-04 21-29-06
SOV REST UPR SEC FWD	Status	21-29-06
SPEEDBRAKE ARMED	Memo	N/A
SPEEDBRAKE EXTENDED	Caution	N/A



EICAS MESSAGE	LEVEL	MEL ITEM
SPEEDBRAKE LEV XD CR	Status	27-61-01
SPOILER ACTUATOR	Status	27-61-03
SPOILERS	Advisory	27-61-03
STAB AUTO SHUTDOWN	Status	None
STAB GREENBAND	Advisory	27-48-03 27-48-04
STAB POSITION XD CR	Status	27-48-02
STAB RATE VALVE	Status	27-41-03
STABILIZER	Warning	None
STABILIZER C	Advisory	None
STABILIZER CUTOUT	Advisory	N/A
STABILIZER R	Advisory	None
STALL WARNING SYS L	Status	27-32-01
STALL WARNING SYS R	Status	27-32-01
STANDBY INVERTER	Status	None
STATIC ADM C	Status	34-21-05-03
STATIC ADM L	Status	34-21-05-02
STATIC ADM R	Status	34-21-05-01
SUPRNMRY CALL	Comm	N/A
SUPRNMRY DUCT SENSOR	Status	21-61-19
SUPRNMRY OXYGEN LOW	Advisory	35-21-06
SUPRNMRY OXYGEN ON	Advisory	N/A
SUPRNMRY OXYGEN C	Status	35-21-06 35-21-07
SUPRNMRY OXYGEN L	Status	35-21-06 35-21-07
SUPRNMRY OXYGEN R	Status	35-21-06 35-21-07
SUPRNMRY SIGNS ON	Memo	N/A
SUPRNMRY TRIM VALVE	Status	21-61-20
TAIL SKID	Advisory	32-72-01 32-72-02
TAIL SKID	Status	32-72-01
TAIL SKID SENSOR	Status	32-72-02
TAIL STRIKE	Caution	None
TAIL STRIKE CHAN 1	Status	32-71-01
TAIL STRIKE CHAN 2	Status	32-71-01
TAT	Status	None
TCAS	Advisory	34-45-01
TCAS	Status	34-45-01
TCAS OFF	Advisory	N/A
TCAS RA CAPTAIN	Advisory	34-45-01
TCAS RA F/O	Advisory	34-45-01
TERR OVRD	Advisory	N/A
TERR POS	Advisory	34-46-01



EICAS MESSAGE	LEVEL	MEL ITEM
TERR SYS	Status	34-46-01
THERAPEUTIC OXY ON	Memo	N/A
THRUST ASYM COMP	Advisory	27-02-08
THRUST ASYM COMP	Status	27-02-08
TIRE PRESS	Advisory	32-49-01
TIRE PRESS	Status	32-49-01
TIRE PRESS SYS	Status	32-49-01
TRANSPONDER L	Advisory	34-53-01
TRANSPONDER L	Status	34-53-01
TRANSPONDER R	Advisory	34-53-01
TRANSPONDER R	Status	34-53-01
TRIM AIR L	Advisory	21-62-01 21-62-02
TRIM AIR L	Status	21-62-01
TRIM AIR PRSOV L	Status	21-62-02
TRIM AIR PRSOV R	Status	21-62-02
TRIM AIR R	Advisory	21-62-01 21-62-02
TRIM AIR R	Status	21-62-01
TRIM VLV EQUIP COOL	Status	21-61-18
TURB CASE COOL HPT L	Status	75-24-01
TURB CASE COOL HPT R	Status	75-24-01
TURB CASE COOL LPT L	Status	75-24-01
TURB CASE COOL LPT R	Status	75-24-01
TURB COOLING AIR L	Status	75-24-02
TURB COOLING AIR R	Status	75-24-02
TURB OVHT SNSR ENG L	Status	77-22-01
TURB OVHT SNSR ENG R	Status	77-22-01
VHF DATALINK	Advisory	23-12-01
VHF DATALINK OFF	Memo	N/A
VMO GEAR DOWN	Memo	N/A
VNAV STEP CLIMB	Advisory	N/A
VOR L	Status	34-32-01 34-51-01
VOR R	Status	34-51-01
VSCF VALVE CLOSED L	Status	None
VSCF VALVE CLOSED R	Status	None
WAI CARD	Status	30-11-02
WAI PRESS SENSOR L	Status	30-11-01
WAI PRESS SENSOR R	Status	30-11-01
WAI VALVE L	Status	30-11-01
WAI VALVE R	Status	30-11-01
WARNING SPEAKER L	Status	31-51-03

EICAS MESSAGE	LEVEL	MEL ITEM
WARNING SPEAKER R	Status	31-51-03
WEU CHANNEL L1	Status	31-51-04
WEU CHANNEL L2	Status	31-51-04
WEU CHANNEL R1	Status	31-51-04
WEU CHANNEL R2	Status	31-51-04
WINDOW FLT DECK L	Advisory	56-11-01
WINDOW FLT DECK R	Advisory	56-11-01
WINDOW HEAT	Advisory	None
WINDOW HEAT BACKUP L	Status	None
WINDOW HEAT BACKUP R	Status	None
WINDOW HEAT L FWD	Advisory	30-41-01
WINDOW HEAT L FWD	Status	30-41-01
WINDOW HEAT L SIDE	Advisory	30-41-02
WINDOW HEAT L SIDE	Status	30-41-02
WINDOW HEAT R FWD	Advisory	30-41-01
WINDOW HEAT R FWD	Status	30-41-01
WINDOW HEAT R SIDE	Advisory	30-41-02
WINDOW HEAT R SIDE	Status	30-41-02
WINDOWS	Advisory	56-11-01
WINDSHEAR PRED	Status	34-43-01
WINDSHEAR REAC	Status	34-46-01
WINDSHEAR SYS	Advisory	34-43-01 34-46-01
WXR SYS	Status	34-43-01

--- END ---

	B777 Minimum Equipment List	ATA 05 ETOPS	R8 03/08/10 Page 05-1

ATA 05 Contents

05-00-60	ER (ETOPS) Status.....	05-2
05-00-12	ER (ETOPS) Status.....	05-3
05-00-18	ER (ETOPS) Status.....	05-4

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
05-00-60	ER (ETOPS) Status "DISP.APPR.REQ'D" Administrative Control Item	N	-	(O)(M) Authorized by MCC when: a) ER (ETOPS) operations beyond 60 minutes are not authorized, and b) No specific MEL item applies. NOTE 1: MCC will determine the requirements for restricting an aircraft from ETOPS operations. NOTE 2: This Item Number is only used for restricting the ER (ETOPS) status of the aircraft to 60 minutes or less and is not to be used for deferring the status of any system or component. MCC authorization is required prior to its usage or removal.

MEL ITEM	TAB LOCATION	PLACARD TEXT
05-00-60	Adjacent to each PFD	ER (ETOPS) OPERATIONS BEYOND 60 MINUTES – NOT AUTHORIZED

(O) PROCEDURES

ER (ETOPS) operations beyond 60 minutes - Not Authorized.

(M) PROCEDURES

- The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
- The deferral code ETO must also be entered on the log page and the placard when restricting this item.
- MCC authorization is required prior to its usage or removal.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
05-00-12	ER (ETOPS) Status "DISP.APPR.REQ'D" Administrative Control Item	N	-	(O)(M) Authorized by MCC when: a) ER (ETOPS) operations beyond 120 minutes are not authorized, and b) No specific MEL item applies. NOTE 1: MCC will determine the requirements for restricting an aircraft from ETOPS operations. NOTE 2: This Item Number is only used for restricting the ER (ETOPS) status of the aircraft to 120 minutes or less and is not to be used for deferring the status of any system or component. MCC authorization is required prior to its usage or removal.

MEL ITEM	TAB LOCATION	PLACARD TEXT
05-00-12	Adjacent to each PFD	ER (ETOPS) OPERATIONS BEYOND 120 MINUTES – NOT AUTHORIZED

(O) PROCEDURES

ER (ETOPS) operations beyond 120 minutes - Not Authorized.

(M) PROCEDURES

- The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
- The deferral code ETO must also be entered on the log page and the placard when restricting this item.
- MCC authorization is required prior to its usage or removal.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
05-00-18	ER (ETOPS) Status "DISP.APPR.REQ'D" Administrative Control Item	N	-	(O)(M) Authorized by MCC when: a) ER (ETOPS) operations beyond 180 minutes are not authorized, and b) No specific MEL item applies. NOTE 1: MCC will determine the requirements for restricting an aircraft from ETOPS operations. NOTE 2: This Item Number is only used for restricting the ER (ETOPS) status of the aircraft to 180 minutes or less and is not to be used for deferring the status of any system or component. MCC authorization is required prior to its usage or removal.

MEL ITEM	TAB LOCATION	PLACARD TEXT
05-00-18	Adjacent to each PFD	ER (ETOPS) OPERATIONS BEYOND 180 MINUTES – NOT AUTHORIZED

(O) PROCEDURES

ER (ETOPS) operations beyond 180 minutes - Not Authorized.

(M) PROCEDURES

1. The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
2. The deferral code ETO must also be entered on the log page and the placard when restricting this item.
3. MCC authorization is required prior to its usage or removal.

	B777 Minimum Equipment List	ATA 11 Placards	R13 08/29/14 Page 11-1

ATA 11 Contents

11-00-01	Aircraft Placards / Markings Repair Installed	2

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
11-00-01	Aircraft Placards / Markings Repair Installed "Contact MCC" Administrative Control Item	N	-	- Item may be used to track repair provided: a) MCC determines that placard is FAA required, b) Install repair per TOPP 40-40-05, c) Enter in log book repair is applied per TOPP 40-40-05, and d) Enter in log book that repair is deferred per MEL 11-00-01. NOTE: If MCC determines that placard is not FAA required, use TOPP 40-40-08 (NEF).

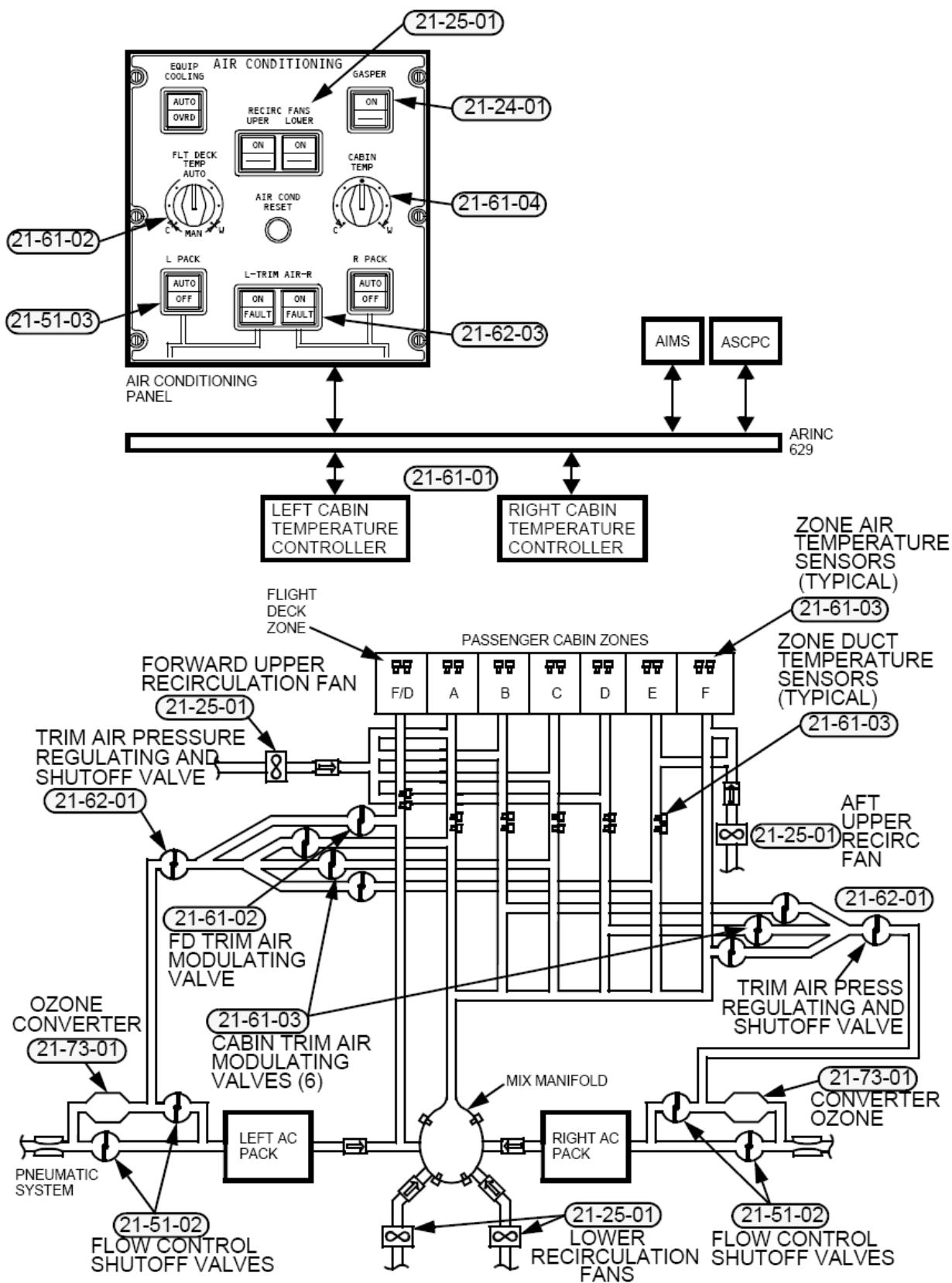
MEL ITEM	TAB LOCATION	PLACARD TEXT
11-00-01	Logbook	____ Repaired per TOPP 40-40-05

ATA 21 Contents

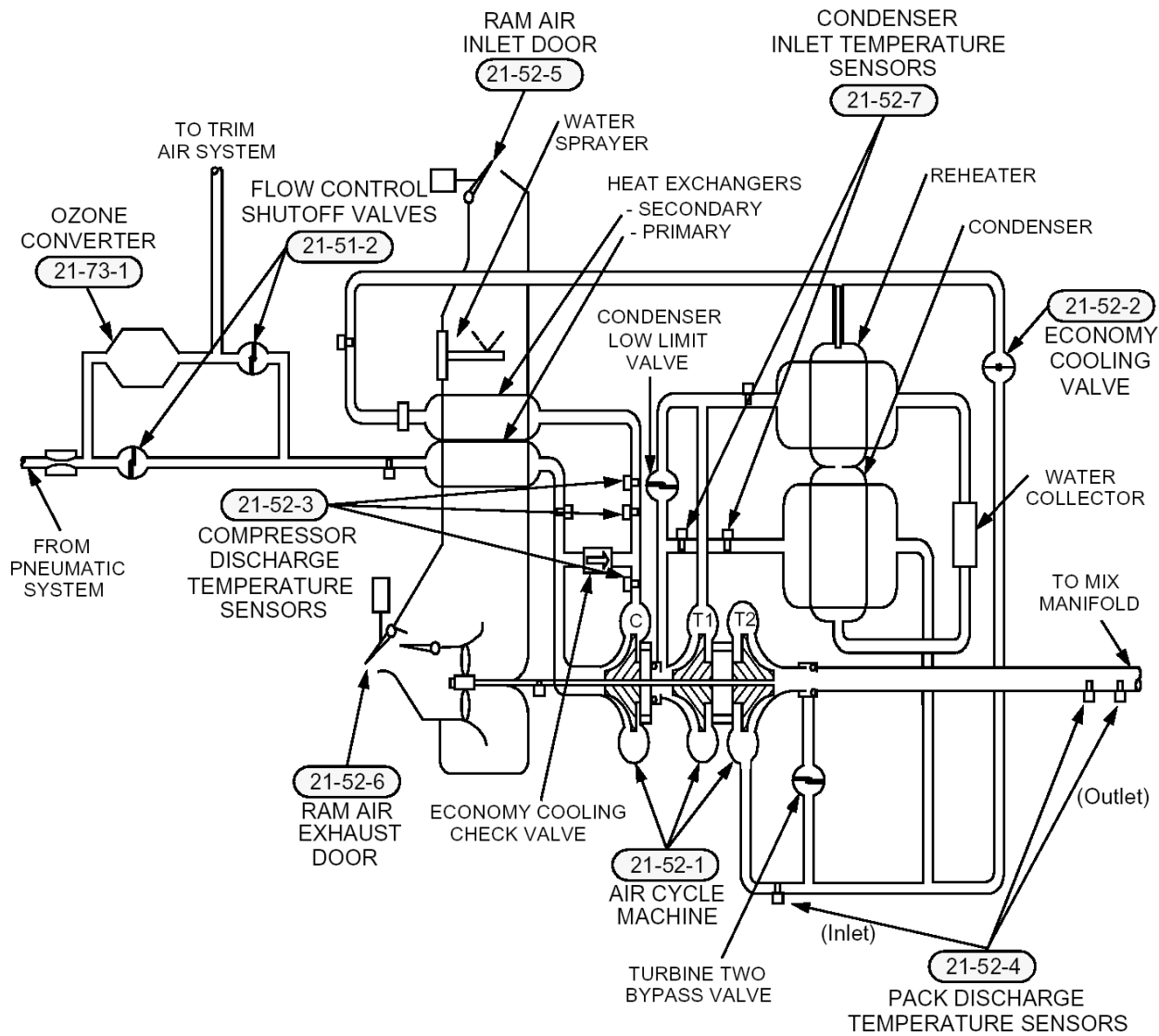
21-00-01	Environmental Control System Miscellaneous Cards (ECSMC)	21-8
21-24-01A	Gaspar Fan (Passenger)	21-9
21-24-01B	GASPER Switch ON Light	21-9
21-25-01A	Recirculation Fans	21-10
21-25-01B	RECIRC FANS Switch ON Lights	21-10
21-26-01	Lavatory / Galley Ventilation Fans	21-12
21-26-02	Chiller Boost Fan (Passenger)	21-13
21-26-03	Bulk Cargo Ventilation Fan	21-14
21-27-01	Equipment Cooling Air Filter	21-15
21-27-02	Equipment Cooling Supply Fans	21-16
21-27-03	Equipment Cooling Override Valve Motors	21-17
21-27-04	Equipment Cooling Low Flow Sensors	21-18
21-27-05	Equipment Cooling Vent Fan	21-19
21-27-06	Equipment Cooling Vent Valve	21-20
21-27-07	Forward Cargo Heat Valve	21-21
21-27-08	Equipment Cooling Controllers	21-23
21-27-09A	SATCOM Backup Cooling Fans	21-24
21-27-10A	In-flight Entertainment System (IFES) Equipment Cooling Fan	21-25
21-27-10B	In-flight Entertainment System (IFES) Equipment Cooling Fan (-200ER)	21-25
21-27-11	In-Flight Entertainment System (IFES) Equipment Cooling Smoke Detector	21-26
21-27-12	Equipment Cooling Duct Pressure Sensors	21-27
	OVERHEAD FLIGHT CREW/ATTENDANT REST SUPPLY SHUTOFF VALVES	21-28
21-29-04A	Overhead Flight Crew Rest (OFCR) (-200ER)	21-28
21-29-04B	Overhead Flight Attendant Rest (OFAR)	21-28
	OVERHEAD FLIGHT CREW/ATTENDANT REST EXHAUST VALVES	21-30
21-29-05A	Overhead Flight Crew Rest (OFCR)	21-30
21-29-05B	Overhead Flight Attendant Rest (OFAR)	21-30
	OVERHEAD FLIGHT CREW REST SUPPLY SHUTOFF VALVES (TAXI, TAKEOFF, AND LANDING INSTALLATION -200LR)	21-32
21-29-06A	Overhead Flight Crew Rest Supply Shutoff Valves	21-32
21-29-06B	Overhead Flight Crew Rest Supply Shutoff Valves	21-32
21-29-07	Overhead Flight Crew Rest (OFCR) Pressure Sensor (-200LR)	21-34
21-31-01A	Auto Cabin Pressure Controls (L or R)	21-35
21-31-02	Manual Cabin Pressure Outflow Valve Controls (FWD or AFT)	21-38
21-31-03A	Outflow Valves (FWD or AFT)	21-41
21-31-03B	OUTFLOW VALVE Switch Lights (MAN Lights)	21-41
21-31-03C	Outflow Valves (AUTO Lights)	21-41
21-31-04	Remote Cabin Pressure Sensor	21-44
21-31-05	Cabin Rate Of Climb Indication	21-45
21-31-06	Cabin Differential Pressure Indication	21-46
21-31-07	Cabin Altitude Indication	21-47
21-31-08	Outflow Valve Position Indications	21-48
21-32-01	Positive Pressure Relief Valves	21-49
	OVERHEAD FLIGHT CREW AND FLIGHT ATTENDANT REST ELECTRIC HEATER SYSTEMS	21-50
21-41-04A	Overhead Flight Crew Rest (OFCR) Heater Systems	21-50

 DELTA	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-2

21-41-04B	OFCR Bunk Heater Systems	21-50
21-41-04C	OFCR Common Area Heater System.....	21-50
21-41-04D	Overhead Flight Attendant Rest (OFAR) Heater Systems	21-50
21-44-01	Aft Cargo Heat Valves.....	21-52
21-44-02	Aft Cargo Compartment Temperature Sensor	21-54
21-44-03	Bulk Cargo Heat Valves	21-55
21-44-04	Bulk Cargo Compartment Temperature Sensor	21-57
21-45-01	Flight Deck Foot Heaters	21-58
21-45-02	Flight Deck Shoulder Heaters	21-59
21-51-01A	Air Conditioning Packs	21-60
21-51-01B	Air Conditioning PACK Switch Lights (OFF Lights)	21-60
21-51-01C	Air Conditioning PACK Switch Lights (AUTO Lights)	21-60
	PACK FLOW CONTROL / SHUTOFF VALVES	21-64
21-51-02A	Upper FCVs	21-64
21-51-02B	Lower FCVs	21-64
21-52-01	Air Cycle Machines (ACM)	21-66
21-52-02A	Economy Cooling Valves (ECV)	21-69
21-52-03	Compressor Discharge Temperature Sensors	21-72
21-52-04	Pack Discharge Temperature Sensors	21-73
21-52-05A	Ram Air Inlet Door Systems.....	21-74
21-52-06A	Ram Air Exhaust Door Systems (-200ER).....	21-76
21-52-06C	Ram Air Exhaust Door Systems (-200LR)	21-76
21-52-07	Condenser Inlet Temperature Control Systems	21-78
21-61-01	Cabin Temperature Controllers (CTC).....	21-81
	FLIGHT DECK ZONE TEMPERATURE CONTROL SYSTEM	21-82
21-61-02A	Flight Deck Zone Temperature Control System	21-82
21-61-02B	AUTO Mode	21-82
21-61-03A	Cabin Zone Temperature Control Systems	21-83
21-61-04	Cabin Temperature Control	21-85
21-62-01A	Trim Air Control Systems	21-86
21-62-02A	Trim Air Pressure Regulating / Shutoff Valves (PRSOVs).....	21-87
21-62-03A	TRIM AIR Switch Lights (FAULT Lights).....	21-89
21-62-03B	TRIM AIR Switch Lights (ON Lights).....	21-89
21-73-01	Ozone Converters	21-90

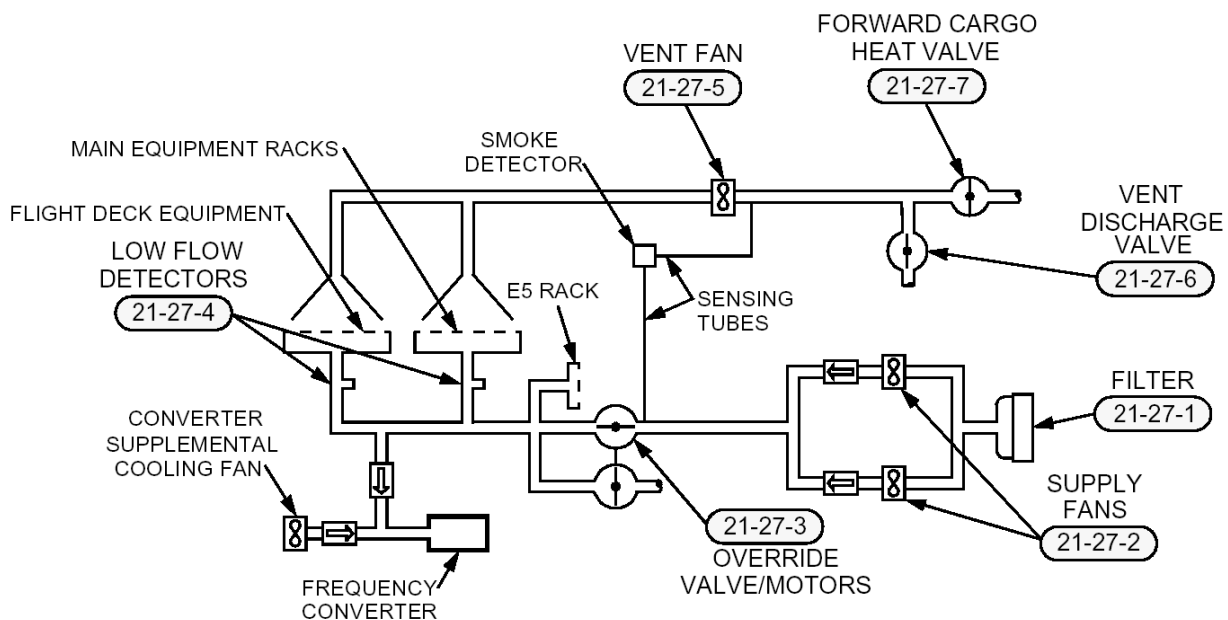


AIR CONDITIONING SYSTEM

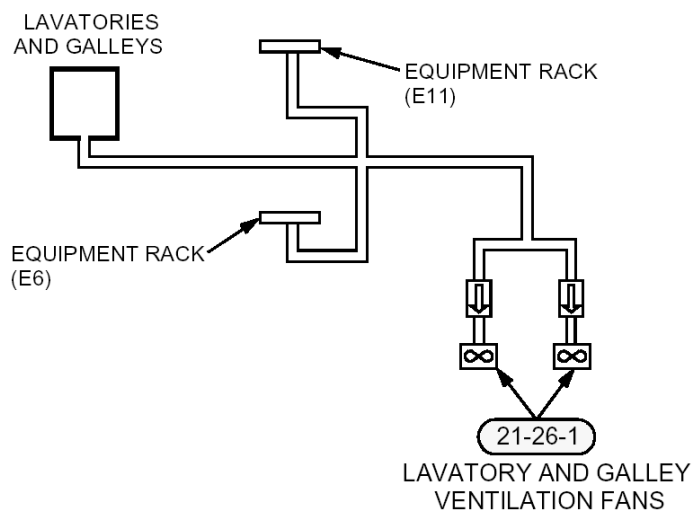


AIR CONDITIONING PACK

(21-51-1)

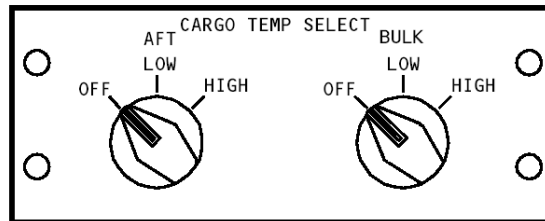
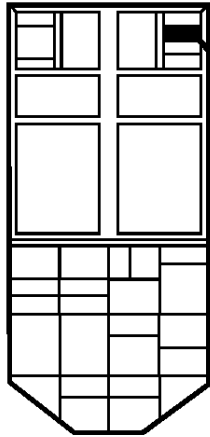


FORWARD EQUIPMENT COOLING SYSTEM

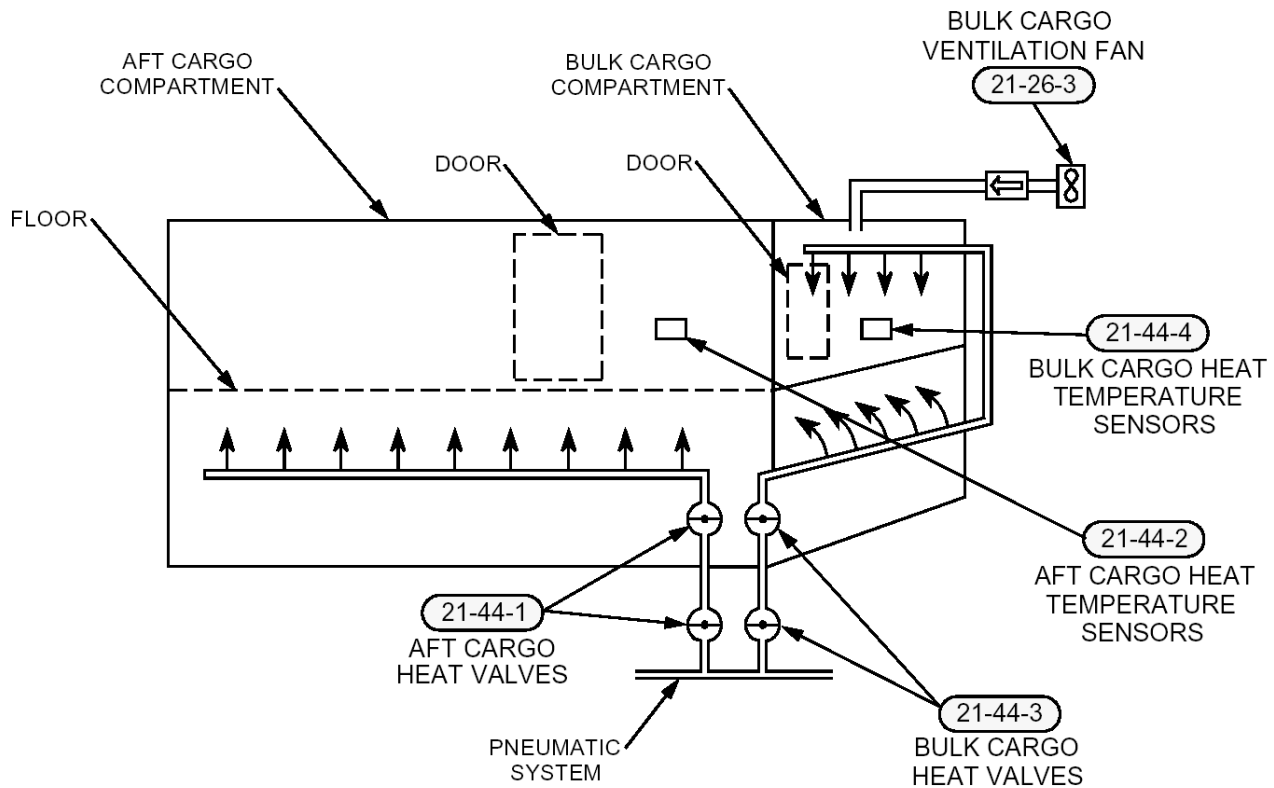


AFT EQUIPMENT COOLING SYSTEM

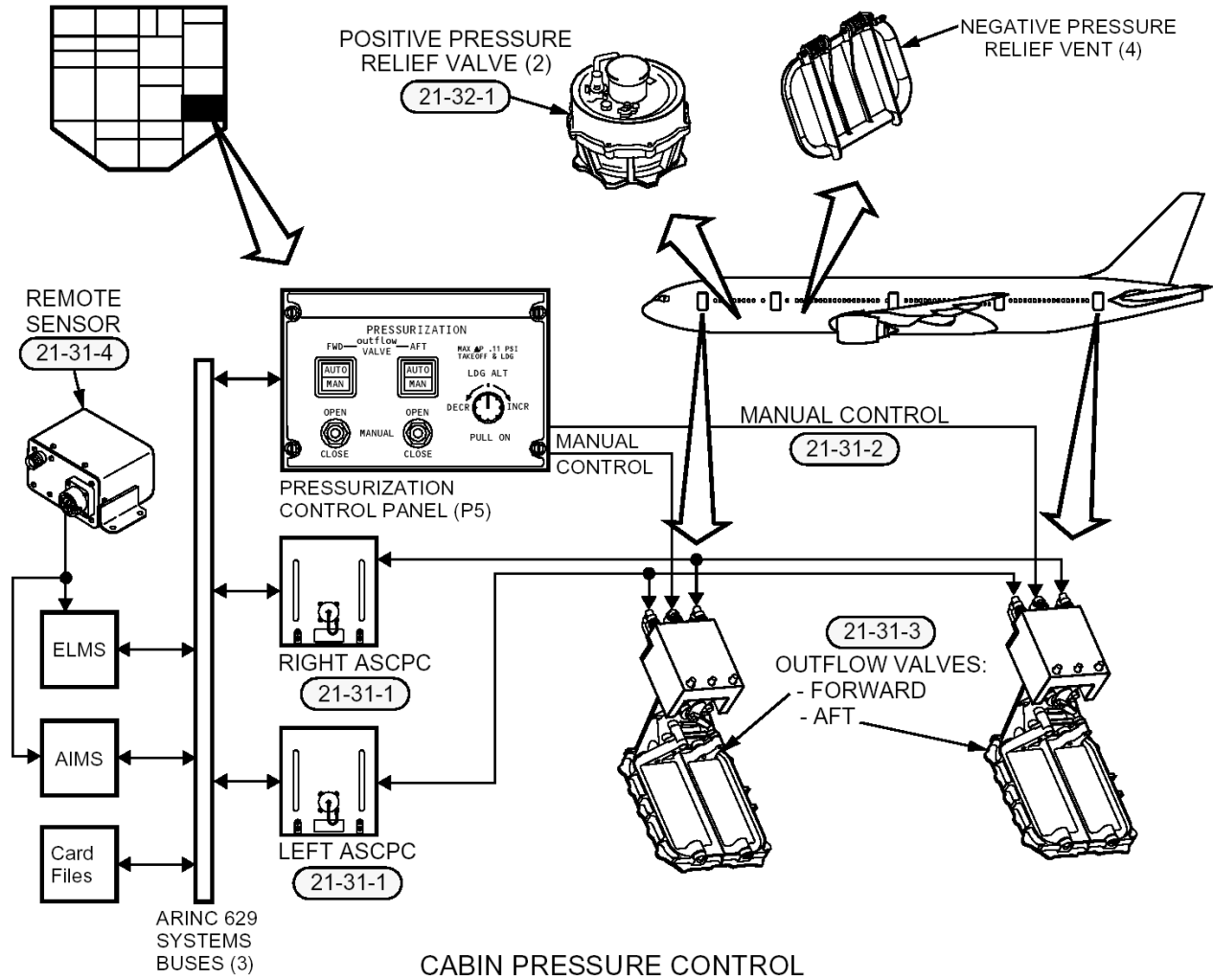
EQUIPMENT COOLING, AND LAVATORY AND GALLEY VENTILATION SYSTEMS



CARGO HEAT PANEL (P61)



AFT AND BULK CARGO COMPARTMENT HEATING SYSTEM



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-00-01	Environmental Control System Miscellaneous Cards (ECSMC) "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) May be inoperative deactivated provided: a) Associated ECSMC is deactivated, b) Both ARINC Signal Gateway cards in the opposite cardfile operate normally, c) Opposite equipment cooling controller operates normally, d) Opposite equipment cooling supply fan operates normally, e) Opposite lavatory / galley fan operates normally, and f) One pack operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-00-01	Air Conditioning Panel	ECSMC INOP

(O) PROCEDURES

- For Left ECSMC deactivated:
 - Aft cargo heat is inoperative and the CARGO HEAT AFT advisory message will be displayed.
 - Live animals and/or temperature sensitive cargo should not be carried in the aft cargo compartment. Predicted cargo compartment temperatures can be found in the tables located in [MEL 21-44-01 \(O\) PROCEDURES](#).
 - Actual aft cargo compartment temperature will not be available on the Air Synoptic.
 - Left lower and forward upper recirculation fans are inoperative.
- For Right ECSMC deactivated:
 - Bulk cargo heat is inoperative and the CARGO HEAT BULK advisory message will be displayed.
 - Live animals and/or temperature sensitive cargo should not be carried in the bulk cargo compartment. Predicted cargo compartment temperatures can be found in the tables located in [MEL 21-44-03 \(O\) PROCEDURES](#).
 - Actual bulk cargo compartment temperature will not be available on the Air Synoptic.
 - Right lower and aft upper recirculation fans are inoperative.

(M) PROCEDURES

NOTE: For a pack to be operating normally, certain items associated with that system must be operative. Refer to [MEL 21-51-01A](#) for a listing of those items.

- Deactivate the inoperative ECSMC.
 - Gain access to the right systems cardfile (P84) or the left systems cardfile (P85) in the main equipment center.
 - Set the power switch for the inoperative ECSMC to the OFF position.
- If the Left ECSMC is deactivated, the left lower and forward upper recirculation fans are inoperative and must be deactivated and deferred per [MEL 21-25-01A](#). The RECIRC FAN status message will be displayed.
- If the Right ECSMC is deactivated, the right lower and aft upper recirculation fans are inoperative and must be deactivated and deferred per [MEL 21-25-01A](#). The RECIRC FAN status message will be displayed.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-9

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-24-01A	Gasper Fan (Passenger)	N	1	0	C (M) May be inoperative deactivated.
21-24-01B	GASPER Switch ON Light	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-24-01A	Near Gasper Fan Switch	Gasper Fan INOP
21-24-01B	Near Gasper Fan Switch	___ GASPER Switch ON Light INOP

(M) PROCEDURES

1. Position the Air Conditioning panel (P5) GASPER switch off and ensure that fan is off.
2. If fan is running, deactivate the gasper fan by pulling and securing the P110 panel GSPR FAN and GSPR FAN CTRL circuit breakers.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-25-01A	Recirculation Fans "DISP.APPR.REQ'D."	N	4	0	C (O)(M) May be inoperative provided associated recirculation fan is deactivated.
21-25-01B	RECIRC FANS Switch ON Lights	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-25-01A	Near Associated Recirculation Fan Switch	___ Recirculation Fan(s) INOP
21-25-01B	Near Associated Recirculation Fan Switch	___ RECIRC FANS Switch ON Lights INOP

(O) PROCEDURES

21-25-01A	RECIRCULATION FANS (UPPER / LOWER)
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 0.7% for two inoperative fans, plus 0.3% for each additional inoperative fan.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

(M) PROCEDURES

21-25-01A

Ensure the inoperative recirculation fan is off.

1. The status message RECIRC FAN indicates one or more fans are inoperative. Use the following procedure to determine which fan(s) are inoperative.
 - a. Select both PACK switches OFF.
 - b. Select both RECIRC FANS switches ON using the switches located on the AIR CONDITIONING panel (P5).
 - c. Use a CDU to select the Air Conditioning maintenance page display on to a multi-function display (MFD).
 - d. Check the RECIRC FAN block on the maintenance page to determine which fans are not operating (LEFT LOWER, RIGHT LOWER, FWD UPPER, AFT UPPER).

CONTINUED NEXT PAGE

2. Pull and secure the appropriate circuit breakers for each inoperative fan.

P110 Panel	L LWR RECIRC FAN	FWD UPR RECIRC FAN
P210 Panel	R LWR RECIRC FAN	AFT UPR RECIRC FAN

NOTE: The recirculation fan switch can be used to turn the associated fan(s) off rather than opening the circuit breaker(s), however, selecting the switch off will cause both associated fans to be inoperative and increase the flight planning fuel penalty if only one fan is actually inoperative. Review the Air Conditioning maintenance page to confirm that both associated fans are off.

3. Select both PACK switches to AUTO.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-26-01	Lavatory / Galley Ventilation Fans	N	2	1 C	(M) May be inoperative deactivated provided the opposite ECSMC operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-26-01	Air Conditioning Panel	___ Lavatory / Galley Ventilation Fan INOP

(M) PROCEDURES

1. For the left lavatory / galley fan ventilation inoperative:
 - a. Pull and secure the P110 panel L LAV/GLY FAN CTRL circuit breaker.
 - b. Pull and secure the P110 panel L LAV/GLY FAN circuit breaker if installed **OR** disconnect, cap and stow the electrical connector (DB21262) from the left lavatory / galley ventilation fan. Gain access to the lavatory / galley vent fans by removing the left endwall in the bulk cargo compartment. Re-install the endwall after disconnecting the fan.
2. For the right lavatory / galley ventilation fan inoperative:
 - a. Pull and secure the P210 panel R LAV/GLY FAN CTRL circuit breaker.
 - b. Pull and secure the P210 panel R LAV/GLY FAN circuit breaker if installed **OR** disconnect, cap and stow the electrical connector (DB21261) from the right lavatory / galley ventilation fan. Gain access to the lavatory / galley vent fans by removing the left endwall in the bulk cargo compartment. Re-install the endwall after disconnecting the fan.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-13

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-26-02	Chiller Boost Fan (Passenger)	N	1	0	C (M) May be inoperative deactivated.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-26-02	Air Conditioning Panel	Chiller Boost Fan INOP

(M) PROCEDURES

Pull and secure the following P210 panel circuit breakers:

CHLR BOOST FAN
CHLR BOOST FAN CTRL

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-26-03	Bulk Cargo Ventilation Fan "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) Bulk cargo ventilation fan is deactivated, and b) Chiller boost fan is deactivated.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-26-03	Cargo Temp Select Panel	Bulk Cargo Ventilation Fan INOP

(O) PROCEDURES

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

(M) PROCEDURES

Deactivate the bulk cargo ventilation fan and the chiller boost fan:

- Pull and secure the following P210 panel circuit breakers:

BULK CGO VENT FAN
BULK CGO VENT FAN CTRL
CHLR BOOST FAN
CHLR BOOST FAN CTRL

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-15

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-01	Equipment Cooling Air Filter	N	1	0	C (M) May be operated with filter removed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-01	Air Conditioning Panel	Equipment Cooling Air Filter Removed

(M) PROCEDURES

Remove the equipment cooling air filter. The equipment cooling system may be operated with the air filter removed.

1. Gain access to the equipment cooling air filter which is located in the forward cargo compartment behind the left sidewall liner between STA 571 and STA 592.
2. Remove the equipment cooling air filter.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-02	Equipment Cooling Supply Fans	N	2	1 C	(M) May be inoperative deactivated provided: a) Opposite ECSMC operates normally, b) Both override valve motors operate normally, c) Both equipment cooling controllers operate normally, and d) Flight is conducted pressurized.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-02	Air Conditioning Panel	___ Equipment Cooling Supply Fan INOP

(M) PROCEDURES

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

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

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

1. For the left equipment cooling supply fan inoperative:
 - a. Pull and secure the P110 panel EQPT CLG SPLY FAN 1 CTRL circuit breaker.
 - b. Disconnect, cap and stow the electrical connector (DB21581) from the left equipment cooling supply fan. The equipment cooling supply fans are located behind the left sidewall panel near the forward ball panel in the forward cargo compartment at STA 535. The left fan is above the right fan.
 - c. Re-install the left sidewall panel after disconnecting the fan.
2. For the right equipment cooling supply fan inoperative:
 - a. Pull and secure the P210 panel EQPT CLG SPLY FAN 2 CTRL circuit breaker.
 - b. Disconnect, cap and stow the electrical connector (DB21582) from the right equipment cooling supply fan. The equipment cooling supply fans are located behind the left sidewall panel near the forward ball panel in the forward cargo compartment. The right fan is below the left fan.
 - c. Re-install the left sidewall panel after disconnecting the fan.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
21-27-03	Equipment Cooling Override Valve Motors	N	2	1	C	(M) May be inoperative deactivated provided: a) Both equipment cooling supply fans operate normally, and b) Both equipment cooling controllers operate normally.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-03	Air Conditioning Panel	___ Equipment Cooling Override Valve Motor INOP

(M) PROCEDURES

1. If the left override valve motor is inoperative, Pull and secure the P310 panel EQPT CLG SMOKE OVRD VLV MOT 1 circuit breaker.
2. If the right override valve motor is inoperative, Pull and secure the P310 EQPT CLG SMOKE OVRD VLV MOT 2 circuit breaker.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-18

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-04	Equipment Cooling Low Flow Sensors	N	2	1 C	(M) One may be inoperative deactivated.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-04	Air Conditioning Panel	___ Equipment Cooling Low Flow Sensor INOP

(M) PROCEDURES

Deactivate the inoperative equipment cooling low flow sensor:

1. For EQUIP FLOW DET (equipment bay low flow sensor inoperative), Pull and secure the P310 panel EQPT BAY LOW FLOW DET circuit breaker.
2. For FLT DECK FLOW DET (flight deck low flow sensor inoperative), Pull and secure the P210 panel F/D LOW FLOW DET circuit breaker.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-05	Equipment Cooling Vent Fan "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) Fan is deactivated, b) For ground operations with OAT 86 degrees F (30 degrees C) or higher, both packs are selected on or airplane is supplied with conditioned air.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-05	Air Conditioning Panel	Equipment Cooling Vent Fan INOP

(O) PROCEDURES

- Forward cargo heat is not available.
- Live animals and/or temperature sensitive cargo should not be carried in the forward cargo compartment.
- Predicted cargo compartment temperature information when forward cargo heat is not available can be found in [MEL item 21-27-07](#).

(M) PROCEDURES

- Deactivate the equipment cooling vent fan.
 - Pull and secure the P110 panel EQPT CLG VENT FAN CTRL circuit breaker.
 - Disconnect, cap and stow the electrical connector (DB21583) from the equipment cooling vent fan.
The equipment cooling vent fan is located behind the middle right sidewall panel forward of the forward cargo door at STA 450.
- For ground operations with OAT at or above 86°F (30°C), ensure adequate forward equipment cooling is available by one of the following means:
 - Select both packs on, **or**
 - Supply airplane with conditioned air.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-06	Equipment Cooling Vent Valve "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) Valve is deactivated CLOSED, b) Equipment cooling vent fan is deactivated, and c) For ground operations with OAT 86 degrees F (30 degrees C) or higher, both packs are selected ON or airplane is supplied with conditioned air.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-06	Air Conditioning Panel	Equipment Cooling Vent Valve INOP

(O) PROCEDURES

- Forward cargo heat is not available.
- Live animals and/or temperature sensitive cargo should not be carried in the forward cargo compartment.
- Predicted cargo compartment temperature information when forward cargo heat is not available can be found in [MEL item 21-27-07](#).

(M) PROCEDURES

- Deactivate the equipment cooling vent valve in the CLOSED position.
 - Pull and secure the following P110 panel circuit breakers:

EQPT CLG VENT VLV
EQPT CLG VENT VLV CTRL

- The equipment cooling vent valve (V21584) is located in the area below the forward cargo compartment floor on the left side. To gain access to the valve, remove the necessary floor panels, and remove the moisture shroud. (Refer to B777 Component Locator Guide or AMM 21-27-21-4 for valve location.)
 - Check the position indicator on the equipment cooling vent valve and perform the following:
 - If the indicator is not in the CLOSED position, turn the manual open/close knob until the position indicator shows that the valve is CLOSED.
 - Reinstall the moisture shroud and cargo floor panels.
- Deactivate the equipment cooling vent fan.
 - Pull and secure the P110 panel EQPT CLG VENT FAN CTRL circuit breaker.
 - Disconnect, cap and stow the electrical connector (DB21583) from the equipment cooling vent fan. The equipment cooling vent fan is located behind the middle right sidewall panel forward of the forward cargo door at STA 450.
 - For ground operations with OAT at or above 86°F (30°C), ensure adequate forward equipment cooling is available by one of the following means:
 - Select both packs ON, OR
 - Supply airplane with conditioned air.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-07	Forward Cargo Heat Valve "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative deactivated closed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-07	Cargo Temp Select Panel	Forward Cargo Heat Valve INOP

(O) PROCEDURES

1. Forward cargo heat is not available.
2. Live animals and/or temperature sensitive cargo should not be transported in the forward cargo compartment.
3. Predicted cargo compartment temperature information when forward cargo heat valve is inoperative is provided below.

NOTE 1: Temperature variations are to be expected during these inoperative conditions.

Ground Operation - steady state temperatures with air conditioning packs on:

Airport OAT Degrees Fahrenheit / Celsius	FWD Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-40 / -40	30 / -1
61 / 16	75 / 24
102 / 39	117 / 47

Inflight - steady state temperatures after approximately 2.5 hours cruise at FL350:

TAT Degrees Celsius	FWD Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-44	35 / 2
-28	48 / 9
-3	68 / 20

NOTE 2: Actual compartment temperature may be monitored on the Air Synoptic.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-22

(M) PROCEDURES

Deactivate the forward cargo heat valve in the closed position.

1. Pull and secure the following P110 panel circuit breakers:

EQPT CLG CGO HT VLV
EQPT CLG CGO HT VLV CTRL

2. The forward cargo heat valve is located in the area below the forward cargo compartment floor on the left side. To gain access to the valve, remove the necessary floor panels, and remove the moisture shroud. (Refer to B777 Component Locator Guide or AMM 21-27-22-4 for valve location.)
3. Check the position indicator on the forward cargo heat valve. If it is not in the CLOSED position, move the manual open/close lever/knob until the position indicator shows that the valve is CLOSED.
4. Reinstall the moisture shroud and cargo floor panels.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
21-27-08	Equipment Cooling Controllers	N	2	1	C	Left controller may be inoperative provided: a) Right equipment cooling supply fan operates normally, b) Right ECSMC card operates normally, c) Both override valve motors operate normally, and d) Flight deck low flow detector operates normally.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-08	Air Conditioning Panel	Left Equipment Cooling Controller INOP

NOTE: Right controller **must** be operative for dispatch. Left and right controllers may be swapped for dispatch. Refer to AMM 21-27-01/401 for controller removal and installation procedures.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-09A	SATCOM Backup Cooling Fans	N	1	0	C (M) May be inoperative deactivated provided both lavatory / galley ventilation fans operate normally.
21-27-09B	SATCOM Backup Cooling Fans "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative deactivated provided: a) SATCOM remains off, b) Flight remains within 180 minutes of landing at a suitable airport, and c) Refer to Airway Manual, Chapter CM, ATC & Flt Control, Communication, for SATCOM requirements. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-09A	Air Conditioning Panel	SATCOM Backup Cooling Fan INOP
21-27-09B	Air Conditioning Panel	SATCOM Backup Cooling Fan INOP

(O) PROCEDURES

21-27-09B

Refer to REMARKS or EXCEPTIONS section above.

(M) PROCEDURES

21-27-09A

Pull and secure the P110 panel L SATCOM BACKUP CLG FAN and L SATCOM BACKUP CLG FAN CTRL circuit breakers.

21-27-09B

1. Pull and secure the P110 panel L SATCOM BACKUP CLG FAN and L SATCOM BACKUP CLG FAN CTRL circuit breakers.
2. To ensure SATCOM system remains off, Pull and secure the P110 panel SATL HIGH L and SATL SDU L circuit breakers, and if a low gain antenna system is installed, Pull and secure P110 panel SATL LOW circuit breaker.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-10A	In-flight Entertainment System (IFES) Equipment Cooling Fan "DISP.APPR.REQ'D."	N	-	0	D (M) May be inoperative provided the In-flight Entertainment System is deactivated and deferred per MEL 23-37-01A .
21-27-10B	In-flight Entertainment System (IFES) Equipment Cooling Fan (-200ER) "DISP.APPR.REQ'D."	N	2	1	C (M) May be inoperative provided: a) Inoperative fan is deactivated, and b) Remaining fan is verified to operate normally ONCE EACH FLIGHT DAY (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-10A	Air Conditioning Panel	___ In-flight Entertainment System (IFES) Equipment Cooling Fan(s) INOP
21-27-10B	Air Conditioning Panel	___ In-flight Entertainment System (IFES) Equipment Cooling Fan INOP

(M) PROCEDURES

21-27-10A

Deactivate the In-Flight Entertainment System and [defer per MEL 23-37-01A](#).

21-27-10B

- Deactivate the inoperative fan.
 - Determine which fan has failed by the associated Low Speed Sensor Light on the fan assembly.
 - Shut down the IFE system per the standard procedure.
 - Pull and secure the following circuit breakers on the P210 Panel:
 - D16 – IFE E2-4 Rack
 - J13 – E2-4 Rack Cooling
 - Remove cooling fan assembly by lifting Ny-Latch Fasteners.
 - Gain access to wiring for failed fan (M9085 is Fan 1, M9086 is Fan 2).
 - Remove wires from fan terminals T1, T3, and T4. Insulate and stow the wires per SWPM.
 - Cover air exit hole for failed fan on the bottom of the fan assembly using speed tape.
 - Reinstall fan assembly on rack using Ny-Latch fasteners.
 - Close the following circuit breakers on the P210 Panel:
 - D16 – IFE E2-4 Rack
 - J13 – E2-4 Rack Cooling
 - Verify good fan is operational and that the associated Low Speed Sensor Light is not illuminated.
 - Remove bulb from "Loss of Cooling" light on Crew Terminal in Cabin.
- ONCE EACH FLIGHT DAY** - Verify remaining IFES cooling fan operates normally.
 - Gain access to the E/E compartment.
 - Verify that the Low Speed Sensor light is not illuminated for the remaining operative fan.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-26

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-11	In-Flight Entertainment System (IFES) Equipment Cooling Smoke Detector "DISP.APPR.REQ'D."	N	1	0	C (M) May be inoperative provided the In-flight Entertainment System is deactivated and deferred per MEL 23-37-01A .

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-11	Air Conditioning Panel	In-flight Entertainment System (IFES) Equipment Cooling Smoke Detector INOP

(M) PROCEDURES

Deactivate the In-Flight Entertainment System and [defer per MEL 23-37-01A](#).

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-27

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-27-12	Equipment Cooling Duct Pressure Sensors	Y	4	0	C May be inoperative provided both equipment cooling low flow sensors operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-27-12	Air Conditioning Panel	___ Equipment Cooling Duct Pressure Sensor(s) INOP

MAINTENANCE NOTE

For inoperative equipment cooling duct pressure sensor causing ground call horn to activate on the ground, deactivate the inoperative sensor.

1. For the E4 or the F/D pressure sensor, open P110 panel E4/FLTDK PRESS XDCR circuit breaker.
2. For the E5 or the VSCF pressure sensor, open P210 panel E5/VSCF PRESS XDCR circuit breaker.
3. Gain access to the inoperative pressure sensor(s).
4. Disconnect, cap and stow the electrical connector from the associated duct pressure sensor(s).
5. Cap the electrical receptacle on the pressure sensor(s).
6. Close the associated circuit breaker(s) opened in Step 1. and/or 2. above.
7. Make logbook entry for deactivated inoperative sensor.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	OVERHEAD FLIGHT CREW/ATTENDANT REST SUPPLY SHUTOFF VALVES				
21-29-04A	Overhead Flight Crew Rest (OFCR) (-200ER) “DISP.APPR.REQ'D.”	N	1	0	C (M) May be inoperative provided: a) OFCR supply shutoff valve is deactivated CLOSED, and b) OFCR is deactivated CLOSED. NOTE 1: These provisions are not intended to prohibit OFCR inspections by crewmembers. NOTE 2: When the Overhead Flight Crew Rest is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
21-29-04B	Overhead Flight Attendant Rest (OFAR) “DISP.APPR.REQ'D.”	N	1	0	C (M) May be inoperative provided: a) OFAR supply shutoff valve is deactivated CLOSED, and b) OFAR is deactivated CLOSED. NOTE 1: These provisions are not intended to prohibit OFAR inspections by crewmembers. NOTE 2: When the Overhead Flight Attendant Rest is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-29-04A	Air Conditioning Panel	Overhead Flight Crew Rest Shutoff Valve INOP
21-29-04B	Air Conditioning Panel	Overhead Flight Attendant Rest Shutoff Valve INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-29

(M) PROCEDURES

21-29-04A

Deactivate the OFCR shutoff valve CLOSED and secure the OFCR entrance door CLOSED.

1. Open P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.
2. Gain access to the inoperative crew rest SOV. The OFCR SOV is located near STA 646, WL 330, LBL 34.
3. Disconnect, cap and stow the inoperative valve electrical connector.
4. Manually position the SOV CLOSED.
5. Reinstall items removed during access to the SOV.
6. Close P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker opened in Step 1. above.
7. Remove all personal items from the associated crew rest.

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

8. Secure the associated crew rest entrance door closed.
9. Install placard INOPERATIVE – DO NOT ENTER.

21-29-04B

Deactivate the OFAR shutoff valve CLOSED and secure the OFAR entrance door CLOSED.

1. Open P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker.
2. Gain access to the inoperative crew rest SOV. The OFAR SOV is located near STA 1116, WL 305, RBL 12.
3. Disconnect, cap and stow the inoperative valve electrical connector.
4. Manually position the SOV CLOSED.
5. Reinstall items removed during access to the SOV.
6. Close P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker opened in Step 1. above.
7. Remove all personal items from the associated crew rest.

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

8. Secure the associated crew rest entrance door closed.
9. Install placard INOPERATIVE – DO NOT ENTER.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	OVERHEAD FLIGHT CREW/ATTENDANT REST EXHAUST VALVES				
21-29-05A	Overhead Flight Crew Rest (OFCR) "DISP.APPR.REQ'D."	N	1	0	C
					(M) May be inoperative provided: a) OFCR exhaust valve is deactivated CLOSED, and b) OFCR is deactivated CLOSED. NOTE 1: These provisions are not intended to prohibit OFCR inspections by crewmembers. NOTE 2: When the Overhead Flight Crew Rest is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
21-29-05B	Overhead Flight Attendant Rest (OFAR) "DISP.APPR.REQ'D."	N	1	0	C
					(M) May be inoperative provided: a) OFAR exhaust valve is deactivated CLOSED, and b) OFAR is deactivated CLOSED. NOTE 1: These provisions are not intended to prohibit OFAR inspections by crewmembers. NOTE 2: When the Overhead Flight Attendant Rest is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-29-05A	Air Conditioning Panel	Overhead Flight Crew Rest Exhaust Valve INOP
21-29-05B	Air Conditioning Panel	Overhead Flight Attendant Rest Exhaust Valve INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-31

(M) PROCEDURES

21-29-05A

Deactivate the OFCR exhaust valve CLOSED and secure the OFCR entrance door CLOSED.

1. Open P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.
2. Gain access to the inoperative crew rest exhaust valve. The OFCR exhaust valve is located near STA 634, WL 331, LBL 27.
3. Disconnect, cap and stow the inoperative valve electrical connector.
4. Manually position the exhaust valve CLOSED.
5. Reinstall items removed during access to the exhaust valve.
6. Close P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker opened in Step 1. above.
7. Remove all personal items from the associated crew rest.

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

8. Secure the associated crew rest entrance door closed.
9. Install placard INOPERATIVE – DO NOT ENTER.

21-29-05B

Deactivate the OFAR exhaust valve CLOSED and secure the OFAR entrance door CLOSED.

1. Open P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker.
2. Gain access to the inoperative crew rest exhaust valve. The OFAR exhaust valve is located near STA 1320, WL 306, RBL 28.
3. Disconnect, cap and stow the inoperative valve electrical connector.
4. Manually position the exhaust valve CLOSED.
5. Reinstall items removed during access to the exhaust valve.
6. Close P210 panel UPR AFT REST SOV/EXH VALVE circuit breaker in Step 1. above.
7. Remove all personal items from the associated crew rest.

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

8. Secure the associated crew rest entrance door closed.
9. Install placard INOPERATIVE – DO NOT ENTER.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	OVERHEAD FLIGHT CREW REST SUPPLY SHUTOFF VALVES (TAXI, TAKEOFF, AND LANDING INSTALLATION -200LR)				
21-29-06A	Overhead Flight Crew Rest Supply Shutoff Valves “DISP.APPR.REQ’D.”	N	2	0	C (M) May be inoperative provided: a) Both valves are deactivated closed, and b) Associated crew rest is deactivated closed. NOTE 1: These provisions are not intended to prohibit OFCR inspections by crewmembers. NOTE 2: When the OFCR is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
21-29-06B	Overhead Flight Crew Rest Supply Shutoff Valves “DISP.APPR.REQ’D.”	N	2	1	C (M) May be inoperative provided: a) Inoperative valve is deactivated closed, b) Remaining supply shutoff valve operates normally, and c) Left air conditioning pack operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-29-06A	Air Conditioning Panel	Both (OFCR) Supply Shutoff Valves INOP
21-29-06B	Air Conditioning Panel	___ (OFCR) Supply Shutoff Valve INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-33

(M) PROCEDURES

21-29-06A

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

Deactivate both OFCR shutoff valves CLOSED and secure the OFCR entrance door CLOSED.

1. Open P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.
2. Open P210 panel UPR FWD REST SEC SOV circuit breaker.
3. Gain access to the OFCR shutoff valves.
4. Disconnect, cap and stow the shutoff valve electrical connectors.
5. Manually position the shutoff valves CLOSED.
6. Close P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker opened in Step 1. above.
7. Close P210 panel UPR FWD REST SEC SOV circuit breaker opened in Step 2. above.
8. Remove all personal items from the associated crew rest.

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

9. Secure the associated crew rest entrance door closed.

21-29-06B

NOTE: For a pack to be operating normally, certain items associated with that system must be operative.
[Refer to MEL 21-51-01A](#) for a listing of those items.

Deactivate the inoperative OFCR shutoff valve CLOSED.

For OFCR primary shutoff valve inoperative:

1. Open P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker.
2. Gain access to the primary OFCR shutoff valve.
3. Disconnect, cap and stow the primary shutoff valve electrical connector.
4. Manually position the primary shutoff valve CLOSED.
5. Close P210 panel UPR FWD REST SOV/EXH VALVE circuit breaker opened in Step 1. above.

For OFCR secondary shutoff valve inoperative:

1. Open P210 panel UPR FWD REST SEC SOV circuit breaker.
2. Gain access to the secondary OFCR shutoff valve.
3. Disconnect, cap and stow the secondary shutoff valve electrical connector.
4. Manually position the secondary shutoff valve CLOSED.
5. Close P210 panel UPR FWD REST SEC SOV circuit breaker opened in Step 1. above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
21-29-07	Overhead Flight Crew Rest (OFCR) Pressure Sensor (-200LR)	Y	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-29-07	Air Conditioning Panel	(OFCR) Pressure Sensor INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-31-01A	Auto Cabin Pressure Controls (L or R)	N	2	1	C (M) One may be inoperative provided: a) Manual cabin pressure control is verified to operate normally on both outflow valves before each departure, and b) Left or right AFDC operates normally.
21-31-01B	Auto Cabin Pressure Controls (L or R) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) One may be inoperative provided: a) One outflow valve is deactivated 7% open, b) Manual cabin pressure control is verified to operate normally on the remaining outflow valve, c) Left or right AFDC operates normally, d) One pack operates normally, and the other pack operates normally or in standby cooling mode, e) Both CTCs operate normally, f) Both engine bleed systems operate normally, and g) With aft outflow valve deactivated 7% open, OFCR and OFAR are deactivated CLOSED. NOTE 1: For forward outflow valve deactivated 7% open and temperatures at OAT 75 F (24 C) and above, supply passenger cabin with conditioned air. NOTE 2: These provisions are not intended to prohibit overhead crew / attendant rest inspections by crewmembers. NOTE 3: When the OFCR and OFAR are unavailable, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-01A	Pressurization Control Panel	___ Auto Cabin Pressure Control INOP
21-31-01B	Pressurization Control Panel	___ Auto Cabin Pressure Control INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-36

(O) PROCEDURES

21-31-01B

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

NOTE 2: The associated EICAS alerting message OUTFLOW VALVE AFT or FWD will be displayed.

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

NOTE 4: With the aft outflow valve deactivated, the OFCR and OFAR are not available for inflight use and must be locked and not entered except for inspection by crewmembers.

For a single manual cabin pressure control inoperative and the associated outflow valve deactivated 7% open:

1. If the remaining operative outflow valve fails during flight and cannot be controlled manually:
 - a. Monitor cabin altitude and differential pressure. Follow existing non-normal procedures when appropriate.
 - b. If required, depressurize the airplane for landing as follows:
 - 1) During descent when below 15,000 ft. MSL, select one pack OFF. If cabin altitude is less than 8,000 ft., select both packs OFF.
 - 2) During descent when below 10,000 ft. MSL, select remaining pack OFF.

(M) PROCEDURES

21-31-01A

1. Position FWD & AFT Pressurization Panel (P5) Outflow Valve switches to MAN.

NOTE: Outflow valve position indication on EICAS may blank when MAN is selected.

2. Hold the FWD & AFT Pressurization Panel (P5) Outflow Valve Manual switches CLOSE until the EICAS outflow valve position indicator is CL or if EICAS indication is not available, hold the switches CLOSE for 30 seconds.
3. Visually verify that the outflow valve doors are closed.
4. Hold the FWD & AFT Pressurization Panel (P5) Outflow Valve Manual switches OPEN until the EICAS outflow valve position indicator is OP or if EICAS indication is not available, hold the switches OPEN for 30 seconds.
5. Visually verify that the outflow valve doors are full open.
6. Position both Pressurization Panel (P5) Outflow Valve switches to AUTO.

21-31-01B

NOTE 1: For a pack to be operating normally, certain items associated with that system must be operative. [Refer to MEL 21-51-01A](#) for a listing of those items.

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

NOTE 3: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-37

For a single manual cabin pressure control inoperative and the associated outflow valve deactivated 7% open:

1. Deactivate inoperative outflow valve 7% open:
 - a. For the forward outflow valve inoperative, Pull and secure the P210 panel R FWD OFL VLV and the P310 panel L FWD OFL VLV circuit breakers.
 - b. For the aft outflow valve inoperative, Pull and secure the P210 panel R AFT OFL VLV and the P310 panel L AFT OFL VLV circuit breakers.
 - c. Gain access to the outflow valve assembly:
 - 1) The forward outflow valve assembly is installed under the left side of the floor of the Main Equipment Center, below the P110 Panel. Remove the floor panel and the kick panel.
 - 2) The aft outflow valve assembly is installed behind the left sidewall liner at the aft end of the bulk cargo compartment. Remove the sidewall lining in this area.
 - d. Disconnect the electrical connector from the back of the valve control unit.
 - e. Remove one DC motor from the outflow valve assembly. Only one DC motor requires removal to position the outflow valve doors.
 - f. Move the outflow valve doors until the gap between the two doors is 0.375+/-0.031 inches (7% open).
 - g. Reinstall the DC motor.
 - h. Reconnect the electrical connector from the back of the valve control unit.
2. Verify manual cabin pressure control is operating normally on the remaining operative outflow valve:
 - a. Position the operative Pressurization Panel (P5) Outflow Valve switch to MAN.
NOTE: Outflow valve position indication on EICAS may blank when MAN is selected.
 - b. Hold the operative Pressurization Panel (P5) Outflow Valve Manual switch CLOSE until the EICAS outflow valve position indicator is CL or if EICAS indication is not available, hold the switch CLOSE for 30 seconds.
 - c. Visually verify that the outflow valve door is closed.
 - d. Hold the operative Pressurization Panel (P5) Outflow Valve Manual switch OPEN until the EICAS outflow valve position indicator is OP or if EICAS indication is not available, hold the switch OPEN for 30 seconds.
 - e. Visually verify that the outflow valve door is full open.
 - f. Position the operative Pressurization Panel (P5) Outflow Valve switch to AUTO.
3. If AFT outflow valve is deactivated 7% open:
 - a. Remove all personal items from the OFCR and OFAR.
NOTE: Blankets, pillows and other items normally used in the crew rest may remain.
 - b. Secure the associated crew rest entrance door closed.
 - c. Install placard INOPERATIVE – DO NOT ENTER.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-31-02	Manual Cabin Pressure Outflow Valve Controls (FWD or AFT) "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) May be inoperative provided: a) Associated outflow valve is deactivated 7% OPEN, b) Manual cabin pressure control is verified to operate normally on the remaining outflow valve, c) One pack operates normally, and the other pack operates normally or in standby cooling mode, d) Both CTCs operate normally, e) Both engine bleed systems operate normally, and f) With aft outflow valve deactivated 7% OPEN, OFCR and OFAR are deactivated CLOSED. NOTE 1: For forward outflow valve deactivated 7% open and temperatures at OAT 75 F (24 C) and above, supply passenger cabin with conditioned air. NOTE 2: These provisions are not intended to prohibit overhead crew / attendant rest inspections by crewmembers. NOTE 3: When the OFCR and OFAR are unavailable, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-02	Pressurization Control Panel	___ Manual Cabin Pressure Outflow Valve Control INOP

(O) PROCEDURES

For a single manual cabin pressure control inoperative and the associated outflow valve deactivated 7% open:

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

NOTE 2: The associated EICAS alerting message OUTFLOW VALVE AFT or FWD will be displayed.

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

NOTE 4: With the aft outflow valve deactivated, the OFCR and OFAR are not available for inflight use and must be locked and not entered except for inspection by crewmembers.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-39

1. If the remaining operative outflow valve fails during flight and cannot be controlled manually:
 - a. Monitor cabin altitude and differential pressure. Follow existing non-normal procedures when appropriate.
 - b. If required, depressurize the airplane for landing as follows:
 - 1) During descent when below 15,000 ft. MSL, select one pack OFF. If cabin altitude is less than 8,000 ft., select both packs OFF.
 - 2) During descent when below 10,000 ft. MSL, select remaining pack OFF.

(M) PROCEDURES

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

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

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

1. Deactivate inoperative outflow valve 7% open:
 - a. For the forward outflow valve inoperative, Pull and secure the P210 panel R FWD OFL VLV and the P310 panel L FWD OFL VLV circuit breakers.
 - b. For the aft outflow valve inoperative, Pull and secure the P210 panel R AFT OFL VLV and the P310 panel L AFT OFL VLV circuit breakers.
 - c. Gain access to the outflow valve assembly:
 - 1) The forward outflow valve assembly is installed under the left side of the floor of the Main Equipment Center, below the P110 Panel. Remove the floor panel and the kick panel.
 - 2) The aft outflow valve assembly is installed behind the left sidewall liner at the aft end of the bulk cargo compartment. Remove the sidewall lining in this area.
 - d. Disconnect the electrical connector from the back of the valve control unit.
 - e. Remove one DC motor from the outflow valve assembly. Only one DC motor requires removal to position the outflow valve doors.
 - f. Move the outflow valve doors until the gap between the two doors is 0.375+/-0.031 inches (7% open).
 - g. Reinstall the DC motor.
 - h. Reconnect the electrical connector from the back of the valve control unit.
2. For manual cabin pressure control verification of the remaining operative outflow valve:
 - a. Position the associated Pressurization Panel (P5) Outflow Valve switch MAN.
 - b. Hold the associated Pressurization Panel (P5) Outflow Valve Manual switch CLOSE until the EICAS outflow valve position indicator is CL or if EICAS indication is not available, hold the switch CLOSE for 30 seconds.
 - c. Visually verify that the associated outflow valve doors are closed.
 - d. Hold the associated Pressurization Panel (P5) Outflow Valve Manual switch OPEN until the EICAS outflow valve position indicator is OP or if EICAS indication is not available, hold the switch OPEN for 30 seconds.
 - e. Visually verify that the operative outflow valve doors are full open.
 - f. Position the associated Pressurization Panel (P5) Outflow Valve switch AUTO.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-40

3. If AFT outflow valve inoperative / deactivated 7% open:

- a. Remove all personal items from the OFCR and OFAR.

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

- b. Secure the associated crew rest entrance door closed.
- c. Install placard INOPERATIVE – DO NOT ENTER.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			N	2	1	C	REPAIR CATEGORY
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS					
21-31-03A	Outflow Valves (FWD or AFT) “DISP.APPR.REQ’D.”						(O)(M) May be inoperative provided: a) Valve is deactivated 7% OPEN, b) Manual cabin pressure control is verified to operate normally on the remaining outflow valve, c) Left or right auto cabin pressure control operates normally, d) One pack operates normally, and the other pack operates normally or in standby cooling mode, e) Both CTCs operate normally, f) Both engine bleed systems operate normally, and g) With aft outflow valve deactivated 7% OPEN, OFCR and OFAR are deactivated CLOSED. NOTE 1: For forward outflow valve deactivated 7% open and temperatures at OAT 75 F (24 C) and above, supply passenger cabin with conditioned air. NOTE 2: These provisions are not intended to prohibit overhead crew / attendant rest inspections by crewmembers. NOTE 3: When the OFCR and OFAR are unavailable, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
21-31-03B	OUTFLOW VALVE Switch Lights (MAN Lights)	Y	2	0	C		
21-31-03C	Outflow Valves (AUTO Lights)	Y	2	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-03A	Pressurization Control Panel	___ Outflow Valve INOP
21-31-03B	Pressurization Control Panel	___ Outflow Valve MAN Switch Light INOP
21-31-03C	Pressurization Control Panel	___ Outflow Valve AUTO Switch Light INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-42

(O) PROCEDURES

21-31-03A

For a single outflow valve inoperative and deactivated 7% open:

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

NOTE 2: The associated EICAS alerting message OUTFLOW VALVE AFT or FWD will be displayed.

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

NOTE 4: With the aft outflow valve deactivated, the OFCR and OFAR are not available for inflight use and must be locked and not entered except for inspection by crewmembers.

1. If the remaining operative outflow valve fails during flight and cannot be controlled manually:
 - a. Monitor cabin altitude and differential pressure. Follow existing non-normal procedures when appropriate.
 - b. If required, depressurize the airplane for landing as follows:
 - 1) During descent when below 15,000 ft. MSL, select one pack OFF. If cabin altitude is less than 8,000 ft., select both packs OFF.
 - 2) During descent when below 10,000 ft. MSL, select remaining pack OFF.

(M) PROCEDURES

21-31-03A

NOTE 1: To determine operational status of pack and engine bleed systems, see tables under NOTE 1 and NOTE 2 in the (M) PROCEDURES for MEL item 21-61-01A.

NOTE 2: If one pack is being operated in standby cooling mode, the associated PACK L or R alerting and status EICAS messages must not be displayed. The associated PACK MODE L or R alerting EICAS message will be displayed.

1. Deactivate inoperative outflow valve 7% open:
 - a. For the forward outflow valve inoperative, Pull and secure the P210 panel R FWD OFL VLV and the P310 panel L FWD OFL VLV circuit breakers.
 - b. For the aft outflow valve inoperative, Pull and secure the P210 panel R AFT OFL VLV and the P310 panel L AFT OFL VLV circuit breakers.
 - c. Gain access to the outflow valve assembly:
 - 1) The forward outflow valve assembly is installed under the left side of the floor of the Main Equipment Center, below the P110 Panel. Remove the floor panel and the kick panel.
 - 2) The aft outflow valve assembly is installed behind the left sidewall liner at the aft end of the bulk cargo compartment. Remove the sidewall lining in this area.
 - d. Disconnect the electrical connector from the back of the valve control unit.
 - e. Remove one DC motor from the outflow valve assembly. Only one DC motor requires removal to position the outflow valve doors.
 - f. Move the outflow valve doors until the gap between the two doors is 0.375+/-0.031 inches (7% open).
 - g. Reinstall the DC motor.
 - h. Reconnect the electrical connector from the back of the valve control unit.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-43

2. For manual cabin pressure control verification of the remaining operative outflow valve:
 - a. Position the associated Pressurization Panel (P5) Outflow Valve switch MAN.
 - b. Hold the associated Pressurization Panel (P5) Outflow Valve Manual switch CLOSE until the EICAS outflow valve position indicator is CL or if EICAS indication is not available, hold the switch CLOSE for 30 seconds.
 - c. Visually verify that the associated outflow valve doors are closed.
 - d. Hold the associated Pressurization Panel (P5) Outflow Valve Manual switch OPEN until the EICAS outflow valve position indicator is OP or if EICAS indication is not available, hold the switch OPEN for 30 seconds.
 - e. Visually verify that the operative outflow valve doors are full open.
 - f. Position the associated Pressurization Panel (P5) Outflow Valve switch AUTO.
3. If AFT outflow valve inoperative / deactivated 7% open:
 - a. Remove all personal items from the OFCR and OFAR.
NOTE: Blankets, pillows and other items normally used in the crew rest may remain.
 - b. Secure the associated crew rest entrance door closed.
 - c. Install placard INOPERATIVE – DO NOT ENTER.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-44

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-31-04	Remote Cabin Pressure Sensor	Y	1	0 C	May be inoperative provided both Auto Cabin Pressure Controls operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-04	Pressurization Control Panel	Remote Cabin Pressure Sensor INOP

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-45

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-31-05	Cabin Rate Of Climb Indication	Y	1	0 C	May be inoperative provided both Auto Cabin Pressure Controls operate normally.

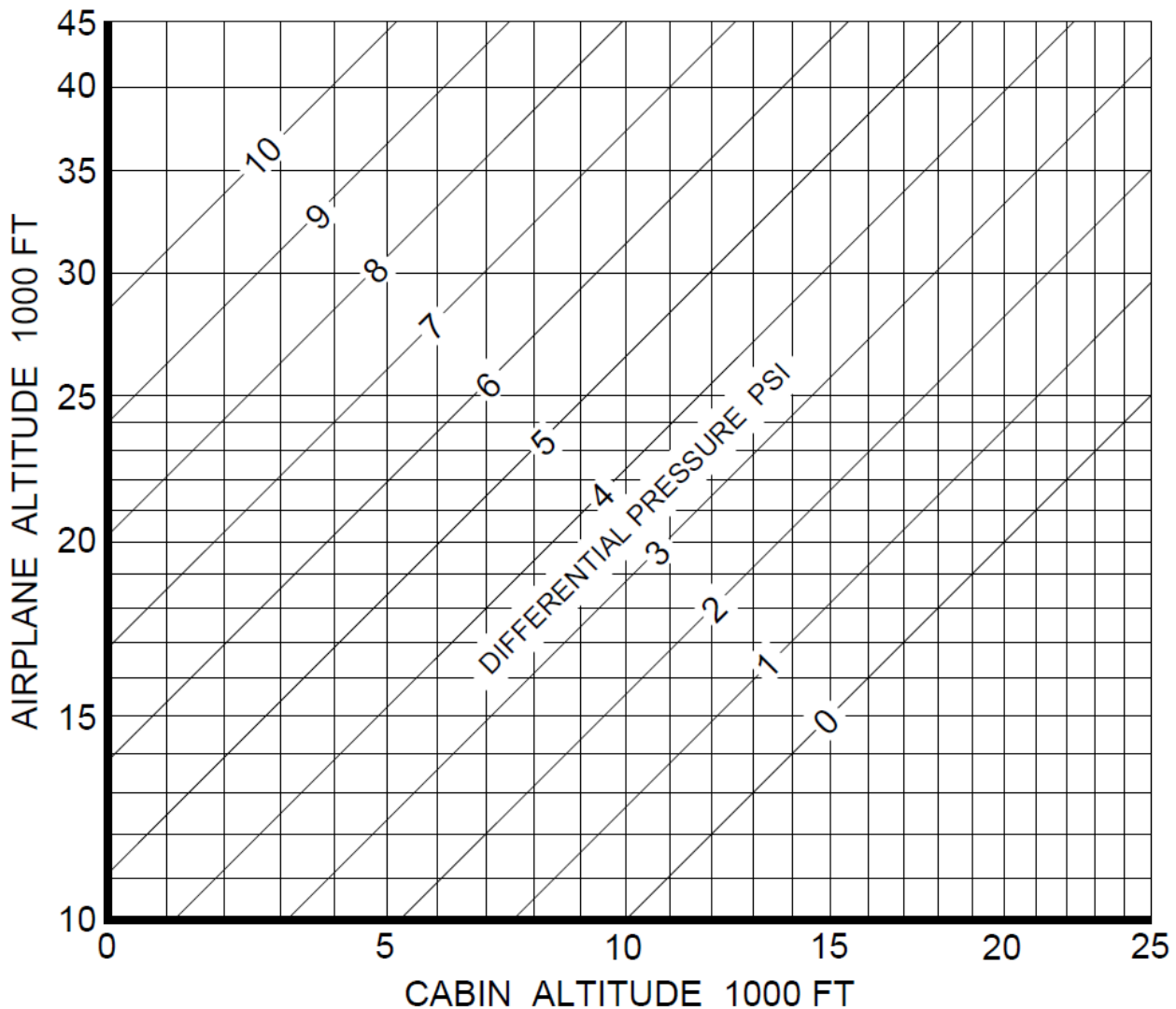
MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-05	Pressurization Control Panel	Cabin Rate Of Climb Indication INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-31-06	Cabin Differential Pressure Indication	Y	1	0	C (O) May be inoperative provided: a) Cabin altitude indication operates normally, and b) A chart is provided to convert cabin altitude to cabin differential pressure.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-06	Pressurization Control Panel	Cabin Differential Pressure Indication INOP

(O) PROCEDURES

Refer to the chart below to determine cabin differential pressure from indicated values of airplane and cabin altitude.

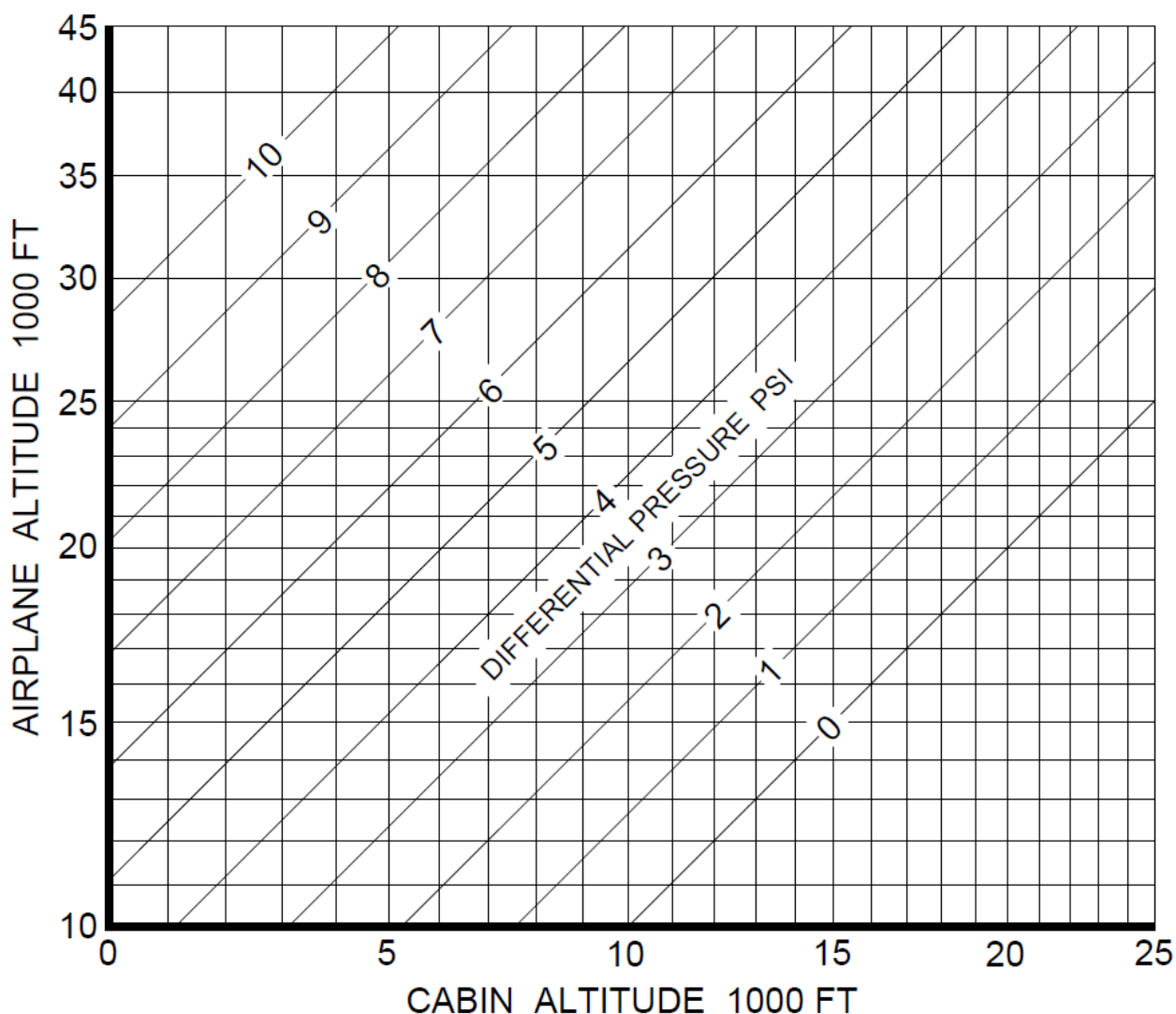


NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION	Y	1	0	C
21-31-07	Cabin Altitude Indication	Y	1	0	C
					(O) May be inoperative provided: a) Cabin differential pressure indication operates normally, and b) A chart is provided to convert cabin differential pressure to cabin altitude.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-07	Pressurization Control Panel	Cabin Altitude Indication INOP

(O) PROCEDURES

Refer to the chart provided to determine cabin altitude from indicated values of cabin differential pressure and airplane altitude.



	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-48

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-31-08	Outflow Valve Position Indications	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-31-08	Pressurization Control Panel	___ Outflow Valve Position Indication(s) INOP

OPERATIONS NOTE:

To manually position the outflow valve(s) full open or closed, position the Outflow Valve Switch to MAN and push and hold the Outflow Valve Manual Switch to OPEN or CLOSE for 30 seconds.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-49

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
21-32-01	Positive Pressure Relief Valves	N	2	1	C	(M) May be inoperative deactivated CLOSED.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-32-01	Pressurization Control Panel	___ Positive Pressure Relief Valve INOP

(M) PROCEDURES

Deactivate the inoperative Positive Pressure Relief Valve in the CLOSED position.

1. To gain access to the valve, remove the applicable sidewall liner on the left side of the forward cargo compartment.
2. If flapper doors are open, from outside the airplane press the flapper doors closed.
3. Disconnect and cap the remote ambient sense hose and the primary metering section cap.
4. Disconnect and cap the integral ambient sense tube and the secondary metering section cap.
5. Replace the sidewall liner.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
OVERHEAD FLIGHT CREW AND FLIGHT ATTENDANT REST ELECTRIC HEATER SYSTEMS						
21-41-04A	Overhead Flight Crew Rest (OFCR) Heater Systems “DISP.APPR.REQ'D.”	N	3	0	C	(M) May be inoperative provided: a) Associated heater system is deactivated, and b) OFCR is deactivated CLOSED. NOTE 1: These provisions are not intended to prohibit overhead crew rest inspections by crewmembers. NOTE 2: When the Overhead Flight Crew Rest is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
21-41-04B	OFCR Bunk Heater Systems	N	2	0	C	(M) May be inoperative provided: a) Associated bunk heater system is deactivated, and b) Common area heater system operates normally.
21-41-04C	OFCR Common Area Heater System	N	1	0	C	(M) May be inoperative provided: a) Common area heater system is deactivated, and b) Bunk heater system(s) operate normally.
21-41-04D	Overhead Flight Attendant Rest (OFAR) Heater Systems	N	2	1	C	(M) One may be inoperative provided associated heater system is deactivated.
21-41-04E	Overhead Flight Attendant Rest (OFAR) Heater Systems “DISP.APPR.REQ'D.”	N	2	0	C	(M) May be inoperative provided: a) Heater systems are deactivated, and b) OFAR is deactivated closed. NOTE 1: These provisions are not intended to prohibit overhead attendant rest inspections by crewmembers. NOTE 2: When the Overhead Flight Attendant Rest is inoperative, coordinate with OCC to determine if alternate attendant rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-41-04A	Air Conditioning Panel	___ Overhead Flight Crew Rest (OFCR) Heater System(s) INOP
21-41-04B	Air Conditioning Panel	___ OFCR Bunk Heater(s) System INOP
21-41-04C	Air Conditioning Panel	OFCR Common Area Heater System INOP
21-41-04D	Air Conditioning Panel	___ OFAR Heater System INOP
21-41-04E	Air Conditioning Panel	Both OFAR Heater Systems INOP

(M) PROCEDURES

21-41-04A

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

1. Pull and secure circuit breaker HEATER 2-OFCR BUNK 1 on P19 OFCR DIST Panel.
2. Pull and secure circuit breaker HEATER 3-OFCR BUNK 2 on P19 OFCR DIST Panel.
3. Pull and secure circuit breaker HEATER 1-OFCR COMM on P19 OFCR DIST Panel.
4. Remove all personal items from the overhead crew rest.

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

5. Secure the associated crew rest entrance door closed.
6. Install placard INOPERATIVE – DO NOT ENTER.

21-41-04B

Deactivate the inoperative crew rest bunk heater as follows:

1. For the bunk 1 electric heater, Pull and secure circuit breaker HEATER 2-OFCR BUNK 1 on P19 OFCR DIST Panel.
2. For the bunk 2 electric heater, Pull and secure circuit breaker HEATER 3-OFCR BUNK 2 on P19 OFCR DIST Panel.

21-41-04C

To deactivate the inoperative crew rest common area heater, Pull and secure circuit breaker HEATER 1-OFCR COMM on P19 OFCR DIST Panel.

21-41-04D

Deactivate the inoperative OFAR heater system as follows:

1. For electric heater 1, Pull and secure circuit breaker HEATER 1-OFAR on P20 OFAR DIST Panel.
2. For electric heater 2, Pull and secure circuit breaker HEATER 2-OFAR on P20 OFAR DIST Panel.

21-41-04E

Deactivate the inoperative OFAR heater system as follows:

1. For electric heater 1, Pull and secure circuit breaker HEATER 1-OFAR on P20 OFAR DIST Panel.
2. For electric heater 2, Pull and secure circuit breaker HEATER 2-OFAR on P20 OFAR DIST Panel.
3. Remove all personal items from the associated attendant rest.

NOTE: Blankets, pillows and other items normally used in the attendant rest may remain.

4. Secure the associated attendant rest entrance door closed.
5. Install placard INOPERATIVE – DO NOT ENTER.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-44-01	Aft Cargo Heat Valves "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided system is deactivated CLOSED.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-44-01	Cargo Temp Select Panel	___ Aft Cargo Heat Valve(s) INOP

(O) PROCEDURES

1. Aft cargo compartment heat is not available.
2. Live animals and/or temperature sensitive cargo should not be carried in the aft cargo compartment.
3. The EICAS alerting message CARGO HEAT AFT will be displayed.
4. Predicted cargo compartment temperature information when aft cargo heat valve is inoperative is provided below:

NOTE 1: Temperature variations are to be expected during these inoperative conditions.

Ground Operation - steady state temperatures with air conditioning packs on:

Airport OAT Degrees Fahrenheit / Celsius	AFT Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-40 / -40	26 / -3
61 / 16	76 / 24
102 / 39	115 / 46

Inflight - steady state temperatures after approximately 2.5 hours cruise at FL350:

TAT Degrees Celsius	AFT Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-44	29 / -2
-28	41 / 5
-3	63 / 17

NOTE 2: Actual compartment temperature may be monitored on the Air Synoptic.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-53

(M) PROCEDURES

Deactivate both aft cargo heat valves off and ensure one valve is in the closed position.

1. Position Overhead Maintenance Panel (P61) Aft Cargo Temperature selector OFF.
2. Pull and secure the following P110 panel circuit breakers:

AFT CGO HT TCV
AFT CGO HT SOV

3. Open the Bulk Cargo Compartment door and gain access to the left sidewall liner just aft of the divider net.
4. Disconnect the divider net along the left sidewall and move it out of the way.
5. Remove the Bulk Cargo Compartment sidewall liner in front of the valves, which are located behind the left sidewall just aft of where the aft and bulk cargo compartments come together.
6. Visually ensure at least one valve, the Aft Cargo Compartment temperature control valve (TCV) or the Aft Cargo Compartment shutoff valve (SOV), remains in the closed position when the pneumatic duct is pressurized.
 - a. Pressurize the airplane pneumatic system. View Air Synoptic display to ensure main pneumatic bleed duct to/from the APU is pressurized.
 - b. Visually ensure at least one aft cargo heat valve remains closed when the APU duct is pressurized.
 - c. Remove pneumatic pressure from the APU duct.
 - d. If one of the valves is closed, proceed to step 8.
7. If both valves remain open, one of the valves must be replaced. If only one of the inoperative valves is replaced, do not accomplish the valve installation test required by the installation procedure.

NOTE: All four of the aft and bulk cargo TCVs and SOVs are interchangeable. Valves may be interchanged between the aft and bulk cargo systems to achieve at least one closed valve in each system.

8. Install the sidewall liner, connect the divider net and close the Bulk Cargo Compartment door.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
21-44-02	Aft Cargo Compartment Temperature Sensor "DISP.APPR.REQ'D."	Y	1	0	C	(O) May be inoperative provided system remains OFF.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-44-02	Cargo Temp Select Panel	Aft Cargo Compartment Temp Sensor INOP

(O) PROCEDURES

1. Aft cargo compartment heat is not available.
2. Live animals and/or temperature sensitive cargo should not be carried in the aft cargo compartment.
3. Position Overhead Maintenance Panel (P61) Aft Cargo Temperature selector OFF.
4. The EICAS alerting message CARGO HEAT AFT will be displayed.
5. Actual compartment temperature will not be available on the Air Synoptic.
6. Predicted cargo compartment temperature information when aft cargo heat is selected OFF is provided below:

NOTE : Temperature variations are to be expected during these inoperative conditions.

Ground Operation - steady state temperatures with air conditioning packs on:

Airport OAT Degrees Fahrenheit / Celsius	AFT Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-40 / -40	26 / -3
61 / 16	76 / 24
102 / 39	115 / 46

Inflight - steady state temperatures after approximately 2.5 hours cruise at FL350:

TAT Degrees Celsius	AFT Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-44	29 / -2
-28	41 / 5
-3	63 / 17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-44-03	Bulk Cargo Heat Valves "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided system is deactivated CLOSED.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-44-03	Cargo Temp Select Panel	___ Bulk Cargo Heat Valve(s) INOP

(O) PROCEDURES

1. Bulk cargo compartment heat is not available.
2. Live animals and/or temperature sensitive cargo should not be carried in the bulk cargo compartment.
3. The EICAS alerting message CARGO HEAT BULK will be displayed.
4. Predicted cargo compartment temperature information when bulk cargo heat is inoperative (Bulk Vent Fan OFF) is provided below:

NOTE 1: Temperature variations are to be expected during these inoperative conditions.

Ground Operation - steady state temperatures with air conditioning packs on:

Airport OAT Degrees Fahrenheit / Celsius	Bulk Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-40 / -40	38 / 3
61 / 16	78 / 25
102 / 39	117 / 47

Inflight - steady state temperatures after approximately 2.5 hours cruise at FL350:

TAT Degrees Celsius	Bulk Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-44	32 / 0
-28	44 / 7
-3	63 / 17

NOTE 2: Actual compartment temperature may be monitored on the Air Synoptic.

CONTINUED NEXT PAGE

(M) PROCEDURES

Deactivate both bulk cargo heat valves off and ensure one valve is in the closed position.

1. Position Overhead Maintenance Panel (P61) Bulk Cargo Temperature selector OFF.
2. Pull and secure the following P210 panel circuit breakers:

BULK CGO HT TCV

BULK CGO HT SOV

3. Open the Bulk Cargo Compartment door and gain access to the left sidewall liner just aft of the divider net.
4. Disconnect the divider net along the left sidewall and move it out of the way.
5. Remove the Bulk Cargo Compartment sidewall liner in front of the valves, which are located behind the left sidewall just aft of where the aft and bulk cargo compartments come together.
6. Visually ensure at least one valve, the Bulk Cargo Compartment temperature control valve (TCV) or the Bulk Cargo Compartment shutoff valve (SOV), remains in the closed position when the pneumatic duct is pressurized.
 - a. Pressurize the airplane pneumatic system. View Air Synoptic display to ensure main pneumatic bleed duct to/from the APU is pressurized.
 - b. Visually ensure at least one aft cargo heat valve remains closed when the APU duct is pressurized.
 - c. Remove pneumatic pressure from the APU duct.
 - d. If one of the valves is closed, proceed to step 8.
7. If both valves remain open, one of the valves must be replaced. If only one of the inoperative valves is replaced, do not accomplish the valve installation test required by the installation procedure.

NOTE: All four of the aft and bulk cargo TCVs and SOVs are interchangeable. Valves may be interchanged between the aft and bulk cargo systems to achieve at least one closed valve in each system.

8. Install the sidewall liner, connect the divider net and close the Bulk Cargo Compartment door.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-44-04	Bulk Cargo Compartment Temperature Sensor "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided system remains OFF.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-44-04	Cargo Temp Select Panel	Bulk Cargo Compartment Temp Sensor INOP

(O) PROCEDURES

1. Bulk cargo compartment heat is not available.
2. Live animals and/or temperature sensitive cargo should not be carried in the bulk cargo compartment.
3. Position Overhead Maintenance Panel (P61) Bulk Cargo Temperature selector OFF.
4. The EICAS alerting message CARGO HEAT BULK will be displayed.
5. Actual compartment temperature will not be available on the Air Synoptic.
6. Predicted cargo compartment temperature information when bulk cargo heat is selected OFF is provided below:

NOTE: Temperature gradients are to be expected during these inoperative conditions.

Ground Operation - steady state temperatures with air conditioning packs on:

Airport OAT Degrees Fahrenheit / Celsius	Bulk Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-40 / -40	38 / 3
61 / 16	78 / 25
102 / 39	117 / 47

Inflight - steady state temperatures after approximately 2.5 hours cruise at FL350:

TAT Degrees Celsius	Bulk Cargo Compartment Temperature Degrees Fahrenheit / Celsius
-44	32 / 0
-28	44 / 7
-3	63 / 17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-45-01	Flight Deck Foot Heaters	N	2	0	C (M) May be inoperative OFF.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-45-01	Near Flight Deck Foot Heater Switch(es)	___ Flight Deck Foot Heater(s) INOP

(M) PROCEDURES

If a foot heater has failed such that it cannot be selected OFF, the inoperative heater can be deactivated as follows:

1. If the Captain's foot heater cannot be selected off, Pull and secure the following circuit breakers on the P110 panel:

CAPT FT & SHLDR HTR
CAPT FT & SHLDR HTR CTRL

NOTE: Captain's shoulder heat is also deactivated with these CBs pulled.

2. If the First Officer's foot heater cannot be selected off, Pull and secure the following circuit breakers on the P210 panel.

F/O FT & SHLDR HTR
F/O FT & SHLDR HTR CTRL

NOTE: First Officer's shoulder heat is also deactivated with these CBs pulled.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-59

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-45-02	Flight Deck Shoulder Heaters	N	2	0	C (M) May be inoperative OFF.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-45-02	Near Flight Deck Shoulder Heater Switch(es)	___ Flight Deck Shoulder Heater(s) INOP

(M) PROCEDURES

If a shoulder heater has failed such that it cannot be selected OFF, the inoperative heater can be deactivated as follows:

1. If the Captain's shoulder heater cannot be selected off, Pull and secure the following circuit breakers on the P110 panel:

CAPT FT & SHLDR HTR
CAPT FT & SHLDR HTR CTRL

NOTE: Captain's foot heat is also deactivated with these CBs pulled.

2. If the First Officer's shoulder heater cannot be selected off, Pull and secure the following circuit breakers on the P210 panel:

F/O FT & SHLDR HTR
F/O FT & SHLDR HTR CTRL

NOTE: First Officer's foot heat is also deactivated with these CBs pulled.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-51-01A	Air Conditioning Packs "DISP.APPR.REQ'D."	Y	2	1	C (O) May be inoperative provided: a) Remaining pack operates normally, b) Both engine bleed systems operates normally, c) Both outflow valves operate normally, d) Flight remains within 60 minutes of landing at a suitable airport, and e) Appropriate performance adjustments are applied.
21-51-01B	Air Conditioning PACK Switch Lights (OFF Lights)	Y	2	0	C
21-51-01C	Air Conditioning PACK Switch Lights (AUTO Lights)	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-51-01A	Air Conditioning Panel	___ Pack INOP
21-51-01B	Air Conditioning Panel	___ Air Conditioning PACK Switch Lights OFF Lights INOP
21-51-01C	Air Conditioning Panel	___ Air Conditioning PACK Switch Lights AUTO Lights INOP

NOTE: When necessary, the associated upper and lower pack flow control and shutoff valves may be locked CLOSED to deactivate an inoperative pack provided there is no bleed duct damage upstream of the flow control valves and the airplane is dispatched per MEL item 21-51-01A. For pack flow control deactivation procedures, refer to (M) PROCEDURES, item MEL 21-51-02A/B. Disregard Steps 2.a. through 2.d. If the upper and lower pack flow control and shutoff valves are to be locked CLOSED, Maintenance is Required and Flight Crew May **Not** Placard.

CONTINUED NEXT PAGE

(O) PROCEDURES

21-51-01A

NOTE 1: For a pack to be operating normally, the following items associated with that pack system must be operative. If none of the Status Messages listed below are displayed on EICAS, that pack is considered to be operating normally.

ITEM	MEL ITEM NO.	ASSOCIATED STATUS MSG
Air Conditioning Pack	21-51-01A	PACK L or R
Pack Flow Ctrl./Shutoff Valves (FCV)	21-51-02	PACK FCV L or R
Air Cycle Machine (ACM)	21-52-01	PACK ACM L or R
Econ. Cooling Valve (ECV)	21-52-02	ECON COOL VALVE L or R
Comp. Dischg. Temp. Snsr.	21-52-03	CMPRSR SENSOR L or R
Pack Dischg. Temp. Snsr	21-52-04	PACK OUT TEMP SNSR L or R
Ram Air Inlet Door Sys. (may be inoperative secured full open and still operate normally)	21-52-05	RAM AIR INLET DOOR L or R
Ram Air Exhaust Door Sys. (if installed) (may be inoperative secured full open and still operate normally)	21-52-06	RAM AIR EXIT DOOR L or R
Cond. Inlet Temp. Snsr. Sys.	21-52-07	COND TEMP SENSOR L or R

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

NOTE 3: Aft and bulk cargo heating may be affected. Depending on cargo type and ambient conditions, compartment temperatures may be as cold as 55 degrees F (13 degrees C) with HIGH selected.

NOTE 4: With left pack inoperative or off, temperature control in the OFCR and OFAR may be degraded.

NOTE 5: If the air cycle machine fails on the remaining pack, the pack will operate continuously in standby cooling mode, regardless of altitude or outside air temperature, to maintain cabin pressurization. A single pack in standby cooling mode is capable of maintaining pressurization at cruise altitude.

NOTE 6: (-200LR only) If left pack is inoperative the APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position associated Pack switch off.
2. The flight must remain within 60 minutes of landing at a suitable airport.
3. Operate the wing anti-ice manually.
 - a. Position WING ANTI-ICE selector OFF.
 - b. For flaps up and wing anti-ice required (do not use during takeoff and landing):
 - 1) Position the ENG Bleed switch associated with the inoperative pack OFF.

NOTE : The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

- 2) Position WING ANTI-ICE selector ON, then OFF as required.
 - 3) Prior to landing, position the ENG Bleed switch associated with the inoperative pack ON.
4. For a FIRE CARGO AFT or FIRE CARGO FWD warning message, accomplish the associated Non-Normal Checklist and the following:
 - a. If above FL330, descend to FL330.
 - b. Position both ENGINE ANTI-ICE selectors ON at top-of-descent.
5. If smoke is detected in the Overhead Flight Attendant Rest (OFAR), position AFT and BULK CARGO TEMP selectors OFF.

CONTINUED NEXT PAGE

21-51-01A	AIR CONDITIONING PACKS
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	Flight must remain within 60 minutes of landing at a suitable airport.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 6,800 lbs. 2. Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

21-51-01A	AIR CONDITIONING PACKS
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	Flight must remain within 60 minutes of landing at a suitable airport.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 8,200 lbs. 2. Reduce T/O CLIMB LIMIT by 8,200 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

21-51-01A	AIR CONDITIONING PACKS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	Flight must remain within 60 minutes of landing at a suitable airport.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 14,800 lbs. 2. Reduce T/O CLIMB LIMIT by 14,800 lbs. TAKEOFF – PACKS OFF (or for right pack inop, use APU to Pack Takeoff Supplementary Procedure) None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	PACK FLOW CONTROL / SHUTOFF VALVES				
21-51-02A	Upper FCVs "DISP.APPR.REQ'D."	N	2	0	C (M) May be inoperative locked CLOSED provided associated lower FCV operates normally.
21-51-02B	Lower FCVs "DISP.APPR.REQ'D."	N	2	1	C (M) May be inoperative locked CLOSED provided: a) Opposite pack operates normally, and b) Associated upper FCV operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-51-02A	Air Conditioning Panel	Upper Pack Flow Control / Shutoff Valve(s) (FCVs) INOP
21-51-02B	Air Conditioning Panel	___ Lower Pack Flow Control / Shutoff Valve (FCV) INOP

NOTE 1: The above EICAS Status messages indicate that one (but not both) of the two left/right pack flow control valves (FCV) are not in the commanded position. Determine which valve has failed using CMC or operating packs and observing valve position on the Air Conditioning Maintenance Page on an MFD.

NOTE 2: If left lower FCV is locked closed, ozone conversion for the flight deck supply air is inoperative ([Defer per MEL Item 21-73-01](#)).

NOTE 3: The pack associated with the inoperative FCV may be used.

NOTE 4: (-200LR only) If left upper FCV is inoperative, the APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

NOTE 5: For a pack to be operating normally, certain items associated with that system must be operative. [Refer to MEL 21-51-01A](#) for a listing of those items.

NOTE 6: The lower FCV is interchangeable with the upper FCV.

CONTINUED NEXT PAGE

(M) PROCEDURES

21-51-02A, 21-51-02B

1. Lock the inoperative flow control valve(s) in the closed position:
 - a. Depressurize the pneumatic system.
 - b. Open the appropriate circuit breakers for the pack(s) with an inoperative FCV:

Left Pack CBs (P110 panel)	Right Pack CBs (P210 panel)
L CTC CHAN 1 (AC)	R CTC CHAN 1 (AC)
L CTC CHAN 1 (DC)	R CTC CHAN 1 (DC)
L CTC CHAN 2 (AC)	R CTC CHAN 2 (AC)
L CTC CHAN 2 (DC)	R CTC CHAN 2 (DC)
L ECV/FCV POS SNSR	R ECV/FCV POS SNSR

- c. Open the appropriate ECS access door to get access to the inoperative FCV(s),
 - 1) Left pack: door 195EL.
 - 2) Right pack: door 196ER
- d. Lock the inoperative FCV(s) closed.
 - 1) Remove the locking plug from the FCV actuator boss.
 - 2) Look at the manual lock to see if it is in the open (OP) position or the closed (CL) position. If it is not in the closed position turn the manual wrench until the lock indicates CL.
 - 3) Install the locking plug in the manual lock and tighten.

CAUTION: The valve and locking plug may be damaged if excessive torque is used. The 20 pound-feet placard on the valve pertains to manually opening/closing valve, not to the locking plug.

- e. Close the ECS access door(s) opened in step 1c.
 - f. Close the circuit breakers opened in step 1b.
2. (For all -200ER, 7101 and 7102 only): Confirm that the correct flow control valve has been locked closed as follows:
 - a. Pressurize the pneumatic system.
 - b. Position Air Conditioning Panel (P5) associated PACK switch AUTO.
 - c. Confirm that the associated PACK L or R EICAS advisory message and PACK L or R status message are not displayed.

NOTE: If both pack FCVs for an associated pack are failed / locked closed, the PACK L or R advisory and status messages will be displayed and the PACK FCV L or R status message will not be displayed.
 - d. Depressurize the pneumatic system.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-52-01	Air Cycle Machines (ACM) "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) One may be inoperative provided: a) Associated second stage turbine bypass valve is locked OPEN, b) Ram air inlet and exit doors operate normally or are secured OPEN, c) Opposite pack operates normally, d) Both engine bleed systems operate normally, and e) Appropriate performance adjustments are applied.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-52-01	Air Conditioning Panel	___ ACM INOP

(O) PROCEDURES

NOTE 1: The pack with the inoperative ACM will remain OFF on the ground and at low altitudes with the PACK MODE advisory message displayed and PACK OFF light illuminated. The pack will operate in standby cooling mode when appropriate altitude and OAT conditions exist with the PACK OFF light extinguished.

NOTE 2: If the opposite pack fails inflight, the pack operating in standby cooling mode will continue to operate regardless of altitude or OAT to maintain cabin pressurization. A pack operating in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

NOTE 3: For left pack operating in standby cooling mode, ventilation and temperature control in the OFCR and OFAR may be degraded.

NOTE 4: (-200LR only) If the Left ACM is inoperative the APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

Operate the wing anti-ice manually.

1. Position WING ANTI-ICE selector OFF.
2. For flaps up and wing anti-ice required (do not use during takeoff and landing):

- a. Position the ENG Bleed switch associated with the inoperative ACM OFF.

NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

- b. Position WING ANTI-ICE selector ON, then OFF as required.
- c. Prior to landing, position the ENG Bleed switch associated with the inoperative ACM ON.

CONTINUED NEXT PAGE

21-52-01	AIR CYCLE MACHINES (ACM)
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 6,800 lbs. 2. Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

21-52-01	AIR CYCLE MACHINES (ACM)
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 8,200 lbs. 2. Reduce T/O CLIMB LIMIT by 8,200 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

CONTINUED NEXT PAGE

21-52-01	AIR CYCLE MACHINES (ACM)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 14,800 lbs. 2. Reduce T/O CLIMB LIMIT by 14,800 lbs. TAKEOFF – PACKS OFF (or for right ACM inop, use APU to Pack Takeoff Supplementary Procedure) None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

(M) PROCEDURES

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

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

The associated second stage turbine bypass valve must be locked in the open position.

1. Depressurize the pneumatic system.
2. For access to the inoperative second stage turbine bypass valve, open the access door for the associated pack: door 195EL for left pack or door 196ER for right pack.
3. Disconnect, cap, and stow the electrical connector from the inoperative valve.

NOTE: It is possible to confuse the second stage turbine bypass valve with the low limit valve. The second stage turbine bypass valve is inboard of the low limit valve on both the left and right packs.

4. If the position indicator does not show open (**O**), turn the manual open/close knob until the indicator shows the valve is open (**O**).
5. Close the access doors.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-52-02A	Economy Cooling Valves (ECV) "DISP.APPR.REQ'D."	Y	2	1	C (O) May be inoperative provided: a) Opposite pack operates normally, b) Both engine bleed systems operate normally, and c) Appropriate performance adjustments are applied.
21-52-02B	Economy Cooling Valves (ECV)	N	2	0	C (M) May be inoperative locked CLOSED.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-52-02A	Air Conditioning Panel	___ Economy Cooling Valve(s) INOP
21-52-02B	Air Conditioning Panel	___ Economy Cooling Valve(s) INOP

(O) PROCEDURES

21-52-02A

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

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

NOTE 3: The pack with the inoperative ECV will remain OFF on the ground and at low altitudes with the PACK MODE advisory message displayed and PACK OFF light illuminated. The pack will operate in standby cooling mode when appropriate altitude and OAT conditions exist with the PACK OFF light extinguished.

NOTE 4: If the opposite pack fails inflight, the pack operating in standby cooling mode will continue to operate regardless of altitude or OAT to maintain cabin pressurization. A pack in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

NOTE 5: For left pack operating in standby cooling mode, ventilation and temperature control in the OFCR and OFAR may be degraded.

NOTE 6: (-200LR only) If the Left ECV is inoperative the APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

Operate the wing anti-ice manually:

1. Position WING ANTI-ICE selector OFF.
2. For flaps up and wing anti-ice required (do not use during takeoff and landing):
 - a. Position the ENG Bleed switch associated with the inoperative ECV OFF .

NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

- b. Position WING ANTI-ICE selector ON, then OFF as required.
- c. Prior to landing, position the ENG Bleed switch associated with the inoperative ECV ON.

CONTINUED NEXT PAGE

21-52-02A	ECONOMY COOLING VALVES (ECV)
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 6,800 lbs. 2. Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

21-52-02A	ECONOMY COOLING VALVES (ECV)
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 8,200 lbs. 2. Reduce T/O CLIMB LIMIT by 8,200 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

CONTINUED NEXT PAGE

21-52-02A	ECONOMY COOLING VALVES (ECV)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 14,800 lbs. 2. Reduce T/O CLIMB LIMIT by 14,800 lbs. TAKEOFF – PACKS OFF (or for right ECV inop, use APU to Pack Takeoff Supplementary Procedure) None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

(M) PROCEDURES

21-52-02B

Use the following procedure when the inoperative economy cooling valve(s) (ECV) must be locked in the CLOSED position.

1. Depressurize the pneumatic system.
2. Open the appropriate circuit breakers for the inoperative ECV(s).

Left Pack CBs (P110 panel)	Right Pack CBs (P210 panel)
L ECV/FCV POS SNSR	R ECV/FCV POS SNSR

3. Gain access to the inoperative ECV(s) by opening the ECS access door for the associated pack (195EL for the left pack or 196ER for the right pack).
4. Lock the inoperative ECV(s) in the closed position.

CAUTION: The valve and locking plug may be damaged if excessive torque is used. The 20 pound-feet placard on the valve pertains to manually opening/closing valve, not to the locking plug.

5. Close the ECS access door(s).
6. Close the circuit breaker(s) opened in Step 2 above.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-72

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
21-52-03	Compressor Discharge Temperature Sensors	N	6	2	C	(M) May be inoperative provided one sensor per pack is verified to operate normally.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-52-03	Air Conditioning Panel	___ Compressor Discharge Temperature Sensor(s) INOP

(M) PROCEDURES

1. Use a CDU to select the Air Conditioning maintenance page on a Multi-Function Display (MFD).
2. To verify that at least one sensor is working in each pack, check that a PACK OUT TEMP readout is provided for both packs on the maintenance page.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-73

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-52-04	Pack Discharge Temperature Sensors	Y	6	2 C	(M) May be inoperative provided one sensor per pack is verified to operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-52-04	Air Conditioning Panel	___ Pack Discharge Temperature Sensor(s) INOP

(M) PROCEDURES

1. Use a CDU to select the Air Conditioning maintenance page on a Multi-Function Display (MFD).
2. To verify that at least one sensor is working in each pack, check that a PACK OUT TEMP readout is provided for both packs on the maintenance page.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-52-05A	Ram Air Inlet Door Systems "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Associated door is secured full OPEN, and b) Appropriate performance adjustments are applied.
21-52-05B	Ram Air Inlet Door Systems "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative CLOSED provided associated pack is not used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-52-05A	Near Associated Pack Switch	___ Ram Air Inlet Door System(s) INOP
21-52-05B	Near Associated Pack Switch	1. ___ Ram Air Inlet Door Systems INOP 2. DO NOT Use ___ Pack

(O) PROCEDURES

21-52-05A

For ram air inlet door secured full open:

NOTE: If the left ram air inlet is secured full open, the left trim air control system should operate normally. If the left trim air system is inoperative, the ability to heat the flight deck will be greatly reduced.

21-52-05A	RAM AIR INLET DOOR SYSTEMS – FULL OPEN
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,200 lbs. for each door inoperative open. 2. Increase BLOCK FUEL by 0.7% for each door inoperative open.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 600 lbs. for each door inoperative open. 2. Reduce T/O CLIMB LIMIT by 600 lbs. for each door inoperative open. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 600 lbs. for each door inoperative open. 2. Reduce LANDING CLIMB LIMIT WT by 600 lbs. for each door inoperative open.

CONTINUED NEXT PAGE

21-52-05A	RAM AIR INLET DOOR SYSTEMS – FULL OPEN
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,300 lbs. for each door inoperative open. 2. Increase BLOCK FUEL by 0.7% for each door inoperative open.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 500 lbs. for each door inoperative open. 2. Reduce T/O CLIMB LIMIT by 500 lbs. for each door inoperative open. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 500 lbs. for each door inoperative open. 2. Reduce LANDING CLIMB LIMIT WT by 500 lbs. for each door inoperative open.

21-52-05B

- Position associated pack switch OFF.
- Comply with applicable **(O) PROCEDURES** in MEL 21-51-01A for an inoperative pack.

(M) PROCEDURES

21-52-05A

- Open the following circuit breakers for the left or right pack system, as applicable:

Left Pack CBs (P110 panel)	Right Pack CBs (P210 panel)
L CTC CHAN 1 (AC)	R CTC CHAN 1 (AC)
L CTC CHAN 1 (DC)	R CTC CHAN 1 (DC)
L CTC CHAN 2 (AC)	R CTC CHAN 2 (AC)
L CTC CHAN 2 (DC)	R CTC CHAN 2 (DC)

- For each inoperative door, do the following:
 - Open the ram air inlet actuator door (191LL for the left door and 192LR for the right door).
 - Disconnect, cap, and stow the electrical connector from the actuator.
 - Disconnect the actuator rod end from the bellcrank.
 - Loosen the screws on the fixed link, and rotate the fixed link 180 degrees.
 - Put the inlet door in the fully open position.
 - Connect the fixed link to the bellcrank.
 - Tighten the screws on the fixed link to 18-28 pound-inches.
 - Close the actuator access door.
- Close the circuit breakers opened in Step 1. above.

21-52-05B

When necessary, a Ram Air Inlet Door cover plate may be installed, which also renders the inlet door(s) inoperative closed. Contact MCC for ER/A with cover plate installation instructions (Ref. Boeing Version 777 AMM 21-00-00/901, available from Delta MEL Group or Boeing).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-52-06A	Ram Air Exhaust Door Systems (-200ER) "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided associated door is secured full OPEN.
21-52-06B	Ram Air Exhaust Door Systems (-200ER) "DISP.APPR.REQ'D."	N	2	1	C (O) May be inoperative provided associated pack is not used.
21-52-06C	Ram Air Exhaust Door Systems (-200LR) "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Associated door is secured full OPEN, and b) Appropriate performance adjustments are applied.
21-52-06D	Ram Air Exhaust Door Systems (-200LR) "DISP.APPR.REQ'D."	N	2	1	C (O) May be inoperative provided associated pack is not used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-52-06A	Near Associated Pack Switch	___ Ram Air Exhaust Door System(s) INOP
21-52-06B	Near Associated Pack Switch	1. ___ Ram Air Exhaust Door System INOP 2. DO NOT Use ___ Pack
21-52-06C	Near Associated Pack Switch	___ Ram Air Exhaust Door System(s) INOP
21-52-06D	Near Associated Pack Switch	1. ___ Ram Air Exhaust Door System INOP 2. DO NOT Use ___ Pack

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(O) PROCEDURES

21-52-06B, 21-52-06D

1. Position associated pack switch OFF.
2. Comply with applicable **(O) PROCEDURES** in MEL 21-51-01A for an inoperative pack.

21-52-06C	RAM AIR EXHAUST DOOR SYSTEMS – FULL OPEN
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	Reduce ENROUTE LIMIT WT by 450 lbs. for each door inoperative open.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 200 lbs. for each door inoperative open. 2. Reduce T/O CLIMB LIMIT by 200 lbs. for each door inoperative open. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 200 lbs. for each door inoperative open. 2. Reduce LANDING CLIMB LIMIT WT by 200 lbs. for each door inoperative open.

(M) PROCEDURES

21-52-06A, 21-52-06C

1. Open the following circuit breakers for the left or right pack system, as applicable:

Left Pack CBs (P110 panel)	Right Pack CBs (P210 panel)
L CTC CHAN 1 (AC)	R CTC CHAN 1 (AC)
L CTC CHAN 1 (DC)	R CTC CHAN 1 (DC)
L CTC CHAN 2 (AC)	R CTC CHAN 2 (AC)
L CTC CHAN 2 (DC)	R CTC CHAN 2 (DC)

2. For each inoperative door, do the following:
 - a. Open the ram air exhaust actuator door (195 QL for the left door and 196QR for the right door).
 - b. Disconnect, cap, and stow the electrical connector from the actuator.
 - c. Disconnect the actuator rod end from the actuator arm assembly.
 - d. Loosen the screws on the fixed link, and rotate the fixed link 180 degrees.
 - e. Position the ram air exhaust door to the fully open position.
 - f. Connect the fixed link to the actuator arm assembly.
 - g. Tighten the screws on the fixed link to 18-28 pound-inches.
 - h. Close the ram air exhaust blowout door(s).
3. Close the applicable circuit breakers opened in Step 1. above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-52-07	Condenser Inlet Temperature Control Systems "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) May be inoperative provided: a) Associated condenser low limit valve is locked open, b) Opposite pack operates normally, c) Both engine bleed systems operate normally, d) Appropriate performance adjustments are applied, and e) Wing anti-ice must not be used with flaps extended.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-52-07	Air Conditioning Panel	___ Condenser Inlet Temperature Control System INOP

(O) PROCEDURES

NOTE 1: The pack with the inoperative condenser inlet temperature control system will remain OFF on the ground and at low altitudes with the PACK MODE advisory message displayed and PACK OFF light illuminated. The pack will operate in standby cooling mode when appropriate altitude and OAT conditions exist with the PACK MODE advisory message and PACK OFF light extinguished.

NOTE 2: Maintenance is required to lock the associated condenser low limit valve in the open position. Locking the condenser low limit valve open may result in display of the associated ECON COOL VALVE L or R status message. No additional maintenance action is required for the ECON COOL VALVE L or R status message.

NOTE 3: If the opposite pack fails inflight, the pack operating in standby cooling mode will continue to operate regardless of altitude or OAT to maintain cabin pressurization. A pack operating in standby cooling mode is capable of maintaining cabin pressurization at cruise altitude.

NOTE 4: For left pack operating in the standby cooling mode, ventilation and temperature control in the OFCR and OFAR may be degraded.

NOTE 5: (-200LR) If the left condenser inlet temperature control system is inoperative the APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

Operate the wing anti-ice manually:

1. Position WING ANTI-ICE selector OFF.
2. For flaps up and wing anti-ice required (do not use wing anti-ice with flaps extended):
 - a. Position the ENG Bleed switch associated with the inoperative condenser inlet temperature control system OFF.
NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
 - b. Position WING ANTI-ICE selector ON, then OFF as required.
 - c. Prior to landing, position the ENG Bleed switch associated with the inoperative condenser inlet temperature control system ON.

CONTINUED NEXT PAGE

21-52-07	CONDENSER INLET TEMPERATURE CONTROL SYSTEMS
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 6,800 lbs. 2. Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

21-52-07	CONDENSER INLET TEMPERATURE CONTROL SYSTEMS
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 8,200 lbs. 2. Reduce T/O CLIMB LIMIT by 8,200 lbs. TAKEOFF – PACKS OFF None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

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21-52-07	CONDENSER INLET TEMPERATURE CONTROL SYSTEMS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 14,800 lbs. 2. Reduce T/O CLIMB LIMIT by 14,800 lbs. TAKEOFF – PACKS OFF (or for right condenser inlet temperature control inop, use APU to Pack Takeoff Supplementary Procedure) None LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

(M) PROCEDURES

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

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

The associated condenser low limit valve must be locked in the open position.

NOTE: Locking the low limit valve open may result in display of the associated ECON COOL VALVE L or R status message. Performing the economy cooling valve (ECV) Installation MAT Test should temporarily clear the ECON COOL VALVE L or R status message, which indicates the ECV is operating normally. The ECV must operate normally or be inoperative open for the pack to operate in standby cooling mode.

1. Depressurize the pneumatic system.
2. Open the ECS access door for the associated pack (195EL for left pack or 196ER for right pack).
3. Disconnect, cap, and stow the electrical connectors from the condenser low limit valve.
4. If the position indicator on the low limit valve does not show open, turn the manual open / close knob until the position indicator shows it is in the open position.
5. Close the ECS access door.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-61-01	Cabin Temperature Controllers (CTC) "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) May be inoperative provided: a) Associated pack is not used, b) Opposite pack operates normally, c) Both engine bleed systems operates normally, d) Both outflow valves operate normally, e) Flight remains within 60 minutes of landing at a suitable airport, f) Appropriate performance adjustments are applied, and g) For the right CTC inoperative, electrical power on the right AC Transfer Bus is verified PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-61-01	Near Associated Pack Switch	1. ___ CTC INOP 2. DO NOT Use ___ Pack

(O) PROCEDURES

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position associated pack switch OFF.
2. Comply with applicable **(O)** PROCEDURES in MEL 21-51-01A for an inoperative pack.

(M) PROCEDURES

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

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

PRIOR TO EACH DEPARTURE - For right CTC inoperative, use the Electrical Maintenance page to verify the Right AC Transfer Bus is powered by confirming the R AC XFR bus status is ON.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
FLIGHT DECK ZONE TEMPERATURE CONTROL SYSTEM					
21-61-02A	Flight Deck Zone Temperature Control System	N	1	0	C (O) May be inoperative provided left trim air switch remains off.
21-61-02B	AUTO Mode	N	1	0	C (M) May be inoperative provided MAN control mode is verified to operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-61-02A	Air Conditioning Panel	Flight Deck Zone Temperature Control System INOP
21-61-02B	Air Conditioning Panel	Flight Deck Zone Temperature Control System AUTO Mode INOP

(O) PROCEDURES

21-61-02A

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance.
Refer to Vol 1, SP.2

1. The L TRIM AIR switch must remain off.
2. Flight deck temperatures may be colder than normal, or slow to respond to control position. To improve flight deck temperatures, position FLIGHT DECK TEMP control to AUTO Warm.
3. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

(M) PROCEDURES

21-61-02B

Verify manual temperature control operates normally:

1. Position Air Conditioning Panel (P5) FLIGHT DECK TEMP control to the MAN C position.
2. On the ECS Maintenance page confirm F/D TRIM VLV indicates approximately 0.0 or on the Air Synoptic confirm the F/D TRIM indicator is full cold (C).
3. Position Air Conditioning Panel (P5) FLIGHT DECK TEMP control to the MAN W position.
4. On the ECS Maintenance page confirm F/D TRIM VLV indicates approximately 1.0 or on the Air Synoptic confirm the F/D TRIM indicator is full warm (W).
5. Position Air Conditioning Panel (P5) FLIGHT DECK TEMP control to the desired setting.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-61-03A	Cabin Zone Temperature Control Systems	N	6	0	C (M) May be inoperative provided associated zone trim air modulation valve is deactivated closed.
21-61-03B	Cabin Zone Temperature Control Systems	N	6	0	C (O) May be inoperative with the associated zone trim air modulation valve in any position provided associated trim air switch remains off.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-61-03A	Air Conditioning Panel	___ Cabin Zone Temperature Control System(s) INOP
21-61-03B	Air Conditioning Panel	___ Cabin Zone Temperature Control System(s) INOP

(O) PROCEDURES

21-61-03B

Position associated TRIM AIR switch off:

- For left trim air switch off, flight deck temperatures may be colder than normal, or slow to respond to control position. To improve flight deck temperatures, position FLIGHT DECK TEMP Control to AUTO Warm.
- To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

(M) PROCEDURES

21-61-03A

To deactivate the zone A, C, or E trim air modulation valve(s) closed:

- Open the following circuit breakers on the P110 panel:

L CTC CHAN 1 (AC)	L CTC CHAN 1 (DC)
L CTC CHAN 2 (AC)	L CTC CHAN 2 (DC)

- Open the ECS access door 195EL.
- Disconnect, cap, and stow the electrical connector from the applicable zone trim air modulation valve.
- Turn the associated manual open/close knob until the valve position indicator is in the closed (CL) position.
- Close the ECS access door 195EL.
- Close the circuit breakers opened in Step 1. above.

CONTINUED NEXT PAGE

To deactivate the zone B, D, or F trim air modulation valve(s) closed:

1. Open the following circuit breakers on the P210 panel:

R CTC CHAN 1 (AC)	R CTC CHAN 1 (DC)
R CTC CHAN 2 (AC)	R CTC CHAN 2 (DC)

2. Open the ECS access door 196ER.
3. Disconnect, cap, and stow the electrical connector from the applicable zone trim air modulation valve.
4. Turn the manual open/close knob until the valve position indicator shows that the valve is in the closed (CL) position.
5. Close the ECS access door 196ER.
6. Close the circuit breakers opened in Step 1. above.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-85

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-61-04	Cabin Temperature Control	N	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-61-04	Air Conditioning Panel	Cabin Temperature Control INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-62-01A	Trim Air Control Systems	Y	2	1 C	(O) May be inoperative provided associated trim air switch remains off.
21-62-01B	Trim Air Control Systems	Y	2	0 C	(O) May be inoperative provided: a) Both trim air switches remain off, and b) Both packs operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-62-01A	Air Conditioning Panel	___ Trim Air Control System INOP
21-62-01B	Air Conditioning Panel	Both Trim Air Control Systems INOP

(O) PROCEDURES

NOTE : For a pack to be operating normally, certain items associated with that system must be operative.
[Refer to MEL 21-51-01A](#) for a listing of those items.

21-62-01A, 21-62-01B

1. Position associated TRIM AIR switch(s) off:
2. For left trim air switch off, flight deck temperature may be colder than normal, or slow to respond to control position. To improve flight deck temperature, position FLIGHT DECK TEMP control to AUTO.
3. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-62-02A	Trim Air Pressure Regulating / Shutoff Valves (PRSOVs)	N	2	1	C (O)(M) May be inoperative provided associated valve is locked CLOSED.
21-62-02B	Trim Air Pressure Regulating / Shutoff Valves (PRSOVs)	N	2	0	C (O)(M) May be inoperative provided: a) Both valves are locked CLOSED, and b) Both packs operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-62-02A	Air Conditioning Panel	___ Trim Air Pressure Regulating / Shutoff Valve (PRSOV) INOP
21-62-02B	Air Conditioning Panel	Both Trim Air Pressure Regulating / Shutoff Valves (PRSOVs) INOP

(O) PROCEDURES

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

21-62-02A, 21-62-02B

NOTE: The AIR synoptic may not agree with the position of the inoperative Trim Air PRSOVs.

1. Position associated TRIM AIR switch(s) off:
2. For left trim air switch off, flight deck temperature may be colder than normal, or slow to respond to control position. To improve flight deck temperature, position FLIGHT DECK TEMP control to AUTO Warm.
3. To minimize adjusting the cabin temperature selection, request flight attendants allow additional time for cabin temperature stabilization.

(M) PROCEDURES

21-62-02A, 21-62-02B

The inoperative trim air PRSOV(s) must be locked in the CLOSED position as follows:

1. Depressurize the pneumatic system.
2. Open the following circuit breakers for the left or right trim air PRSOV, as applicable:

Left PRSOV CBs (P110 panel)	Right PRSOV CBs (P210 panel)
L CTC CHAN 1 (AC)	R CTC CHAN 1 (AC)
L CTC CHAN 1 (DC)	R CTC CHAN 1 (DC)
L CTC CHAN 2 (AC)	R CTC CHAN 2 (AC)
L CTC CHAN 2 (DC)	R CTC CHAN 2 (DC)

3. Open ECS access door 195EL for access to the left PRSOV or ECS access door 196ER for access to the right PRSOV.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-88

4. Lock the inoperative trim air PRSOV(s) in the closed position.
 - a. Remove the locking plug from the trim air PRSOV actuator boss.
 - b. Turn the manual wrench until the manual lock indicator shows the valve is in the closed (CL) position.
 - c. Install the locking plug in the hole and tighten.

CAUTION: The valve and locking plug may be damaged if excessive torque is used. The 20 pound-feet placard on the valve pertains to manually opening/closing valve, not to the locking plug.

5. Close the ECS access door(s).
6. Close the circuit breakers opened in Step 2. on the previous page.

	B777 Minimum Equipment List	ATA 21 Air Conditioning	R14 05/09/16 Page 21-89

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
21-62-03A	TRIM AIR Switch Lights (FAULT Lights)	Y	2	0	C	
21-62-03B	TRIM AIR Switch Lights (ON Lights)	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-62-03A	Near Affected Trim Air Switch Light(s)	___ TRIM AIR Switch FAULT Light(s) INOP
21-62-03B	Near Affected Trim Air Switch Light(s)	___ TRIM AIR Switch ON Light(s) INOP

	B777 Minimum Equipment List	ATA 22 Autoflight	R14 05/09/16 Page 21-90

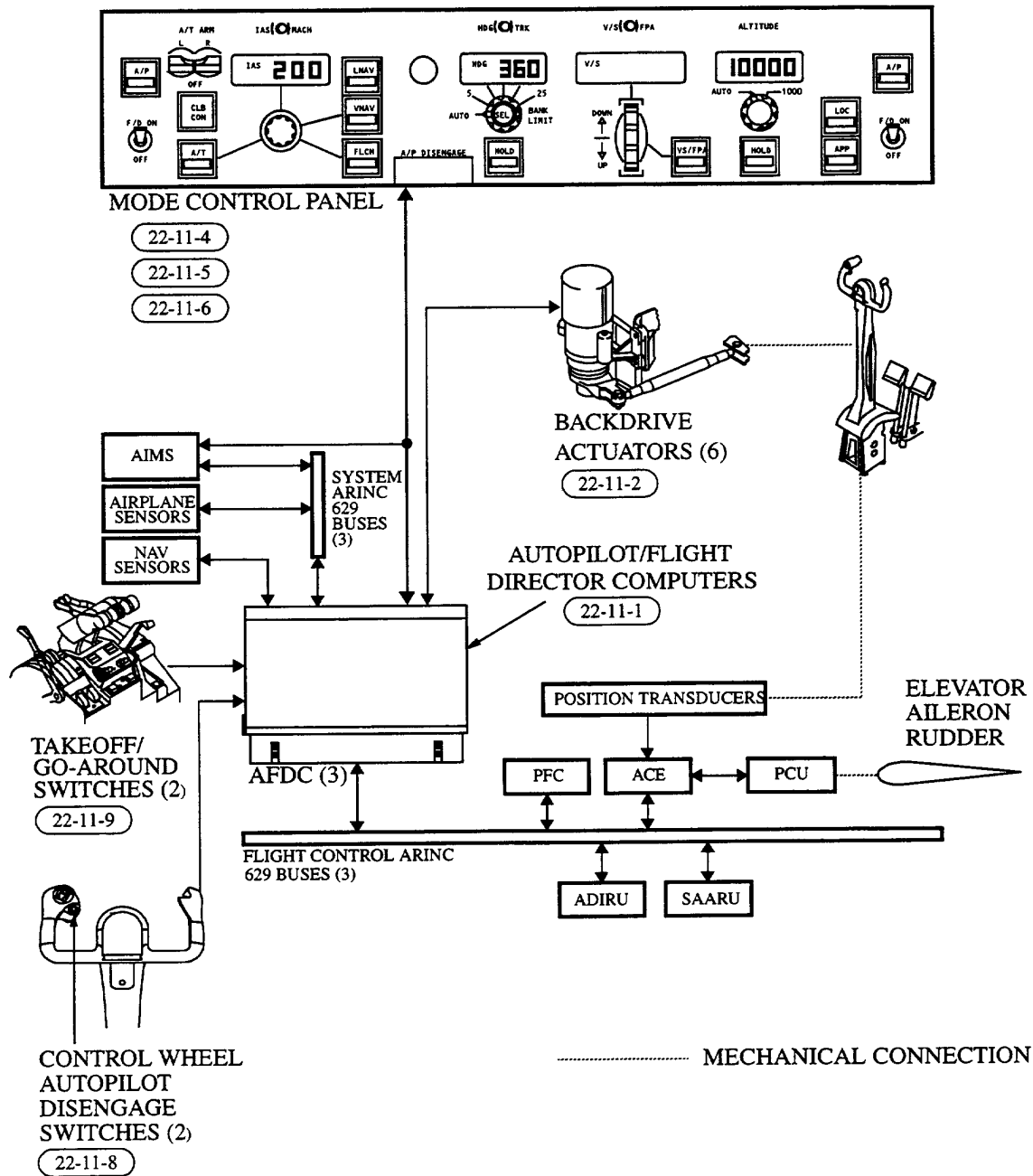
NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
21-73-01	Ozone Converters "DISP.APPR.REQ'D."	N	2	0	C May be inoperative provided it is verified that the flight can be conducted without exceeding maximum ozone concentration limits.

MEL ITEM	TAB LOCATION	PLACARD TEXT
21-73-01	Air Conditioning Panel	___ Ozone Converter(s) INOP

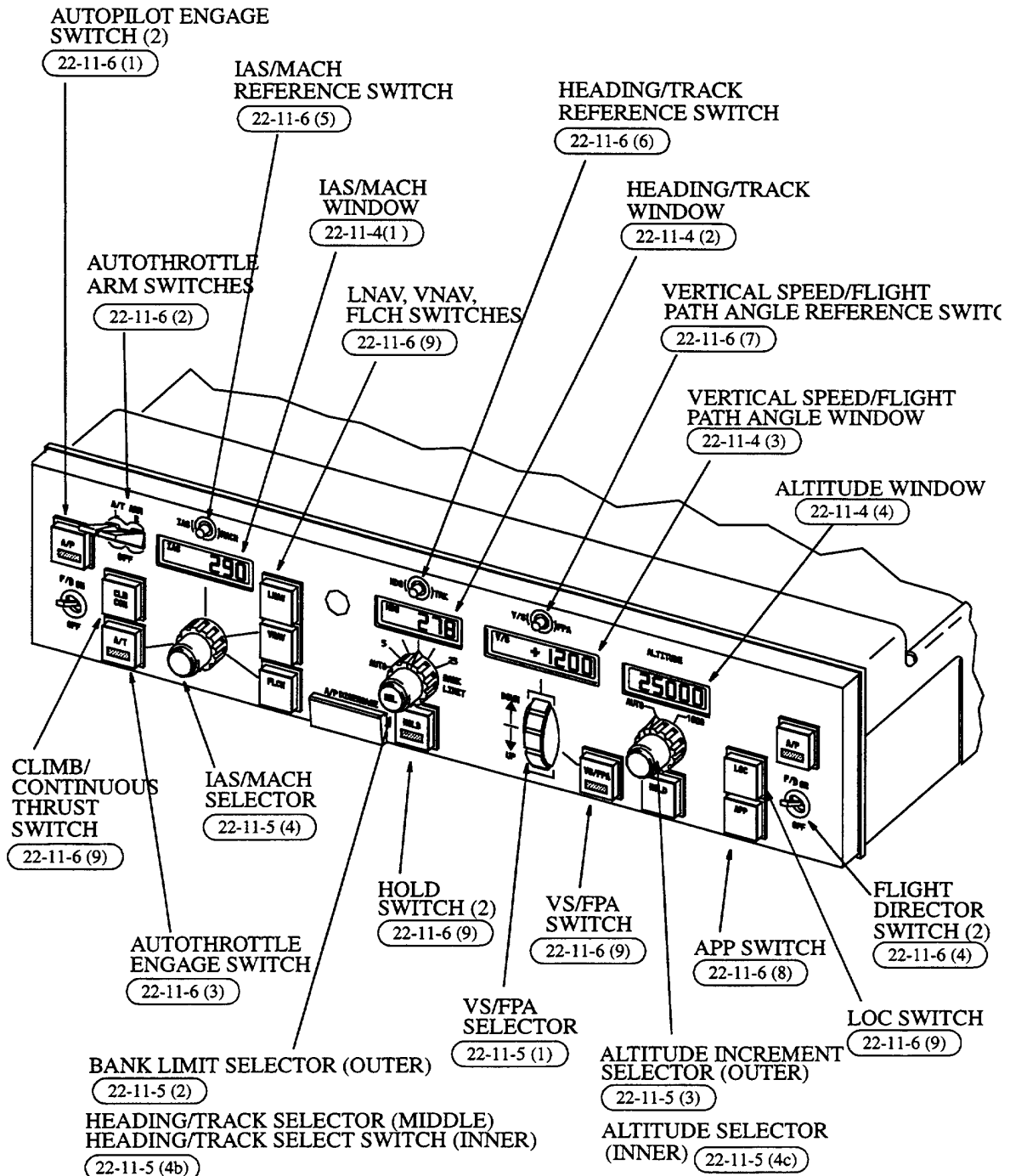
 DELTA	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-1

ATA 22 Contents

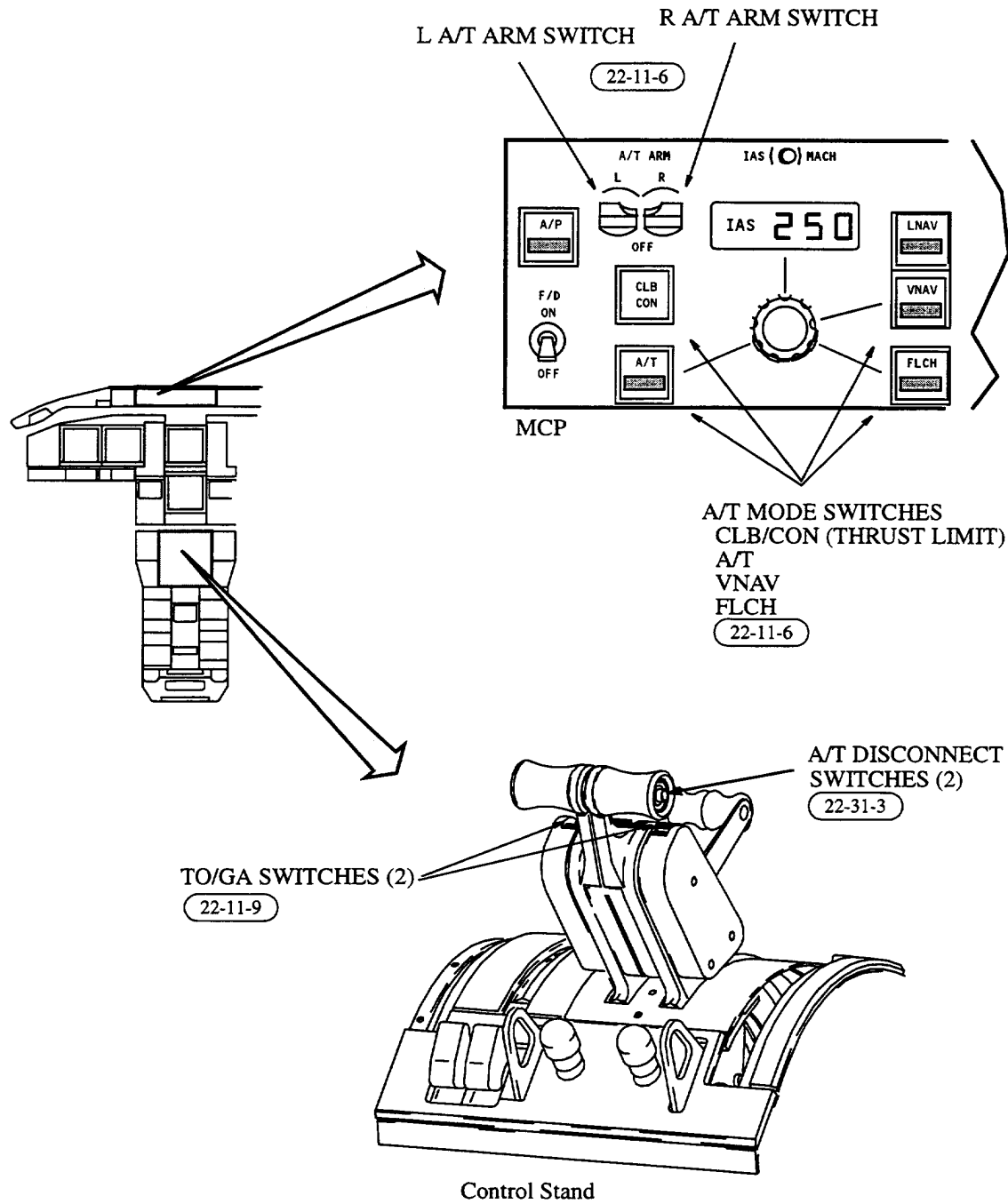
22-00-00L	LLM Autoland Status (Lower Landing Minimums)	22-6
22-11-01A	Autopilot Flight Director Computers (AFDC)	22-7
	AUTOPILOT FLIGHT DIRECTOR COMPUTERS (AFDC)	22-8
22-11-02A	Autopilot Backdrive Actuator Systems	22-10
22-11-03	Autopilot Mode Control Panel Lanes	22-12
	MODE CONTROL PANEL WINDOWS	22-13
22-11-04A	Airspeed (IAS-MACH)	22-13
22-11-04B	Heading (HDG-TRK)	22-13
22-11-04C	Vertical Speed (V/S-FPA)	22-13
22-11-04D	Altitude (ALTITUDE)	22-13
22-11-04E	Window Lighting	22-13
	MODE CONTROL PANEL SELECTORS	22-14
22-11-05A	V/S - FPA Selector (DOWN, UP)	22-14
22-11-05B	BANK LIMIT Selector (AUTO, 5, 10, 15, 20, 25)	22-14
22-11-05C	Altitude Increment Selector (AUTO, 1000)	22-14
22-11-05D	Selector Push Functions IAS - MACH	22-14
22-11-05E	Selector Push Functions HDG - TRK SEL	22-14
22-11-05F	Selector Push Functions ALTITUDE	22-14
	MODE CONTROL PANEL SWITCHES	22-15
22-11-06A	A/P Engage Switches	22-15
22-11-06C	Autothrottle Arm Switches (A/T ARM L, R) (RR engine, -200ER)	22-15
	MODE CONTROL PANEL SWITCHES	22-16
22-11-06E	Autothrottle Arm Switches (A/T ARM L, R) (GE engine, -200LR)	22-16
22-11-06G	A/T Engage Switch (RR engine, -200ER)	22-16
22-11-06H	A/T Engage Switch (GE engine, -200LR)	22-16
	MODE CONTROL PANEL SWITCHES	22-17
22-11-06I	F/D Switches	22-17
22-11-06J	IAS-MACH Reference Switch	22-17
22-11-06K	HDG-TRK Reference Switch	22-17
22-11-06L	V/S - FPA Reference Switch	22-17
22-11-06M	APP Switch	22-17
22-11-06N	CLB CON, LNAV, VNAV, FLCH, V/S - FPA, Heading/Track HOLD, Altitude HOLD, and LOC Switches	22-17
22-11-06O	Arm / Engage Lights	22-17
22-11-07A	Automatic Landing System (AUTOLAND)	22-20
22-11-07B	Triple Channel Autoland (LAND 3)	22-20
22-11-08A	Control Wheel Autopilot Disconnect Switches	22-21
22-11-09A	Takeoff / Go-Around (TO/GA) Switches	22-22
22-11-10A	Flight Director Systems	22-23
22-31-01A	Autothrottle System	22-24
22-31-02A	Autothrottle Servo Motors (RR engine, -200ER)	22-25
22-31-02C	Autothrottle Servo Motors (GE engine, -200LR)	22-25
22-31-03A	Autothrottle Disconnect Switches (RR engine, -200ER)	22-28
22-31-03C	Autothrottle Disconnect Switches (GE engine, -200LR)	22-28



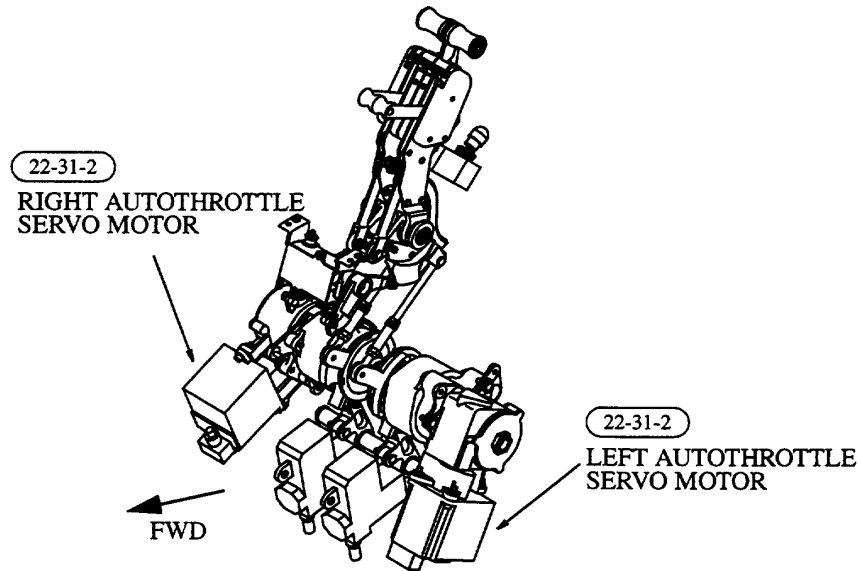
Autopilot Flight Director System Block Diagram



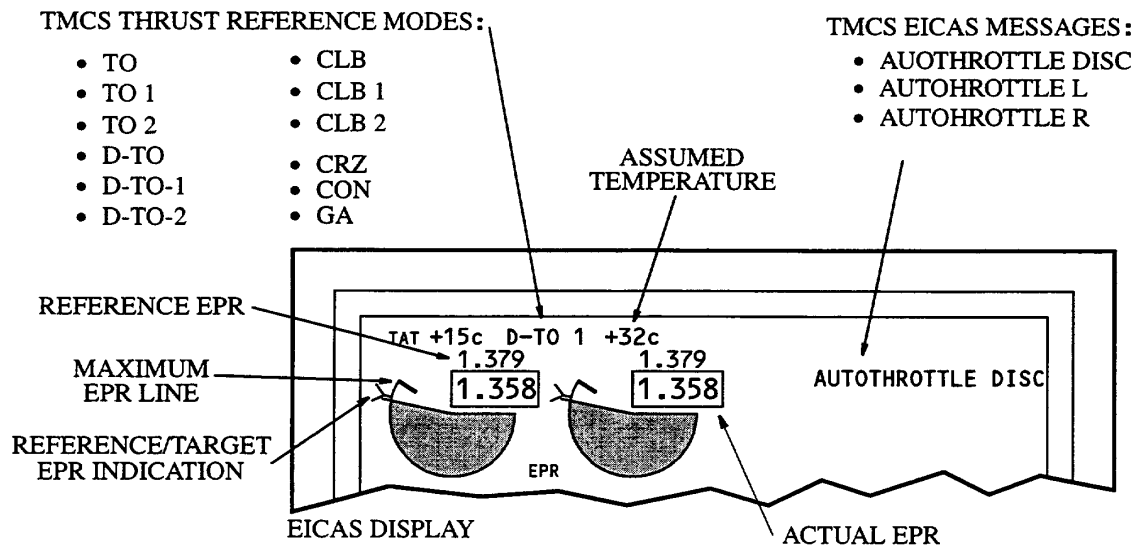
Mode Control Panel - Controls and Displays



Autothrottle Controls and Switches



Throttle Quadrant



22-31-1

Autothrottle/Thrust Management Computing System

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION		REMARKS OR EXCEPTIONS	
22-00-00L	LLM Autoland Status (Lower Landing Minimums) "DISP.APPR.REQ'D." Administrative Control Item	N	-	-
(M) Aircraft restricted from autopilot coupled Autoland due to chronic problem, or no Autoland in 30 days. a) This item number is only used for deferring the Autoland status of the aircraft and MCC authorization is required prior to its usage or removal. b) Practice Autolands are permitted if authorized by MCC.				

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-00-00L	Adjacent to each PFD	CAT II/III Not Authorized

(M) PROCEDURES

1. The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
2. The deferral code LLM must also be entered on the log page and the placard when restricting this item.
3. MCC authorization is required prior to its usage or removal.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-11-01A	Autopilot Flight Director Computers (AFDC) "DISP.APPR.REQ'D."	Y	3	2	C (O)(M) May be inoperative provided: a) Associated AFDC circuit breaker is deactivated, b) Associated AFDC backdrive actuator is deactivated, and c) Approach minimums do not require use of the associated autopilot. <u>CAT III</u> Not Authorized
22-11-01B	Autopilot Flight Director Computers (AFDC) "DISP.APPR.REQ'D."	Y	3	1	C (O)(M) Center and one other AFDC may be inoperative provided: a) Associated AFDC is deactivated, b) For left or right AFDC inoperative, associated AFDC backdrive actuator is deactivated, c) Radio Altimeter associated with the operative AFDC operates normally, d) Both Flap/Slat Control Lanes operate normally, e) All Warning Electronics System Channels operate normally, f) Approach minimums do not require use of the associated autopilots, and g) RNAV operations do not require use of the associated autopilots (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>CAT II/III</u> Not Authorized

CONTINUED NEXT PAGE

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
	Autopilot Flight Director Computers (AFDC) (CONTINUED)			
22-11-01C	Autopilot Flight Director Computers (AFDC) "DISP.APPR.REQ'D."	Y	3 0	B (O)(M) May be inoperative provided: a) All AFDCs are deactivated, b) Both AFDC backdrive actuators are deactivated, c) Approach minimums do not require use of the autopilots, d) Number of flight segments and segment duration is acceptable to flight crew, and e) RNAV operations do not require use of the autopilots (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>CAT I (Non-ILS)</u> Not Authorized <u>CAT II/III – RVSM - Polar Operations</u> Not Authorized NOTE 1: CAT I (ILS) is authorized if at least one Flight Director System is operative. NOTE 2: Autopilot required for Non-ILS approaches Theater Restrictions May Apply

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-01A	Autopilot MCP	___ AFDC INOP
22-11-01B	Autopilot MCP	___ AFDC(s) INOP
22-11-01C	Autopilot MCP	All AFDCs INOP

(O) PROCEDURES

22-11-01A

- For the left or right AFDC inoperative, confirm the autopilot system is operational by engaging and disengaging the autopilot on the ground with flaps UP before dispatch.
- The autoland system is not fail-operational and the NO LAND 3 advisory message will be displayed.

22-11-01B

- Confirm the autopilot system is operational by engaging and disengaging the autopilot on the ground with flaps UP before dispatch.
- The autoland system is inoperative and the NO AUTOLAND advisory message will be displayed. Autopilot may be engaged, however only one flight director is available.

CONTINUED NEXT PAGE

22-11-01C

1. Autopilot cannot be engaged, flight director is not available, and the autoland system is inoperative. No advisory messages will be displayed.
2. The selected speed and the speed bug will not be available on the PFD.
3. The autothrottle is available. However, the autothrottle engaged light will not be illuminated when the autothrottle is engaged.

(M) PROCEDURES

22-11-01A, 22-11-01B, 22-11-01C

Each AFDC (L, C, and R) is identical and interchangeable. The inoperative AFDC(s) must be deactivated by opening the associated circuit breaker. If the left or right AFDC is inoperative, its associated backdrive function must also be deactivated. However, the center AFDC does not have a backdrive function or backdrive circuit breaker. For dispatch with only one AFDC inoperative it is recommended that the failed AFDC be moved to the center position. In this configuration, both backdrive functions remain operational.

Deactivate the inoperative AFDC(s) and associated backdrive actuator(s).

1. Pull and secure the following P11 panel and circuit breakers for the inoperative AFDC(s):

Left AFDC	Center AFDC	Right AFDC
AFDC L	AFDC C	AFDC R
AFDC BACK DRIVE L		AFDC BACK DRIVE R

2. For all three AFDCs inoperative, set the MCP IAS-MACH, HDG-TRK and V/S-FPA windows to their default states (IAS, HDG and V/S) by simultaneously cycling the P11 panel MCP L and MCP R circuit breakers.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-11-02A	Autopilot Backdrive Actuator Systems "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) May be inoperative provided: a) Associated AFDC backdrive actuator is deactivated, b) Opposite AFDC operates normally, c) Approach minimums do not require use of the associated autopilot, and d) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>CAT III</u> Not Authorized
22-11-02B	Autopilot Backdrive Actuator Systems "DISP.APPR.REQ'D."	Y	2	0	B (O)(M) May be inoperative provided: a) Both AFDC backdrive actuators are deactivated, b) Approach minimums do not require use of the autopilots, c) Number of flight segments and segment duration is acceptable to flight crew, and d) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), <u>CAT I</u> Not Authorized <u>CAT II/III – RVSM - Polar Operations</u> Not Authorized NOTE: Autopilot required for Non-ILS approaches. Theater Restrictions May Apply

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-02A	Autopilot MCP	___ A/P Backdrive Actuator System INOP
22-11-02B	Autopilot MCP	Both A/P Backdrive Actuator Systems INOP

(O) PROCEDURES

22-11-02A

- Confirm that the autopilot system is operational by engaging and disengaging the autopilot on the ground with flaps UP before dispatch.
- Autoland system is not fail-operational and the advisory message NO LAND 3 will be displayed.

22-11-02B

- Autopilot cannot be engaged, but flight director is available.
- Autoland system is inoperative and the NO AUTOLAND advisory message will be displayed.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 22 Autoflight	R9 07/07/11 Page 22-11

(M) PROCEDURES

22-11-02A, 22-11-02B

Pull and secure the associated AFDC backdrive actuator circuit breaker(s) located on the P11 panel:

1. For the left backdrive actuator system inoperative, AFDC BACK DRIVE L.
2. For the right backdrive actuator system inoperative, AFDC BACK DRIVE R.

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-12

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
22-11-03	Autopilot Mode Control Panel Lanes	Y	2	1	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-03	Autopilot MCP	___ A/P Mode Control Panel Lane INOP

OPERATIONS NOTE:

If the inoperative mode control panel (MCP) lane circuit breaker is open, the associated autothrottle will be inoperative. The associated EICAS status message (AUTOTHROTTLE SERVO L or R) and advisory message (AUTOTHROTTLE L or R) will be displayed, which will require dispatch per [MEL 22-31-02](#).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION	MODE CONTROL PANEL WINDOWS		REMARKS OR EXCEPTIONS		
22-11-04A	Airspeed (IAS-MACH)	Y	1	0	C	May be inoperative provided selected airspeed indications on both PFDs operate normally.
22-11-04B	Heading (HDG-TRK)	Y	1	0	C	May be inoperative provided selected heading indications on both PFDs operate normally.
22-11-04C	Vertical Speed (V/S-FPA)	Y	1	0	C	May be inoperative provided selected vertical speed indications on both PFDs operate normally.
22-11-04D	Altitude (ALTITUDE)	Y	1	0	C	May be inoperative provided selected altitude indications on both PFDs operate normally.
22-11-04E	Window Lighting “Contact MCC”	Y	1	0	B	May be inoperative provided: a) Selected airspeed indications on both PFDs operate normally, b) Selected heading indications on both PFDs operate normally, c) Selected vertical speed indications on both PFDs operate normally, and d) Selected altitude indications on both PFDs operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-04A	Autopilot MCP	A/P Airspeed Window INOP
22-11-04B	Autopilot MCP	A/P Heading Window INOP
22-11-04C	Autopilot MCP	A/P Vertical Speed Window INOP
22-11-04D	Autopilot MCP	A/P Altitude Window INOP
22-11-04E	Autopilot MCP	A/P Window Lighting INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
	MODE CONTROL PANEL SELECTORS					
22-11-05A	V/S - FPA Selector (DOWN, UP) “DISP.APPR.REQ’D.”	Y	1	0	C	<u>Non-Precision Approaches (V/S - FPA Method)</u> NOT Authorized with V/S - FPA Selector Inoperative
22-11-05B	BANK LIMIT Selector (AUTO, 5, 10, 15, 20, 25)	Y	1	0	C	
22-11-05C	Altitude Increment Selector (AUTO, 1000)	Y	1	0	C	(O) May be inoperative provided selector is verified to be in AUTO position.
22-11-05D	Selector Push Functions IAS - MACH	Y	1	0	C	
22-11-05E	Selector Push Functions HDG - TRK SEL	Y	1	0	C	
22-11-05F	Selector Push Functions ALTITUDE	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-05A	Autopilot MCP	A/P V/S Selector INOP
22-11-05B	Autopilot MCP	A/P BANK LIMIT Selector INOP
22-11-05C	Autopilot MCP	A/P Altitude Selector INOP
22-11-05D	Autopilot MCP	A/P IAS - MACH Selector Push Function INOP
22-11-05E	Autopilot MCP	A/P HDG - TRK Selector Push Function INOP
22-11-05F	Autopilot MCP	A/P ALTITUDE Selector Push Function INOP

(O) PROCEDURES

22-11-05C

For dispatch with an inoperative Altitude Increment Selector, the selector must be verified to operate in the AUTO position.

1. Turn the altitude selector in either direction.
2. Observe the altitude displayed in the altitude window. If altitude changes in increments of 100 feet, the AUTO position is operating normally.

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-15

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
MODE CONTROL PANEL SWITCHES					
22-11-06A	A/P Engage Switches "DISP.APPR.REQ'D."	Y	2	1	C RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements).
22-11-06B	A/P Engage Switches "DISP.APPR.REQ'D."	Y	2	0	B (O) May be inoperative provided: a) Approach minimums do not require use of the autopilots, b) Number of flight segments and segment duration is acceptable to flight crew, and c) RNAV operations do not require autopilot use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>CAT I (Non-ILS)</u> Not Authorized <u>CAT II/III – RVSM - Polar Operations</u> Not Authorized NOTE: Autopilot required for Non-ILS approaches. Theater Restrictions May Apply
22-11-06C	Autothrottle Arm Switches (A/T ARM L, R) (RR engine, -200ER) "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) One may be inoperative provided: a) Associated servo motor is deactivated, b) Approach minimums do not require its use, c) Both thrust levers are manually set for takeoff and go-around thrust, and d) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-11-06D	Autothrottle Arm Switches (A/T ARM L, R) (RR engine, -200ER) "DISP.APPR.REQ'D."	Y	2	0	C May be inoperative provided: a) Approach minimums do not require autothrottle use, b) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and c) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
MODE CONTROL PANEL SWITCHES (CONTINUED)					
22-11-06E	Autothrottle Arm Switches (A/T ARM L, R) (GE engine, -200LR) "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) One may be inoperative provided: a) Associated servo motor is deactivated, b) Approach minimums do not require its use, c) EEC normal mode operates normally, d) Both thrust levers are manually set for takeoff and go-around thrust, and e) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-11-06F	Autothrottle Arm Switches (A/T ARM L, R) (GE engine, -200LR) "DISP.APPR.REQ'D."	Y	2	0	C May be inoperative provided: a) EEC normal mode operates normally, b) Approach minimums do not require autothrottle use, c) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and d) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-11-06G	A/T Engage Switch (RR engine, -200ER) "DISP.APPR.REQ'D."	Y	1	0	C May be inoperative provided: a) Approach minimums do not require autothrottle use, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-11-06H	A/T Engage Switch (GE engine, -200LR) "DISP.APPR.REQ'D."	Y	1	0	C May be inoperative provided: a) EEC normal mode operates normally, b) Approach minimums do not require autothrottle use, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
MODE CONTROL PANEL SWITCHES (CONTINUED)					
22-11-06I	F/D Switches “DISP.APPR.REQ'D.”	Y	2	0	C May be inoperative provided: a) Approach minimums do not require flight director use, and b) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). CAT II/III Not Authorized NOTE: CAT I (ILS) requires one operative F/D switch.
22-11-06J	IAS-MACH Reference Switch	Y	1	0	C (M) May be inoperative provided IAS is displayed in associated window.
22-11-06K	HDG-TRK Reference Switch	Y	1	0	C (M) May be inoperative provided HDG is displayed in associated window.
22-11-06L	V/S - FPA Reference Switch	Y	1	0	C (M) May be inoperative.
22-11-06M	APP Switch “DISP.APPR.REQ'D.”	Y	1	0	C May be inoperative provided approach minimums do not require use of the autopilot flight director system approach mode. CAT I (ILS) Not Authorized CAT II/III Not Authorized
22-11-06N	CLB CON, LNAV, VNAV, FLCH, V/S - FPA, Heading/Track HOLD, Altitude HOLD, and LOC Switches “DISP.APPR.REQ'D.”	Y	8	0	C (O) May be inoperative provided: a) Enroute operations do not require their use, and b) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). RVSM Operations See (O) PROCEDURES for this item. Non-Precision Approaches (V/S - FPA Method) Not Authorized with V/S - FPA Mode or Switch Inoperative. Non-Precision Approaches (VNAV Method) Not Authorized with VNAV Mode or Switch Inoperative.
22-11-06O	Arm / Engage Lights	Y	11	0	C May be inoperative provided the associated mode indications on both PFDs operate normally.

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-06A	Autopilot MCP	___ A/P Engage Switch INOP
22-11-06B	Autopilot MCP	Both A/P Engage Switches INOP
22-11-06C	Autopilot MCP	___ A/T ARM Switch INOP
22-11-06D	Autopilot MCP	Both A/T ARM Switches INOP
22-11-06E	Autopilot MCP	___ A/T ARM Switch INOP
22-11-06F	Autopilot MCP	Both A/T ARM Switches INOP
22-11-06G	Autopilot MCP	A/T Engage Switch INOP
22-11-06H	Autopilot MCP	A/T Engage Switch INOP
22-11-06I	Autopilot MCP	___ F/D Switch(s) INOP
22-11-06J	Autopilot MCP	A/P IAS – MACH Reference Switch INOP
22-11-06K	Autopilot MCP	A/P HDG – TRK Reference Switch INOP
22-11-06L	Autopilot MCP	A/P V/S – FPA Reference Switch INOP
22-11-06M	Autopilot MCP	A/P APP Switch INOP
22-11-06N	Autopilot MCP	A/P ___ Mode Switch(es) INOP
22-11-06O	Autopilot MCP	___ A/P Arm / Engage Light(s) INOP

(O) PROCEDURES

22-11-06B

Autopilot cannot be engaged, but flight director is available.

22-11-06C, 22-11-06E

1. The AUTOTHROTTLE L or R advisory message will be displayed.
2. The autothrottle cannot be engaged on the ground.
3. Set both thrust levers manually for takeoff and go-around.
4. The flight must remain within 180 minutes of landing at a suitable airport.
5. For an inoperative switch failed to the armed state, the EPR/N1 trim function will operate normally, provided the operative autothrottle arm switch is positioned to A/T ARM.

NOTE: The autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

6. For an inoperative switch failed to the off state, autothrottle functionality is available in flight for the operative autothrottle.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-19

22-11-06N

Any one of the following autopilot pitch modes will provide acceptable altitude hold capability for RVSM Operations: Altitude Hold (ALT), Vertical Speed (V/S) or Flight Path Angle (FPA) with 000 selected, Vertical Navigation (VNAV) with FMC flight plan, or VNAV with FMC flight plan combined with altitude intervention.

1. If HDG HOLD mode is inoperative, use HDG SEL.
2. To conduct enroute LNAV Operations with LNAV Mode inoperative:
 - a. Use HDG SEL mode to navigate waypoint-to-waypoint.
 - b. Lateral deviation should be monitored on at least one ND, correlating track information with the magenta route line.
 - c. One pilot should monitor FMC PROGRESS PAGE 2 as necessary to crosscheck the lateral deviation.
 - d. Published maximum lateral deviation tolerances must not be exceeded during flight.

(M) PROCEDURES

22-11-06C, 22-11-06E

Deactivate the associated autothrottle servo motor:

1. For the left A/T ARM switch inoperative, pull and secure P11 panel A/T SERVO L circuit breaker.
2. For the right A/T ARM switch inoperative, pull and secure P11 panel A/T SERVO R circuit breaker.

22-11-06J

For MACH displayed in the associated MCP window, simultaneously open and close P11 panel MCP L and MCP R circuit breakers to cause IAS to be displayed.

22-11-06K

For TRK displayed in the associated MCP window, simultaneously open and close P11 panel MCP L and MCP R circuit breakers to cause HDG to be displayed.

22-11-06L

For FPA displayed in the associated MCP window, simultaneously open and close P11 panel MCP L and MCP R circuit breakers to cause V/S to be displayed.

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-20

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-11-07A	Automatic Landing System (AUTOLAND) "DISP.APPR.REQ'D."	Y	1	0	C May be inoperative provided approach minimums do not require its use. <u>CAT II/III</u> Not Authorized
22-11-07B	Triple Channel Autoland (LAND 3) "DISP.APPR.REQ'D."	Y	1	0	C May be inoperative provided approach minimums do not require its use. <u>CAT III</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-07A	Autopilot MCP	AUTOLAND System INOP
22-11-07B	Autopilot MCP	LAND 3 AUTOLAND INOP

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-21

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-11-08A	Control Wheel Autopilot Disconnect Switches "DISP.APPR.REQ'D."	Y	2	1	C May be inoperative provided: a) Autopilot is not used below 1,500 feet AGL, and b) Approach minimums do not require the use of autopilot. <u>CAT II/III</u> Not Authorized
22-11-08B	Control Wheel Autopilot Disconnect Switches "DISP.APPR.REQ'D."	Y	2	0	B May be inoperative provided: a) Autopilot is not used, b) Approach minimums do not require use of the autopilot, c) Number of flight segments and segment duration is acceptable to flight crew, and d) RNAV operations do not require use of the autopilot. <u>CAT I</u> Not Authorized <u>CAT II/III</u> Not Authorized <u>Theater Restrictions May Apply</u>

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-08A	Autopilot MCP	___ Control Wheel Autopilot Disconnect Switch INOP
22-11-08B	Autopilot MCP	1. Both Control Wheel Autopilot Disconnect Switch INOP 2. Do not use Autopilot.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-11-09A	Takeoff / Go-Around (TO/GA) Switches "DISP.APPR.REQ'D."	Y	2	1 C	(O) One may be inoperative provided approach minimums do not require its use. CAT III Not Authorized
22-11-09B	Takeoff / Go-Around (TO/GA) Switches "DISP.APPR.REQ'D."	Y	2	0 C	(O) May be inoperative provided: a) Both thrust levers are operated manually for takeoff and go-around, b) Autopilot and flight director are not used below 500 feet AGL or MDA, whichever is higher, c) Approach minimums do not require use of TO/GA switches, and d) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). NOTE: Flight director go-around and windshear guidance are not available with both TO/GA switches inoperative. CAT II/III Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-09A	Autopilot MCP	___ TO/GA Switch INOP
22-11-09B	Autopilot MCP	Both TO/GA Switches INOP

(O) PROCEDURES

22-11-09A

The autoland system is not fail-operational. The NO LAND 3 advisory message may be displayed.

22-11-09B

1. The autoland system is not fail-operational. The NO LAND 3 advisory message will be displayed.
2. Flight director go-around and windshear guidance are not available with both TO/GA switches inoperative.

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-23

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-11-10A	Flight Director Systems "DISP.APPR.REQ'D."	Y	2	1	C May be inoperative provided: a) Takeoff and approach minimums do not require its use, and b) RNAV operations do not require use of flight director (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>CAT II/III</u> Not Authorized <u>TAKEOFF</u> Captain's Flight Director must be operative with visibility less than 1600 RVR (1/4 mile).
22-11-10B	Flight Director Systems "DISP.APPR.REQ'D."	Y	2	0	C May be inoperative provided: a) For takeoff, visibility at the departure runway is not less than 1600 RVR (1/4 mile), b) Approach minimums do not require their use, and c) RNAV operations do not require use of flight directors (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>CAT II/III</u> Not Authorized NOTE: CAT I (ILS) is authorized if at least one Autopilot Flight Director Computer is operative.

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-11-10A	Autopilot MCP	___ Flight Director System INOP
22-11-10B	Autopilot MCP	___ Flight Director System(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-31-01A	Autothrottle System (RR engine, -200ER) "DISP.APPR.REQ'D."	Y	1	0	C
					May be inoperative provided: a) Approach minimums do not require its use, b) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and c) Flight remains within 180 minutes of landing at a suitable airport. NOTE: Any autothrottle mode which operates normally may be used. <u>CAT II/III - Polar Operations</u> Not Authorized
22-31-01B	Autothrottle System (GE engine, -200LR) "DISP.APPR.REQ'D."	Y	1	0	C
					May be inoperative provided: a) EEC normal mode operates normally, b) Approach minimums do not require its use, c) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and d) Flight remains within 180 minutes of landing at a suitable airport. NOTE: Any autothrottle mode which operates normally may be used. <u>CAT II/III - Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-31-01A	Autopilot MCP	Autothrottle System INOP
22-31-01B	Autopilot MCP	Autothrottle System INOP

OPERATIONS NOTE:

Autothrottle commands are provided by the Thrust Management Computing Function (TMCF). TMCF also provides EICAS indications of EPR or N1 reference / target values, thrust mode, and selected temperature. In some failure modes of the autothrottle system, these EICAS indications will also be inoperative.

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-25

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-31-02A	Autothrottle Servo Motors (RR engine, -200ER) "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) May be inoperative provided: a) Associated servo motor is deactivated, b) Both thrust levers are manually set for takeoff and go-around thrust, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-31-02B	Autothrottle Servo Motors (RR engine, -200ER) "DISP.APPR.REQ'D."	Y	2	0	C (O)(M) May be inoperative provided: a) Both servo motors are deactivated, b) Approach minimums do not require use of the autothrottles, c) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and d) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-31-02C	Autothrottle Servo Motors (GE engine, -200LR) "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) May be inoperative provided: a) EEC normal mode operates normally, b) Associated servo motor is deactivated, c) Both thrust levers are manually set for takeoff and go-around thrust, and d) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-31-02D	Autothrottle Servo Motors (GE engine, -200LR) "DISP.APPR.REQ'D."	Y	2	0	C (O)(M) May be inoperative provided: a) EEC normal mode operates normally, b) Both servo motors are deactivated, c) Approach minimums do not require use of the autothrottles, d) RNAV operations do not require their use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and e) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-31-02A	Autopilot MCP	___ Autothrottle Servo Motor INOP
22-31-02B	Autopilot MCP	Both Autothrottle Servo Motors INOP
22-31-02C	Autopilot MCP	___ Autothrottle Servo Motor INOP
22-31-02D	Autopilot MCP	Both Autothrottle Servo Motors INOP

(O) PROCEDURES

22-31-02A

NOTE 1: The AUTOTHROTTLE L or R advisory message will be displayed.

NOTE 2: The autothrottle cannot be engaged on the ground.

NOTE 3: The EPR trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.

NOTE 4: For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff:
 - a) Set both autothrottle switches to A/T ARM.
 - b) Set both thrust levers manually.
3. After takeoff, if desired set the deactivated autothrottle servo motor A/T ARM switch OFF to restore functionality of the operative autothrottle servov motor.
4. For go-around, set both thrust levers manually.

22-31-02B

NOTE 1: The AUTOTHROTTLE L or R advisory message will be displayed.

NOTE 2: The EPR trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.

NOTE 3: For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff, set both autothrottle switches to A/T ARM.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 22 Autoflight	R13 08/29/14 Page 22-27

22-31-02C

NOTE 1: The AUTOTHROTTLE L or R advisory message will be displayed.

NOTE 2: The autothrottle cannot be engaged on the ground.

NOTE 3: The N1 trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.

NOTE 4: For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff:
 - a) Set both autothrottle switches to A/T ARM.
 - b) Set both thrust levers manually.
3. After takeoff, if desired set the deactivated autothrottle servo motor A/T ARM switch OFF to restore functionality of the operative autothrottle servov motor.
4. For go-around, set both thrust levers manually.

22-31-02D

NOTE 1: The AUTOTHROTTLE L or R advisory message will be displayed.

NOTE 2: The N1 trim function of the EEC will operate normally, provided both autothrottle arm switches are positioned to A/T ARM.

NOTE 3: For both autothrottle arm switches positioned to A/T ARM, the autothrottle disconnect caution will be annunciated if the flight crew selects FLCH, VNAV, or TO/GA. Pressing the autothrottle disconnect switch will clear the caution.

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. For takeoff, set both autothrottle switches to A/T ARM.

(M) PROCEDURES

22-31-02A, 22-31-02B, 22-31-02C, 22-31-02D

Deactivate the inoperative autothrottle servo motor(s).

1. For the left servo motor inoperative, pull and secure the P11 panel A/T SERVO L circuit breaker.
2. For the right servo motor inoperative, pull and secure the P11 panel A/T SERVO R circuit breaker.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
22-31-03A	Autothrottle Disconnect Switches (RR engine, -200ER)	Y	2	1 C	May be inoperative provided both A/T ARM switches operate normally.
22-31-03B	Autothrottle Disconnect Switches (RR engine, -200ER) "DISP.APPR.REQ'D."	Y	2	0 C	May be inoperative provided: a) Autothrottles are not armed, b) Approach minimums do not require use of autothrottles, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized
22-31-03C	Autothrottle Disconnect Switches (GE engine, -200LR)	Y	2	1 C	May be inoperative provided both A/T ARM switches operate normally.
22-31-03D	Autothrottle Disconnect Switches (GE engine, -200LR) "DISP.APPR.REQ'D."	Y	2	0 C	May be inoperative provided: a) EEC normal mode operates normally b) Autothrottles are not armed, c) Approach minimums do not require use of autothrottles, and d) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
22-31-03A	Autopilot MCP	___ Autothrottle Disconnect Switch INOP
22-31-03B	Autopilot MCP	Both Autothrottle Disconnect Switches INOP
22-31-03C	Autopilot MCP	___ Autothrottle Disconnect Switch INOP
22-31-03D	Autopilot MCP	Both Autothrottle Disconnect Switches INOP

ATA 23 Contents

23-00-99	Long Range Communication System.....	23-3
23-11-01A	High Frequency (HF) Communication Systems.....	23-4
23-12-01A	VHF Communications Systems	23-6
23-12-01B	VHF Data Link.....	23-6
23-15-01A	Satellite Communication (SATCOM) Systems.....	23-7
23-15-01B	SATCOM Voice Systems	23-7
23-15-01C	SATCOM Data Link.....	23-7
23-21-01	Selective Call System (SELCAL)	23-9
23-24-01	Radio Tuning Panels	23-10
23-24-02A	Fixed Emergency Locator Transmitter (ELT) (-200LR).....	23-11
23-27-01A	Data Communication Management System	23-12
23-27-01C	Automatic Dependent Surveillance – Contract (ADS-C) Function.....	23-12
23-27-02A	Flight Deck Communications System (ACARS Data Link)	23-14
	PASSENGER ADDRESS SYSTEM	23-15
23-31-01A	Passenger Address System.....	23-15
23-31-01B	Passenger Address Controller Modes	23-15
23-31-01C	Lavatory Speakers	23-15
23-31-01D	Cabin Speakers.....	23-15
	PASSENGER ADDRESS SYSTEM	23-16
23-31-01G	Prerecorded Passenger Announcement System.....	23-16
23-37-01A	In-flight Entertainment (IFE) System (system deactivated).....	23-18
23-39-01	Cabin Area Control Panels (CACP) / Cabin System Control Panels (CSCP)	23-20
	SERVICE INTERPHONE SYSTEM	23-21
23-41-01A	Nose Gear Jack.....	23-21
23-41-01C	Other Than Nose Gear Jacks	23-21
	CREWMEMBER INTERPHONE SYSTEMS	23-22
23-42-01A	Flight Deck to Cabin / Cabin to Flight Deck Functions.....	23-22
23-42-01B	Cabin to Cabin Functions	23-22
23-42-01C	Flight Deck / Cabin to Crew Rest, Crew Rest to Flight Deck / Cabin Functions.....	23-22
23-42-01D	Cabin Interphone Controller Modes	23-22
	CABIN INTERPHONE ALERTING SYSTEMS.....	23-24
23-42-02A	Flight Deck Call System (Lights and EICAS Messages).....	23-24
23-42-02B	Flight Attendant Call Lights	23-24
23-42-02C	Flight Attendant Chime.....	23-24
23-42-02D	Crew Rest Call Lights / Chimes Systems.....	23-24
	CABIN INTERPHONE HANDSET SYSTEMS.....	23-25
23-42-03A	Flight Deck Handset	23-25
23-42-03B	Cabin Attendant Handset	23-25
23-42-03C	Flight Crew Rest Area (OFCR) Handsets	23-25
23-42-03D	Flight Crew Rest Area (OFCR) Handsets	23-25
	CABIN INTERPHONE HANDSET SYSTEMS.....	23-26
23-42-03E	Flight Attendant Rest Area (OFAR) Handsets	23-26
23-42-03F	Flight Attendant Rest Area (OFAR) Handsets	23-26
23-43-01	Ground Crew Call System.....	23-28
	FLIGHT INTERPHONE SYSTEM	23-29
23-51-01A	Nose Gear Jack.....	23-29

 DELTA	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-2

23-51-01C	Main Equipment Center (MEC) Jacks.....	23-29
23-51-02	Flight Deck Speakers	23-30
23-51-03	Flight Deck Hand Microphones	23-31
	FLIGHT DECK HEADSETS / HEADPHONES	23-32
23-51-04A	Flight Deck Headset / Headphones	23-32
23-51-04B	Headset Boom Microphones.....	23-32
23-51-04D	Headset Earphones / Headphones.....	23-32
	AUDIO CONTROL PANELS	23-33
23-51-05A	Captain's Audio Control Panel	23-33
23-51-05B	First Observer's Audio Control Panel.....	23-33
23-51-05C	Second Observer's Audio Control Panel	23-33
23-51-05D	Second Observer's Audio Control Panel (MIC, CALL, Receiver Lights)	23-33
	MICROPHONE (MIC) / INTERPHONE SWITCHES	23-34
23-51-06A	Control Wheel MIC / Interphone Switches	23-34
23-51-06B	Flight Crew Audio Control Panel MIC / Interphone Switches	23-34
23-51-06C	Glareshield MIC / Interphone Switches.....	23-34
23-71-01	Cockpit Voice Recorder (CVR) System	23-36
23-93-01	Overhead Panel Bus Controllers (OPBC).....	23-37
23-93-02A	Overhead Panel Interface Cards (OPIC)	23-40
23-93-03	Panel Data Concentrator Units (PDCU).....	23-41

NUMBER INSTALLED		NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD		REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION		REMARKS OR EXCEPTIONS
23-00-99	Long Range Communication System "DISP.APPR.REQ'D" Administrative Control Item	N	(M) Aircraft restricted due to HF history. WATRS routes not authorized. MCC authorization is required prior to its usage or removal.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-00-99	Log Book	HF Restricted

(M) PROCEDURE

Use this item to restrict aircraft due to HF equipment that has been placed on MEL three (3) or more times in the last thirty (30) days.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-11-01A	High Frequency (HF) Communication Systems "DISP.APPR.REQ'D."	Y	2	0	C (O)(M) One or both may be inoperative provided ATC and Company communication requirements are met. NOTE: Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for HF requirements. Theater Restrictions May Apply
23-11-01B	High Frequency (HF) Communication Systems "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) May be inoperative while conducting operations that require two Long Range Communication Systems (LRCS) provided: a) SATCOM voice or Data Link operates normally, b) SATCOM coverage is available over the intended route of flight, and c) If SATCOM voice is to be used over the intended route of flight, SATCOM voice short codes (INMARSAT) or direct dial commercial numbers (IRIDIUM) must be available. If not available, prior coordination with appropriate ATS (FIR) facility is required, and d) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for HF requirements. NOTE: SATCOM voice is to be used only as a backup to normal HF communications unless otherwise authorized by the appropriate ATS facilities. <u>Polar Operations</u> Not Authorized Theater Restrictions May Apply

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-11-01A	Captain's Radio Tuning Panel	___ HF Radio(s) INOP
23-11-01B	Captain's Radio Tuning Panel	___ HF Radio INOP

MAINTENANCE NOTE:

If desired, the inoperative HF radio can be deactivated by pulling and securing the associated P11 panel L HF COMM, or R HF COMM circuit breaker.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-5

(O) PROCEDURES

23-11-01A

Extended overwater operations that require two Long Range Communications Systems (LRCS) may be conducted with one operative HF system and SATCOM voice or SATCOM data link.

23-11-01B

1. SATCOM system is considered to operate normally provided SATCOM System status messages or Flight Deck / Data Communications Management System status messages are NOT displayed.
2. Refer to B777 Operations Manual, Volume 1 for CPDLC/ADS procedures, and Volume 2 for SATCOM voice operation.
3. If the remaining HF fails in the NOPAC, make position reports using free text CPDLC messages.

(M) PROCEDURES

23-11-01A, 23-11-01B

Contact MCC to check thirty (30) day history. When an aircraft achieves the third individual MEL occurrence in thirty (30) days, MCC should apply [MEL item 23-00-99](#).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION						REMARKS OR EXCEPTIONS
23-12-01A	VHF Communications Systems	Y	3	2	C	Center or Right VHF Comm may be inoperative.
23-12-01B	VHF Data Link	Y	1	0	C	(O) May be inoperative provided: a) If available, SATCOM data link is used, and b) If SATCOM data link is unavailable, utilize available voice communications.
23-12-01C	VHF Data Link	Y	1	0	D	May be inoperative provided procedures do not require its use.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-12-01A	Captain's Radio Tuning Panel	___ VHF Communications System INOP
23-12-01B	Captain's Radio Tuning Panel	___ VHF Data Link INOP
23-12-01C	Captain's Radio Tuning Panel	___ VHF Data Link INOP

NOTE: Extended overwater operations that require two Long Range Communications Systems (LRCS) may be conducted with one operative HF system and SATCOM voice or SATCOM data link.

(O) PROCEDURES

23-12-01B

Refer to REMARKS or EXCEPTIONS section above.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-15-01A	Satellite Communication (SATCOM) Systems "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for SATCOM requirements, b) Flight remains within 180 minutes of landing at a suitable airport, and c) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>Polar Operations</u> Not Authorized Theater Restrictions May Apply
23-15-01B	SATCOM Voice Systems "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for SATCOM requirements, b) Flight remains within 180 minutes of landing at a suitable airport, and c) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). <u>Polar Operations</u> Not Authorized Theater Restrictions May Apply
23-15-01C	SATCOM Data Link "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, and b) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). Theater Restrictions May Apply
23-15-01D	SATCOM Data Link "DISP.APPR.REQ'D."	Y	1	0	D May be inoperative provided procedures do not require its use. Refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements . Theater Restrictions May Apply

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-15-01A	Captain's Audio Control Panel	SATCOM System INOP
23-15-01B	Captain's Audio Control Panel	SATCOM Voice System INOP
23-15-01C	Captain's Audio Control Panel	SATCOM Data Link INOP
23-15-01D	Captain's Audio Control Panel	SATCOM Data Link INOP

MAINTENANCE NOTE:

The status message SATCOM SYSTEM indicates that all SATCOM capability is inoperative. The status message SATCOM HI GAIN indicates the SATCOM Voice System is inoperative.

(O) PROCEDURES

NOTE 1: Extended overwater operations that require two Long Range Communications Systems (LRCS) may be conducted with one operative HF system and SATCOM voice or SATCOM data link.

NOTE 2: If SATCOM data link is inoperative, then CPDLC is also inoperative.

23-15-01A, 23-15-01B

ATC required position reports must be made using VHF / HF voice communication when SATCOM System inoperative.

NOTE: The EICAS alerting message SATCOM will be displayed when the status message SATCOM SYSTEM is displayed. The EICAS alerting message SATCOM VOICE will be displayed when the status message SATCOM HI GAIN is displayed.

23-15-01C

Refer to REMARKS or EXCEPTIONS sections on Page 23-7.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-21-01	Selective Call System (SELCAL) "DISP.APPR.REQ'D."	Y	1	0	C (O) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for operations with SELCAL inoperative.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-21-01	Captain's SECAL Code Placard	SELCAL System INOP

(O) PROCEDURES

Refer to REMARKS or EXCEPTIONS section above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-24-01	Radio Tuning Panels	Y	3	2 C	May be inoperative provided left radio tuning panel operates normally. NOTE: Any function that operates normally may be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-24-01	Affected Radio Tuning Panel	___ Radio Tuning Panel INOP

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-11

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-24-02A	Fixed Emergency Locator Transmitter (ELT) (-200LR)	N	1	0	A (M) May be inoperative provided: a) System is deactivated, and b) Repairs are made within 90 days.
23-24-02B	Fixed Emergency Locator Transmitter (ELT) (-200LR)	Y	1	0	A May be missing provided repairs are made within 90 days.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-24-02A	Overhead Panel near ELT switch	Fixed ELT INOP
23-24-02B	Overhead Panel near ELT switch	Fixed ELT Not Installed

NOTE 1: The 777-200ER has two portable "Survival" type ELTs, one in the flight deck and one in the cabin.
The 777-200LR has a fixed mounted automatic ELT permanently installed in the fuselage which is controlled by a switch on the overhead panel and a portable "Survival" type ELT located in the cabin.

NOTE 2: Dispatch relief for the Survival type ELT is in [MEL 25-63-03](#)

(M) PROCEDURES

23-24-02A

Deactivate the fixed ELT as follows:

1. Gain access to the ELT in the ceiling of the Overhead Flight Attendant Rest.
2. Disconnect, cap and stow the associated control/indication electrical connector.
3. Position the ELT's integral control switch to OFF.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-27-01A	Data Communication Management System "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for operations with ACARS inoperative, b) Flight remains within 180 minutes of landing at a suitable airport, and c) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). Theater Restrictions May Apply
23-27-01B	Data Communication Management System "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for operations with ACARS inoperative, b) SATCOM voice operates normally, and c) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). Theater Restrictions May Apply
23-27-01C	Automatic Dependent Surveillance – Contract (ADS-C) Function "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for operations with ACARS inoperative, and b) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). NOTE: The Automatic Dependent Surveillance Function (ADSF) is a function hosted in the FMCF with its flight deck interface provided by the DCMS. Theater Restrictions May Apply
23-27-01D	ACPT / CANC / RJCT Switch Lights	Y	6	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-27-01A	Center Display Control Panel	Data Communication Management System INOP
23-27-01B	Center Display Control Panel	Data Communication Management System INOP
23-27-01C	Center Display Control Panel	Automatic Dependent Surveillance Contract (ADS-C) Function INOP
23-27-01D	Center Display Control Panel	___ ACPT / CANC / RJCT Switch Light(s) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-13

MAINTENANCE NOTES:

For DCMS inoperative, the Flight Deck Printer, Maintenance Access Terminal (MAT), Portable Maintenance Access Terminal, the Side Display access to the Central Maintenance Computer and ACARS may be inoperative. The Automatic Dependent Surveillance – Contract (ADS-C) Function is hosted in the FMCF with its flight deck interface provided by the DCMS.

(O) PROCEDURES

23-27-01A, 23-27-01B, 23-27-01C

NOTE: For A/C 7001-7102 only: When the Data Communications Management System is inoperative, 8.33 kHz VHF radio tuning is not available.

1. Refer to REMARKS or EXCEPTIONS sections on Page 23-12.
2. Data Link communications unavailable; use VHF / HF / SATCOM voice.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-27-02A	Flight Deck Communications System (ACARS Data Link) "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for operations with ACARS inoperative, b) Flight remains within 180 minutes of landing at a suitable airport, and c) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). NOTE: Any mode that operates normally may be used. Theater Restrictions May Apply
23-27-02B	Flight Deck Communications System (ACARS Data Link) "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Refer to Airway Manual, Chapter CM, ATC & Flt Control Communication, for operations with ACARS inoperative, b) SATCOM voice operates normally, and c) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). NOTE: Any mode that operates normally may be used. Theater Restrictions May Apply
23-27-02C	Flight Deck Communications System (ACARS Data Link) "DISP.APPR.REQ'D."	Y	1	0	D May be inoperative provided procedures do not require its use.
MEL ITEM	TAB LOCATION		PLACARD TEXT		
23-27-02A	Center Display Control Panel		Data Link Communication System INOP		
23-27-02B	Center Display Control Panel		Data Link Communication System INOP		
23-27-02C	Center Display Control Panel		Data Link Communication System INOP		

(O) PROCEDURES

23-27-02A, 23-27-02B

1. Refer to REMARKS or EXCEPTIONS sections above.
2. When ACARS is inoperative, ATC and company data link communications functions are not available.
3. Data Link communications unavailable; use VHF / HF / SATCOM voice.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PASSENGER ADDRESS SYSTEM					
23-31-01A	Passenger Address System "Contact MCC"	Y	1	0	B (O) May be inoperative provided: a) Alternate, normal and emergency procedures and/or operating restrictions are reviewed, and b) Flight attendant chime and call lights operate normally. NOTE: Any passenger address function that operates normally may be used.
23-31-01B	Passenger Address Controller Modes	Y	2	1	C (M) One may be inoperative provided operating controller mode is selected.
23-31-01C	Lavatory Speakers	Y	8	0	C (O) May be inoperative provided: a) Prior to departure, flight crew will notify Flight Attendants of all inoperative lavatory speaker(s), and b) Flight Attendants must give instructions to lavatory occupants verbally when lavatory speakers are inoperative.
23-31-01D	Cabin Speakers	Y	-	-	C (M) May be inoperative provided inoperative speakers are not adjacent to each other.
23-31-01E	Cabin Speakers "DISP.APPR.REQ'D."	Y	-	-	C (M) No passenger seat or cabin attendant seat may be occupied from which passenger address system is not audible and intelligible; seat must be blocked and placarded DO NOT OCCUPY. NOTE: MCC must contact Flight Control for coordination with ROC to remove the seat from inventory until repaired.
23-31-01F	Cabin Speakers (Flight Crew Rest) (OFCR) "DISP.APPR.REQ'D."	Y	-	0	C (O) May be inoperative provided: a) Alternate and/or emergency procedures and operating restrictions are used, b) Crewmember interphone system is operative, and, c) Flight attendant alerting system is operative. NOTE 1: Any station function(s) that operate normally may be used. NOTE 2: The Flight Crew Rest facility remains a Class 1 Rest Facility as long as the interphone is operative and alternate procedures are used. NOTE 3: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD		REPAIR CATEGORY				
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
PASSENGER ADDRESS SYSTEM (CONTINUED)						
23-31-01G	Prerecorded Passenger Announcement System	Y	1	0	C	(O) May be inoperative provided: a) The PA System is used in lieu of Prerecorded announcements, b) If PA System is inoperative: 1) Refer to FOM, Passenger Handling, PA Inoperative. 2) Refer to 777 QRH, Non-Normal Checklist, Communications, PA System Inoperative. 3) Refer to In-Flight Service On Board Manual, Aircraft Equipment / Systems, Inoperative PA System. c) Prior to flight, the pilot in command must brief cabin crew members on the emergency procedures which will be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-31-01A	Captain's Audio Control Panel	Passenger Address System INOP
23-31-01B	Captain's Audio Control Panel	___ Passenger Address Controller INOP
23-31-01C	Captain's Audio Control Panel	___ Lavatory Speaker(s) INOP
23-31-01D	Captain's Audio Control Panel	___ Cabin Speaker(s) INOP
23-31-01E	Captain's Audio Control Panel	___ Flight Crew Rest Cabin Speaker(s) INOP
23-31-01F	Captain's Audio Control Panel	___ Cabin Speaker(s) INOP
23-31-01G	Captain's Audio Control Panel	Prerecorded Passenger Announcement System INOP

(O) PROCEDURES

23-31-01A

NOTE: Certain cabin speaker drive module faults may result in PASSENGER ADDRESS status message being displayed when the associated speakers operate normally. If the PA system operates normally throughout the cabin, alternate procedures and/or restrictions are not required.

1. Refer to FOM, Passenger Handling, PA Inoperative.
2. Refer to 777 QRH, Non-Normal Checklist, Communications, PA System Inoperative.
3. Refer to In-Flight Service On Board Manual, Aircraft Equipment / Systems, Inoperative PA System.
4. Prior to flight, the pilot in command must brief cabin crew members on the emergency procedures which will be used.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-17

(O) PROCEDURES (Cont'd)

23-31-01C

Refer to REMARKS or EXCEPTIONS section on Page 23-15.

23-31-01F

Coordinate with the Purser / FL to establish alternate procedures for contacting OFCR occupants.

23-31-01G

Refer to REMARKS or EXCEPTIONS section on Page 23-16.

(M) PROCEDURES

23-31-01B

1. Position the PA NORM/ALT switch on the Attendant Switch Panel (ASP) to ALT.
2. Confirm the PASSENGER ADDRESS status message is not displayed.

23-31-01D

NOTE: Certain cabin speaker drive module faults may result in PASSENGER ADDRESS status message being displayed when the associated speakers operate normally.

Confirm that no adjacent cabin speaker pairs (forward to aft) are inoperative. If speakers are to be repositioned to ensure that no adjacent cabin speakers are inoperative, Maintenance is Required and Flight Crew May **Not** Placard.

23-31-01E

NOTE: Certain cabin speaker drive module faults may result in PASSENGER ADDRESS status message being displayed when the associated speakers operate normally.

Affected seats must be blocked and placarded DO NOT OCCUPY.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-37-01A	In-flight Entertainment (IFE) System (system deactivated) "DISP.APPR.REQ'D."	Y	1	0	D (O)(M) May be inoperative provided system is deactivated. NOTE: Approval for flight must be obtained by MCC Shift Manager.
23-37-01B	In-flight Entertainment (IFE) System (partially operative) "DISP.APPR.REQ'D."	Y	1	0	D (O) May be inoperative provided the Captain briefs the Purser / FL that it may be necessary to do passenger briefings and emergency equipment demonstrations verbally. NOTE1: This item is for use when the IFE system is partially inoperative (i.e., zone inop, software load corrupt). For individual IFE components see the Nonessential Equipment and Furnishings List (NEF) for deferral. NOTE 2: Any part of the system that is operational may be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-37-01A	1. Video On Light 2. IFE Control Panel	IFE Inoperative – "Do not use"
23-37-01B	1. Video On Light 2. IFE Control Panel	IFE _____ function(s) Inop

(O) PROCEDURES

23-37-01A

NOTE: A corrupt or inop file server will inhibit all Passenger Service functions: e.g., reading lights and attendant call function.

Captain to brief Purser / FL that it may be necessary to do passenger briefings and emergency equipment demonstrations verbally.

23-37-01B

Refer to REMARKS or EXCEPTIONS section above.

(M) PROCEDURES

23-37-01A

NOTE: This relief should only be applied if it is necessary to deactivate the IFE system for situations such as overheating or safety of flight. If the system is partially operative then use the partially operative MEL relief; for example, if the wrong media software was loaded or the file server was corrupted the system would not operate normally but would not require deactivation. For individual IFE components see the Nonessential Equipment and Furnishings List (NEF) for deferral.

CONTINUED NEXT PAGE

1. To deactivate the IFE System:
 - a. Turn the IFE Power Switch to the OFF position.
 - b. Pull and secure the following circuit breakers:

1) 777ER

P110 Panel	
A24	IFE AMCU 3
A27	IFE AMCU 4

P210 Panel	
A5	IFE AMCU 1
B2	IFE AMCU 2
D16	IFE E2-4 RACK
D19	IFE AMCU 5
D22	IFE AMCU 6
E5	IFE E2-5 RACK
E8	IFE CREW TERMINAL
J13	E2-4 RACK COOLING

2) 777LR

P110 Panel	
A24	IFE ZIA 2B
A27	IFE ZIA 2A
D21	VOD
G23	ENTMT CTRL L
H13	IFE ZIA 3A

P210 Panel	
A5	IFE ZIA 1A
B2	IFE ZIA 1B
E5	VIDEO PGMS & CTRL
H8	ENTMT CTRL R
K23	IFE ZIA 4A

2. Install a placard on the IFE control panel stating "IFE Inoperative – DO NOT USE".

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-20

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
23-39-01	Cabin Area Control Panels (CACP) / Cabin System Control Panels (CSCP)	N	2	1	C	NOTE: Any CACP / CSCP function that operates normally may be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-39-01	Affected CACP(s)	___ CACP INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION	Y		1	0	C	REMARKS OR EXCEPTIONS
SERVICE INTERPHONE SYSTEM							
23-41-01A	Nose Gear Jack					(O) Service interphone flight deck to ground / ground to flight deck function may be inoperative provided: a) Nose gear flight interphone jack operates normally and is used for communication, and b) In the event communications are interrupted or additional failures occur, refer to FOM, Chapter 6, Ramp Operations.	
23-41-01B	Nose Gear Jack "Contact MCC"					(O) May be inoperative provided hand signals for ("remove external power", "remove chocks", "shut down engines", etc.) are used for communication. NOTE: In the event of loss of communication with ground personnel refer to FOM, Chapter 6, Ramp Operations.	
23-41-01C	Other Than Nose Gear Jacks		-			D May be inoperative provided procedures do not require its use.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-41-01A	Near Overhead Panel Service Interphone Switch	Service Interphone Nose Gear Jack INOP
23-41-01B	Near Overhead Panel Service Interphone Switch	Service Interphone Nose Gear Jack INOP
23-41-01C	Near Overhead Panel Service Interphone Switch	Service Interphone ____ Jack INOP

(O) PROCEDURES

23-41-01A, 23-41-01B

Refer to REMARKS or EXCEPTIONS sections above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
	CREWMEMBER INTERPHONE SYSTEMS					
23-42-01A	Flight Deck to Cabin / Cabin to Flight Deck Functions “Contact MCC”	Y	8	4	B	(O) May be inoperative provided: a) Flight deck to cabin and cabin to flight deck interphone functions operate normally on the 1L cabin handset and at least three other cabin handsets, and b) Alternate communications procedures between affected flight attendants station(s) and flight deck are used. NOTE: Any cabin interphone function that operates normally may be used.
23-42-01B	Cabin to Cabin Functions “Contact MCC”	Y	8	4	B	(O) May be inoperative provided: a) Cabin to cabin interphone functions operate normally on the 1L cabin handset and at least three other cabin handsets, b) Flight crewmembers refer to 777 QRH, Non-Normal Checklist, Communications, Cabin Interphone System Inoperative, and c) Cabin crewmembers refer to In-Flight Service On-Board Manual, Aircraft General, Inoperative Interphone System. NOTE: Any cabin interphone that operates normally may be used.
23-42-01C	Flight Deck / Cabin to Crew Rest, Crew Rest to Flight Deck / Cabin Functions “DISP.APPR.REQ'D.”	Y	2	0	B	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues, and c) Flight crewmembers are to coordinate with the Purser / FL to establish alternate procedures for contacting OFCR / OFAR occupants. NOTE 1: Any cabin interphone function that operates normally may be used. NOTE 2: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
23-42-01D	Cabin Interphone Controller Modes	Y	2	1	C	(M) One may be inoperative provided operating controller mode is selected.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-23

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-42-01A	Captain's Audio Control Panel	Flight Deck to Cabin / Cabin to Flight Deck Function(s) at ____ Handset INOP
23-42-01B	Captain's Audio Control Panel	Cabin to Cabin Function(s) at ____ Handset INOP
23-42-01C	Captain's Audio Control Panel	FLIGHT CREW REST AREA INOP
23-42-01D	Captain's Audio Control Panel	____ Cabin Interphone Controller Mode INOP

(O) PROCEDURES

23-42-01A, 23-42-01B, 23-42-01C

Refer to REMARKS or EXCEPTIONS sections on Page 23-22.

(M) PROCEDURES

23-42-01C

1. Remove all personal items from the associated crew rest.

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

2. Secure the associated crew rest entrance door closed.
3. Place a strip of red OM-2 "UNSERVICABLE-DO NOT USE" tape or equivalent* across associated rest area door.

* An acceptable alternate to the OM2 tape is a section of 2 inch wide masking tape with the words "UNSERVICEABLE – DO NOT USE " printed legibly in 1 inch black letters.

23-42-01D

1. Position the Attendant Switch Panel (ASP) CI NORM/ALT switch to ALT.
2. Confirm the CABIN INTERPHONE status message is not displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD					REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
	CABIN INTERPHONE ALERTING SYSTEMS					
23-42-02A	Flight Deck Call System (Lights and EICAS Messages) “Contact MCC”	Y	1	0	B	NOTE: The flight deck chime must be operative.
23-42-02B	Flight Attendant Call Lights “Contact MCC”	Y	-	0	B	(O) May be inoperative provided: a) PA system operates normally, and b) Cabin crewmembers will use PA or establish verbal communication with inoperative call light or chime positions. NOTE 1: Passenger to attendant call system is considered a Non-Essential Equipment and Furnishings (NEF) item. NOTE 2: Any visual alerting system function(s) that operates normally may be used.
23-42-02C	Flight Attendant Chime “Contact MCC”	Y	1	0	B	(O) May be inoperative provided: a) PA system operates normally, and b) Cabin crewmembers will use PA or establish verbal communication with inoperative call light or chime positions. NOTE 1: Passenger to attendant call system is considered a Non-Essential Equipment and Furnishings (NEF) item. NOTE 2: Any audio alerting system function(s) that operates normally may be used.
23-42-02D	Crew Rest Call Lights / Chimes Systems “Contact MCC”	Y	-	0	B	(O) May be inoperative provided: a) Associated crew rest cabin interphone handset system operates normally, and b) Flight crewmembers are to coordinate with the Purser / FL to establish alternate procedures for contacting OFCR / OFAR occupants. NOTE: Any alerting system function that operates normally may be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-42-02A	Captain's Audio Control Panel	___ Flight Deck Call Light INOP
23-42-02B	Captain's Audio Control Panel	___ Flight Attendant Call Light(s) INOP
23-42-02C	Captain's Audio Control Panel	___ Flight Attendant Call Chime(s) INOP
23-42-02D	Captain's Audio Control Panel	OFCR / OFAR ___ Call Light(s)/Chime(s) INOP

(O) PROCEDURES

23-42-02B, 23-42-02C, 23-42-02D

Refer to REMARKS or EXCEPTIONS sections above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
CABIN INTERPHONE HANDSET SYSTEMS					
23-42-03A	Flight Deck Handset	Y	1	0	C (O) May be inoperative provided: a) Flight deck to cabin communication operates normally, and b) Use flight deck audio panel to access PA and/or Cabin Interphone functions.
23-42-03B	Cabin Attendant Handset "Contact MCC"	Y	-	4	B (O) May be inoperative provided: a) Fifty percent of cabin handsets operate normally, b) One handset must operate normally at each pair of exit doors, c) Cabin crewmembers refer to In-Flight Service On-Board Manual, Aircraft General, Inoperative Interphone System, and d) Flight crewmembers are to coordinate with the Purser / FL to establish plans for alternate communications between the affected flight attendant stations. 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 function that operates normally may be used.
23-42-03C	Flight Crew Rest Area (OFCR) Handsets	Y	2	1	C (O) May be inoperative provided at least one handset operates normally.
23-42-03D	Flight Crew Rest Area (OFCR) Handsets "DISP.APPR.REQ'D."	Y	2	0	C (O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues, and c) Flight crewmembers are to coordinate with the Purser / FL to establish alternate procedures for contacting OFCR / OFAR occupants. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	CABIN INTERPHONE HANDSET SYSTEMS (CONTINUED)				
23-42-03E	Flight Attendant Rest Area (OFAR) Handsets	Y	2	1 C	(O) May be inoperative provided at least one handset operates normally.
23-42-03F	Flight Attendant Rest Area (OFAR) Handsets "DISP.APPR.REQ'D."	Y	2	0 C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues, and c) Flight crewmembers are to coordinate with the Purser / FL to establish alternate procedures for contacting OFCR / OFAR occupants NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-42-03A	Flight Deck Handset	Flight Deck Handset INOP
23-42-03B	1. Captain's Audio Control Panel 2. Affected Cabin Handset(s)	___ Cabin Attendant Handset(s) INOP
23-42-03C	1. Captain's Audio Control Panel 2. Affected Crew Rest Handset(s)	___ OFCR Handset(s) INOP
23-42-03D	1. Captain's Audio Control Panel 2. Affected Crew Rest Handset(s)	___ OFCR Handset(s) INOP
23-42-03E	1. Captain's Audio Control Panel 2. Affected Crew Rest Handset(s)	___ OFAR Handset(s) INOP
23-42-03F	1. Captain's Audio Control Panel 2. Affected Crew Rest Handset(s)	___ OFAR Handset(s) INOP

(O) PROCEDURES

23-42-03A, 23-42-03B

Refer to REMARKS or EXCEPTIONS section on Page 23-25.

23-42-03C, 23-42-03E

Ensure remaining handset operates normally.

23-42-03D, 23-42-03F

Refer to REMARKS or EXCEPTIONS sections on Page 23-25 and/or Page 23-26 as applicable.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-27

(M) PROCEDURES

23-42-03D, 23-42-03F

1. Remove all personal items from the associated crew rest.

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

2. Secure the associated crew rest entrance door closed.
3. Place a strip of red OM-2 "UNSERVICABLE-DO NOT USE" tape or equivalent* across associated rest area door.

* An acceptable alternate to the OM2 tape is a section of 2 inch wide masking tape with the words "UNSERVICEABLE – DO NOT USE " printed legibly in 1 inch black letters.

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-28

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-43-01	Ground Crew Call System	Y	1	0 C	(O) May be inoperative provided: a) Operation of the EE – Equipment Cooling System is monitored, and b) Refer to FOM Section 6, Ramp Operations.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-43-01	Captain's Audio Control Panel	Ground Crew Call System INOP

(O) PROCEDURES

NOTE: The flight deck chime must operate normally for the cabin interphone system.

An inoperative ground crew call horn will not annunciate loss of EE - Equipment Cooling or when the Inertial Reference system is operating on battery power.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
FLIGHT INTERPHONE SYSTEM						
23-51-01A	Nose Gear Jack	Y	1	0	C	(O) Flight interphone flight deck to ground / ground to flight deck function may be inoperative provided: a) Nose gear service interphone jack operates normally, and b) In the event communications are interrupted or additional failures occur, refer to FOM, Chapter 6, Ramp Operations.
23-51-01B	Nose Gear Jack "Contact MCC"	Y	1	0	B	(O) May be inoperative provided hand signals for ("remove external power", "remove chocks", "shut down engines", etc.) are used for communication. NOTE: In the event of loss of communication with ground personnel refer to FOM, Chapter 6, Ramp Operations.
23-51-01C	Main Equipment Center (MEC) Jacks	Y	-	0	D	May be inoperative provided procedures do not require their use.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-51-01A	Captain's Audio Control Panel	Nose Gear Interphone Jack INOP
23-51-01B	Captain's Audio Control Panel	Nose Gear Interphone Jack INOP
23-51-01C	Captain's Audio Control Panel	___ Main Equipment Center Interphone Jack(s) INOP

(O) PROCEDURES

23-51-01A, 23-51-01B

Refer to REMARKS or EXCEPTIONS sections above.

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-30

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-51-02	Flight Deck Speakers	Y	2	0 C	May be inoperative provided: a) Procedures do not require their use, and b) Associated headset earphones or headphones are installed and operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-51-02	Affected Speaker(s)	___ Flight Deck Speaker(s) INOP

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-31

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-51-03	Flight Deck Hand Microphones	Y	3	0 C	May be inoperative or missing provided associated boom microphone operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-51-03	Associated Audio Control Panel(s)	___ Flight Deck Hand Microphone(s) INOP

NUMBER INSTALLED					NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
	FLIGHT DECK HEADSETS / HEADPHONES					
23-51-04A	Flight Deck Headset / Headphones	Y	-	-	C	Any in excess of those required for each person on flight deck duty may be inoperative.
23-51-04B	Headset Boom Microphones “Contact MCC”	Y	-	0	A	Boom microphones may be inoperative provided: a) Associated hand microphone is installed and operates normally, and b) Repairs are made within three flight days.
23-51-04C	Headset Boom Microphones “Contact MCC”	Y	-	-	D	Any in excess of those required for each person on flight deck duty may be inoperative.
23-51-04D	Headset Earphones / Headphones	Y	-	1	C	Either Captain’s or First Officer’s earphone / headphones may be inoperative provided associated flight deck speaker operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-51-04A	Associated Audio Control Panel(s)	___ Flight Deck Headset / Headphone(s) INOP
23-51-04B	Associated Audio Control Panel(s)	___ Flight Deck Headset Boom Microphone(s) INOP
23-51-04C	Associated Audio Control Panel(s)	___ Flight Deck Headset Boom Microphone(s) INOP
23-51-04D	Associated Audio Control Panel(s)	___ Flight Deck Headset Earphones / Headphone(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
AUDIO CONTROL PANELS						
23-51-05A	Captain's Audio Control Panel	Y	1	0	C	(O) May be inoperative provided first observer's audio control panel operates normally. NOTE: Any function that operates normally may be used.
23-51-05B	First Observer's Audio Control Panel “Contact MCC”	Y	1	0	A	May be inoperative provided: a) Captain's audio control panel operates normally, and b) Repairs are made within two flight days. NOTE: Any function that operates normally may be used.
23-51-05C	Second Observer's Audio Control Panel	Y	1	0	D	
23-51-05D	Second Observer's Audio Control Panel (MIC, CALL, Receiver Lights)	Y	-	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-51-05A	Captain's Audio Control Panel	Captain's Audio Control Panel INOP
23-51-05B	Observer's Audio Control Panel	First Observer's Audio Control Panel INOP
23-51-05C	Observer's Audio Control Panel	Second Observer's Audio Control Panel INOP
23-51-05D	Observer's Audio Control Panel	Second Observer's Audio Control Panel ____ MIC, CALL, Receiver Light(s) INOP

(O) PROCEDURES

23-51-05A

For the captain's Audio Control Panel (ACP) inoperative, position Aft Aisle Stand panel OBS AUDIO selector to CAPT. The captain must use the first observer ACP.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	MICROPHONE (MIC) / INTERPHONE SWITCHES				
23-51-06A	Control Wheel MIC / Interphone Switches	N	2	1	C (M) May be inoperative provided: a) Associated audio control panel MIC / interphone switch operates normally, and b) Affected switch is deactivated open.
23-51-06B	Flight Crew Audio Control Panel MIC / Interphone Switches	N	2	1	C (M) May be inoperative provided: a) Associated control wheel MIC / interphone switch operates normally, and b) Affected switch is verified inoperative open.
23-51-06C	Glareshield MIC / Interphone Switches	N	2	0	C (M) May be inoperative provided the affected switch is deactivated open.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-51-06A	Associated Audio Control Panel	___ Control Wheel MIC / Interphone Switch INOP
23-51-06B	Near Affected PTT Switch	___ Audio Control Panel MIC / Interphone Switch INOP
23-51-06C	Near Affected PTT Switch(es)	___ Glareshield MIC / Interphone Switch(es) INOP

(M) PROCEDURES

23-51-06A

1. Deactivate the inoperative control wheel MIC/interphone switch.
 - a. Open P11 panel circuit breakers INTERPHONE-CAPTAIN and INTERPHONE-F/O.
 - b. Remove the two screws which mount the MIC / interphone switch to the control wheel.
 - c. Pull the MIC / interphone switch out of the control wheel.
 - d. Disconnect, cap and stow the wires from the MIC/interphone switch.
 - e. Install the MIC / interphone switch in the control wheel and secure with the two screws.
 - f. Close P11 panel circuit breakers INTERPHONE-CAPTAIN and INTERPHONE-F/O.
2. Confirm the inoperative Control Wheel MIC/interphone switch is deactivated open and verify the associated pilot's ACP MIC/interphone switch operates normally.
 - a. Provide electrical power on the airplane.
 - b. Push the FLT Transmitter Select Switch on the Captain's and F/O's ACPs and ensure the FLT MIC light is illuminated on both panels.
 - c. Ensure the FLT Receiver Light is illuminated and Receiver Volume Control is properly adjusted on both ACPs.
 - d. Speak into the associated pilot's microphone while simultaneously pushing the deactivated Control Wheel MIC/interphone switch. No transmission should be heard on the other pilot's headset.
 - e. Speak into the associated pilot's microphone while simultaneously pushing the associated pilot's ACP MIC switch. The transmission should be clearly heard on the other pilot's headset.

CONTINUED NEXT PAGE

 DELTA	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-35

23-51-06B

Confirm the inoperative Audio Control Panel (ACP) MIC/interphone switch is inoperative open and verify the associated pilot's Control Wheel MIC/interphone switch operates normally (AMM 23-00-00/901).

1. Provide electrical power on the airplane.
2. Push the PA Transmitter Select Switch on the associated ACP and ensure the PA MIC light is illuminated.
3. Without pressing MIC on the Control Wheel, ACP or Glareshield, speak into the associated microphone and determine if voice transmission can be heard over the passenger address (PA) system. If no voice transmission is heard, the ACP MIC/interphone switch is in the open position.
4. Speak into the associated pilot's microphone while simultaneously pushing the inoperative ACP MIC/interphone switch. No transmission should be heard on the other pilot's headset.
5. Speak into the associated pilot's microphone while simultaneously pushing the associated pilot's Control Wheel MIC/interphone switch. The transmission should be clearly heard on the other pilot's headset.

23-51-06C

1. Deactivate the inoperative Glareshield MIC/interphone switch.
 - a. Open P11 panel circuit breakers INTERPHONE-CAPTAIN and INTERPHONE-F/O.
 - b. Remove the two screws which mount the switch panel (CLOCK/MAP/MIC) in the glareshield panel.
 - c. Pull the switch panel out of the glareshield panel.
 - d. Disconnect, cap and stow the wires from the MIC/interphone switch.
 - e. Install the switch panel in the glareshield panel and secure with the two screws.
 - f. Close P11 panel circuit breakers INTERPHONE-CAPTAIN and INTERPHONE-F/O.
2. Confirm the inoperative Control Wheel MIC/interphone switch is deactivated open.
 - a. Provide electrical power on the airplane.
 - b. Push the FLT Transmitter Select Switch on the Captain's and F/O's ACPs and ensure the FLT MIC light is illuminated on both panels.
 - c. Ensure the FLT Receiver Light is illuminated and Receiver Volume Control is properly adjusted on both ACPs.
 - d. Speak into the associated pilot's microphone while simultaneously pushing the deactivated Glareshield MIC/interphone switch. No transmission should be heard on the other pilot's headset.

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-36

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-71-01	Cockpit Voice Recorder (CVR) System "Contact MCC"	Y	1	0	A May be inoperative provided: a) Flight Data Recorder (FDR) operates normally, and b) Repairs are made within three flight days.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-71-01	CVR Panel	Cockpit Voice Recorder INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-93-01	Overhead Panel Bus Controllers (OPBC) "Contact MCC"	N	2	1	B (O)(M) May be inoperative provided: a) The opposite Overhead Panel ARINC 629 System (OPAS) is verified to operate normally PRIOR TO EACH DEPARTURE (Log Book Entry Required), b) One air conditioning pack operates normally, c) Both auto cabin pressure controls operate normally, d) One center system hydraulic demand pump is selected ON for takeoff and landing, e) For the left OPBC inoperative, the left and right pitot and static air data modules operate normally, and f) Routes requiring a true course reference, or flight near the North or South Poles or in latitudes greater than 82 degrees N and S (polar keyholes) should be avoided. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-93-01	Center Display Control Panel	___ Overhead Panel Bus Controller INOP

(O) PROCEDURES

- For dispatch with an Overhead Panel ARINC System (OPAS) Overhead Panel Bus Controller (OPBC) inoperative:

NOTE: OPAS provides the position of most flight deck switches to using airplane systems via the ARINC 629 system busses rather than via electrical wires, as installed on earlier airplanes. Additionally, signals necessary to illuminate most annunciator lights on the flight deck also are transmitted via OPAS. Two nearly redundant, line-replaceable OPBCs are installed, which transmit, process and receive OPAS ARINC 629 signals. For failure of one OPBC, subsequent dispatch is transparent except for the flight deck effect noted in 1b below.

- Routes requiring a true course reference, or flight near the North or South Poles or in latitudes greater than 82 degrees N and S (polar keyholes) should be avoided.
- The Generator Drive indicator lights will be inoperative, but the Generator Drive disconnect function will operate normally should its use be required.
- Select one (not both) Center System Hydraulic C1 or C2 Demand Pump ON for takeoff and landing.

NOTE: Do not position center system Demand pump selector to ON before engine start.

- If the remaining OPBC fails, or if the left OPBC is inoperative at dispatch and a standby electrical power condition occurs, the following effects should be expected:

NOTE: The failures outlined above result in most flight deck switch positions not being available to using systems and most of the annunciator lights being inoperative. A majority of the using systems revert to a fail safe state with regard to switch positions. For example, should one of the above failures occur, the engine anti-ice system operates in automatic mode and cannot be changed.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-38

- a. The left and right system Hydraulic Demand Pumps and the center system Hydraulic Primary Pumps default to off and will remain off until OPAS is restored. The center system Hydraulic Demand Pumps (ADP) also default to off if selected to AUTO.
- b. The following alerting messages will be displayed:

HYD PRESS SYS C
HYD PRESS DEM L
HYD PRESS DEM R
SPOILERS
NO AUTOLAND

- c. Positioning the C1 or C2 Hydraulic Demand Pump ON per the associated HYD PRESS SYS C non-normal procedure will provide sufficient center system pressure for the remainder of the flight.
- d. After the C1 or C2 pump is selected ON, the HYD PRESS SYS C, SPOILERS and NO AUTOLAND EICAS alerting messages will blank and the following hydraulic system EICAS alerting messages will be displayed:

HYD PRESS DEM L
HYD PRESS DEM R
HYD PRESS PRI C1
HYD PRESS PRI C2
HYD PRESS DEM C2 (if C1 selected ON)

- e. The Display Select Panel will be inoperative. The CDU may be used to select displays as required. However, if an inboard display is selected to a format other than MFD using the associated Inboard Display Selector, that display will remain in the selected format. When CDU display control is selected, the EICAS alerting message DISPLAY SELECT PNL will be displayed.
- f. If true heading/track reference has been selected using the Heading Reference Switch (HDG REF), the autopilots will revert to magnetic reference, and the FMC (LNAV) and displays will revert to magnetic reference except in the polar keyholes (magnetic polar areas and latitudes greater than approximately 82 degrees N and S). Therefore, true heading/track cannot be flown outside of the polar keyholes. Additionally, autopilot roll modes other than LNAV cannot be flown in the polar keyholes.
- g. Electronic Checklist closed loop items requiring input from OPAS will not become green indicating checklist item completion. The Electronic Checklist item override feature can be used to complete the item.

NOTE: The cursor control device cursor location (annunciator) lights will not operate, but the cursor controls will otherwise operate normally.

- h. Master Brightness (MASTER BRIGHT) is not available for the primary displays and CDUs. The primary display and CDU individual panel brightness controls operate normally. Master Brightness control for panel lighting and the standby displays is unaffected by OPAS operation.
- i. The air conditioning system target temperature will default to 23 degrees C (75 F) and all Recirculation Fans will be off.
- j. All synoptic displays may have missing or incomplete information.
- k. The fuel jettison system is inoperative and the EICAS alerting message FUEL JETTISON SYS will not be displayed if fuel jettison is attempted.
- l. Predictive windshear system warning and caution alerts, and failure signals are not available. Weather radar "pop-up" display of predicted windshear conditions on the navigation display is also not available.
- m. The LDG ALT selector on the Pressurization Panel will be inoperative. Landing altitude will be correctly set provided the FMC flight plan and destination airport are current.
- n. The Landing Lights will remain on or off as last selected by the switches when the next failure occurs, and cannot be changed.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-39

(M) PROCEDURES

NOTE 1: The Generator Drive lights will be inoperative.

NOTE 2: For a pack to be operating normally, certain items associated with that system must be operative.
[Refer to MEL 21-51-01](#) for a listing of those items.

1. **PRIOR TO EACH DEPARTURE** - If the right OPBC is inoperative, verify that the left system OPAS operates normally.
 - a. Verify that the OPBC L, PDCU L, OPIC LA1, and OPIC RA1 EICAS STATUS MESSAGES are not displayed.
 - b. Additionally, the EICAS STATUS MESSAGES OPIC LA2 and OPIC RA2 are not allowed to be displayed at the same time.
 - c. Open the OPAS 1 circuit breaker on the P11 panel and wait at least 5 seconds.
 - d. Close the OPAS 1 circuit breaker on the P11 panel and wait at least 10 seconds.
 - e. Verify that the OPBC L, PDCU L, OPIC LA1, OPIC RA1, and either OPIC LA2 or OPIC RA2 EICAS STATUS MESSAGES are not displayed.
2. **PRIOR TO EACH DEPARTURE** - If the left OPBC is inoperative, verify that the right system OPAS operates normally.
 - a. Verify that the OPBC R, PDCU R, OPIC RA2 and OPIC LA2 EICAS STATUS MESSAGES are not displayed.
 - b. Additionally, the EICAS STATUS MESSAGES OPIC LA1 and OPIC RA1 are not allowed to be displayed at the same time.
 - c. Open the OPAS 2 circuit breaker on the P11 panel and wait at least 5 seconds.
 - d. Close the OPAS 2 circuit breaker on the P11 panel and wait at least 10 seconds.
 - e. Verify that the OPBC R, PDCU R, OPIC RA2, OPIC LA2 and either OPIC LA1 or OPIC RA1 EICAS STATUS MESSAGES are not displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
23-93-02A	Overhead Panel Interface Cards (OPIC)	Y	4	3	C May be inoperative provided: a) One air conditioning pack operates normally, and b) Both center system hydraulic demand pumps operate normally.
23-93-02B	Overhead Panel Interface Cards (OPIC)	Y	4	3	C May be inoperative provided: a) One air conditioning pack operates normally, and b) One center system hydraulic demand pump is selected ON for takeoff and landing. NOTE 1: Do not position center hydraulic system Demand pump selector ON before engine start. NOTE 2: To reduce noise, center hydraulic system Demand pump may be positioned to OFF for the other phases of flight.

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-93-02A	Center Display Control Panel	___ Overhead Panel Interface Card INOP
23-93-02B	Center Display Control Panel	___ Overhead Panel Interface Card INOP

OPERATIONS NOTE

Certain indicator lights will be inoperative with the above EICAS Status Messages displayed. Inoperative indicator lights associated with these Status Messages are listed below.

STATUS MESSAGE	INOPERATIVE INDICATORS
OPIC LA1	L HYD ENG PUMP FAULT LIGHT C HYD ELEC PUMP 1 FAULT LIGHT PASSENGER OXYGEN ON LIGHT
OPIC RA1	L HYD ELEC PUMP FAULT LIGHT C HYD ELEC PUMP 2 FAULT LIGHT RAM AIR TURBINE UNLKD LIGHT
OPIC LA2 C	HYD AIR PUMP 1 FAULT LIGHT R HYD ELEC PUMP FAULT LIGHT
OPIC RA2 R	HYD ENG PUMP FAULT LIGHT C HYD AIR PUMP 2 FAULT LIGHT

	B777 Minimum Equipment List	ATA 23 Communications	R14 05/09/16 Page 23-41

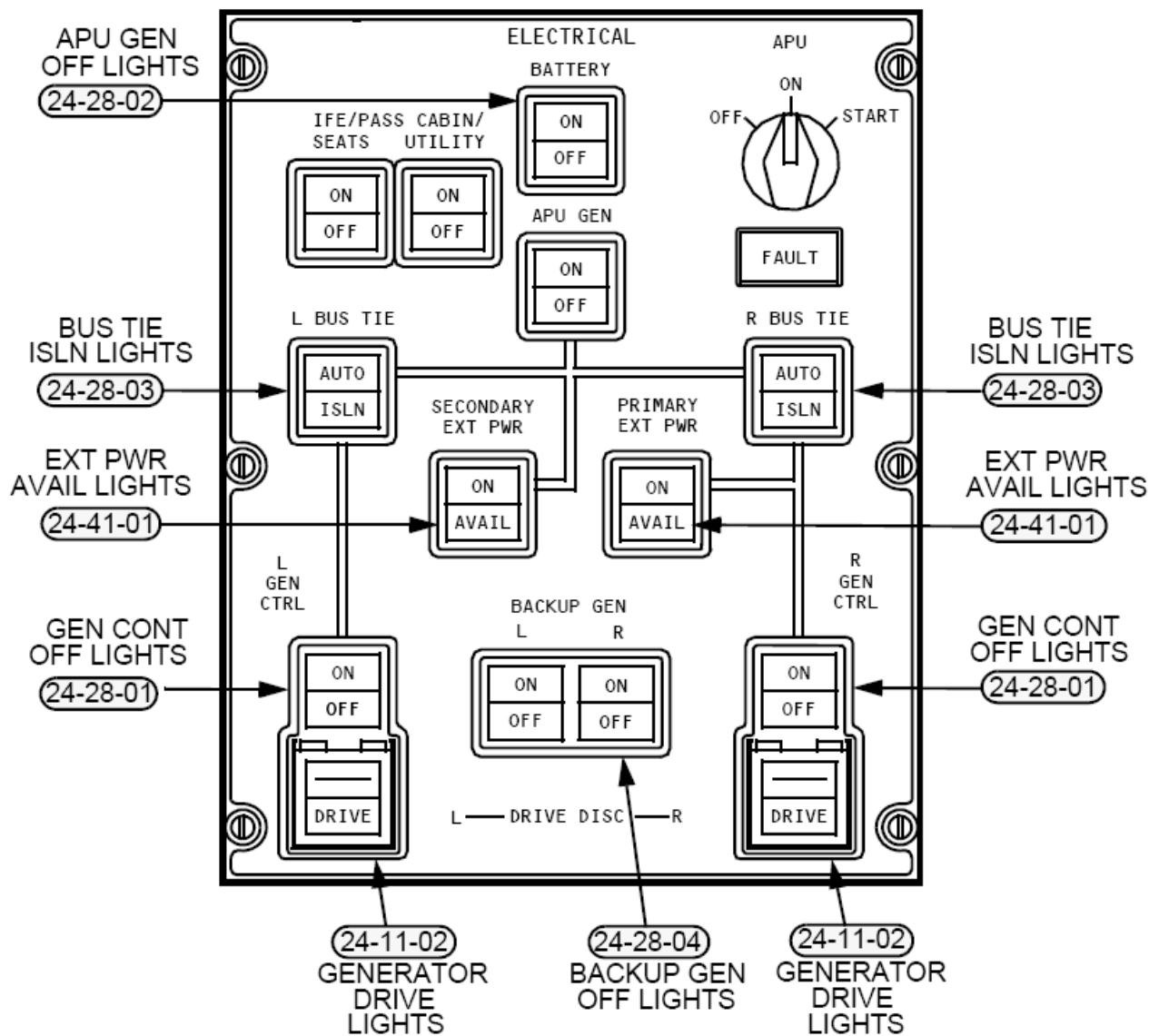
NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
23-93-03	Panel Data Concentrator Units (PDCU)	Y	2	1	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
23-93-03	Center Display Control Panel	___ Panel Data Concentrator Units (PDCU) INOP

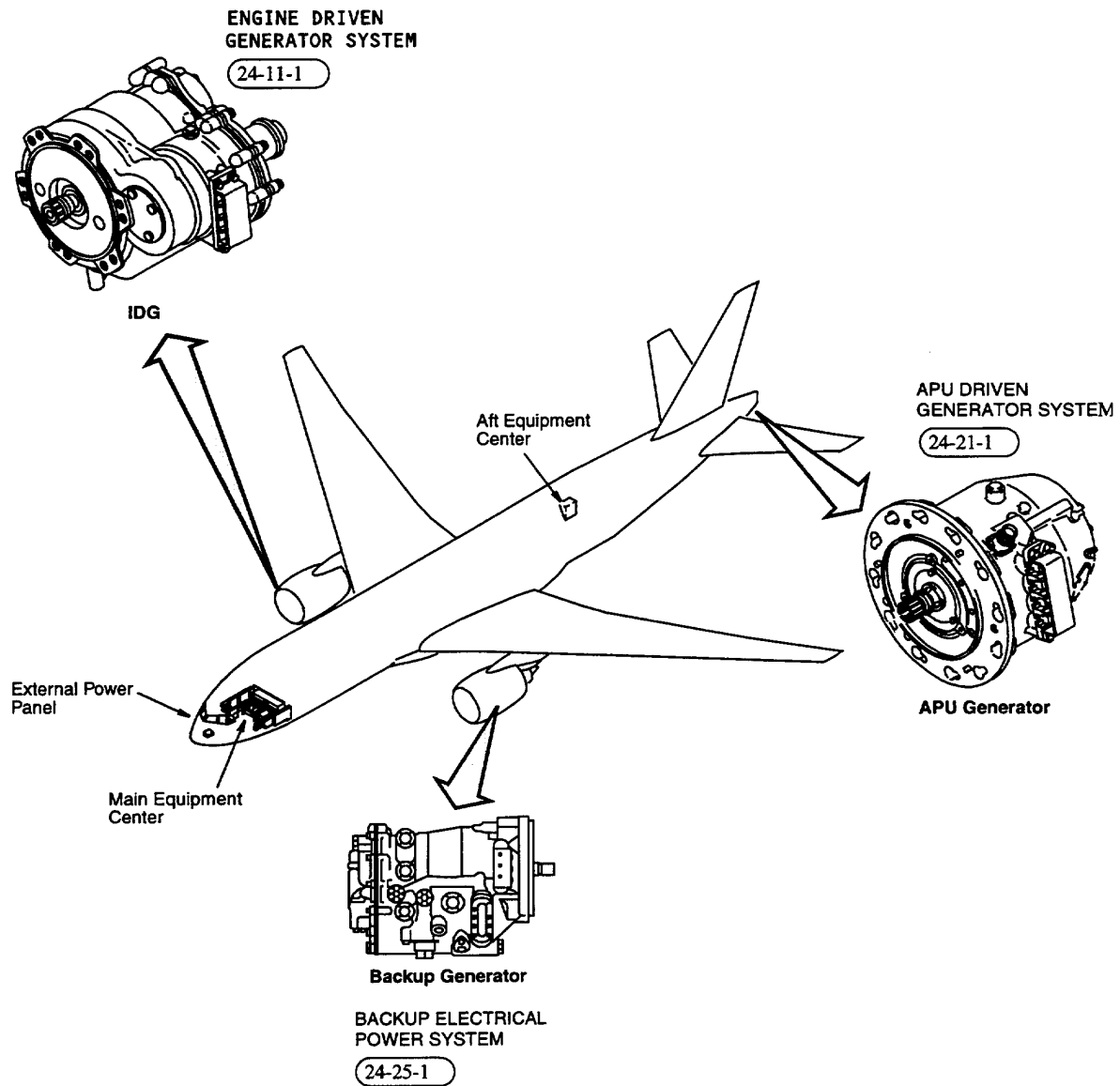
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ATA 24 Contents

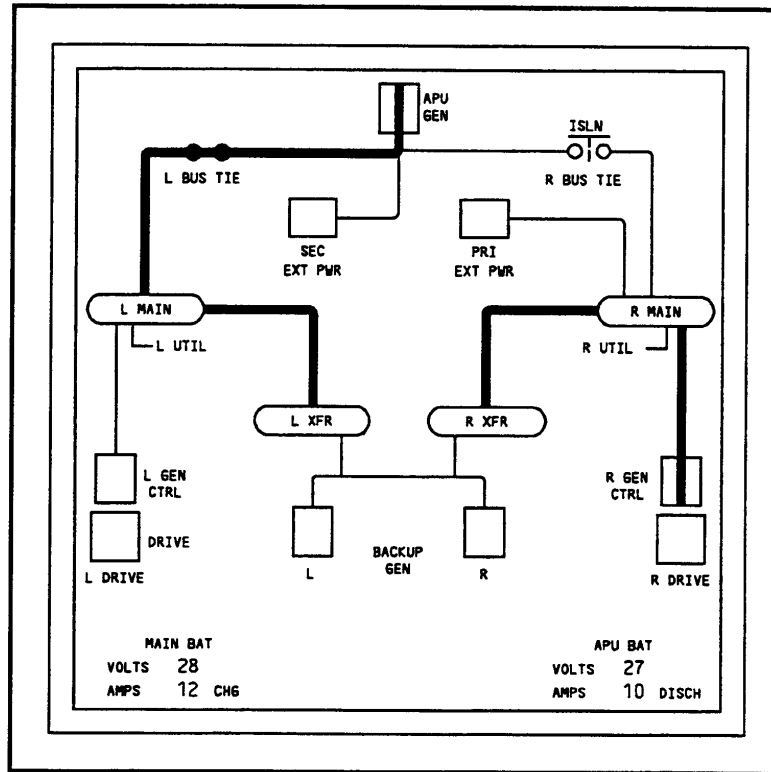
24-00-01	Electrical Synoptic Display	24-5
24-00-02A	IFE / PASS Seats Power Switch Lights (Passenger) (OFF Light)	24-6
24-00-02B	IFE / PASS Seats Power Switch Lights (Passenger) (ON Light)	24-6
24-00-03A	CABIN / UTILITY Power Switch Lights (OFF Light)	24-7
24-00-03B	CABIN / UTILITY Power Switch Lights (ON Light)	24-7
24-09-01	Electrical Load Management System (ELMS) Power Management Channels	24-8
24-11-01A	Engine Driven Generator Systems (IDG, GCB)	24-9
24-11-01B	GEN CTRL Switch Lights (OFF Lights)	24-9
24-11-01C	GEN CTRL Switch Lights (ON Lights)	24-9
24-11-01D	DRIVE DISC Switch DRIVE Lights	24-9
24-11-02	Integrated Drive Generator (IDG) Oil Pressure Indication Systems	24-12
24-21-01A	APU Driven Generator System (Generator, AGCU, APB)	24-13
24-21-01B	APU GEN Switch Lights (OFF Light)	24-13
24-21-01C	APU GEN Switch Lights (ON Lights)	24-13
	RELAYS - AC	24-14
24-22-01A	Ground Handling	24-14
24-22-01B	Ground Service Select	24-14
24-22-01C	Ground Service Transfer	24-14
24-25-01A	Backup Electrical Power System (Backup Generators, Converter and CCBs)	24-16
24-28-03A	BUS TIE Switch Lights (ISLN Lights)	24-18
24-28-03B	BUS TIE Switch Lights (AUTO Lights)	24-18
24-31-01A	APU Battery	24-19
24-31-02A	APU Battery Charger	24-21
24-31-03A	BATTERY Switch Lights (OFF Light)	24-23
24-31-03B	BATTERY Switch Lights (ON Light)	24-23
24-41-01A	External Power Systems	24-24
24-41-01B	AVAIL Lights (Flight Deck)	24-24
24-41-01C	ON Lights (Flight Deck)	24-24
24-41-01D	External Power Connected Lights (External Power Panel)	24-24
24-41-01E	External Power Not In Use Lights (External Power Panel)	24-24
24-41-02	Bus Power Control Unit	24-25
24-61-01	Ground Handling Transformer Rectifier Unit	24-26



ELECTRICAL CONTROL PANEL (P5)



Electrical Power System Components



ELECTRICAL
SYNOPTIC DISPLAY

24-00-1

 DELTA	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-5

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-00-01	Electrical Synoptic Display	Y	1	0 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-00-01	Center Display Control Panel	Electrical Synoptic Display INOP

OPERATIONS NOTE:

If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) may restore the missing data. Synoptic Displays containing missing data may continue to be used to the extent remaining data is useful. Airplane system faults will be annunciated by EICAS alerting and status messages.

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-6

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
24-00-02A	IFE / PASS Seats Power Switch Lights (Passenger) (OFF Light)	Y	1	0	C	
24-00-02B	IFE / PASS Seats Power Switch Lights (Passenger) (ON Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-00-02A	Flight Deck Overhead Panel	IFE / PASS Seats Power Switch OFF Light INOP
24-00-02B	Flight Deck Overhead Panel	IFE / PASS Seats Power Switch ON Light INOP

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
24-00-03A	CABIN / UTILITY Power Switch Lights (OFF Light)	Y		1	0	C
24-00-03B	CABIN / UTILITY Power Switch Lights (ON Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-00-03A	Flight Deck Overhead Panel	CABIN / UTILITY Power Switch OFF Light INOP
24-00-03B	Flight Deck Overhead Panel	CABIN / UTILITY Power Switch ON Light INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-09-01	Electrical Load Management System (ELMS) Power Management Channels	N	6	3	C
					(M) One channel in each ELMS power management panel may be inoperative provided the remaining channel in the associated panel is verified to operate normally PRIOR TO THE FIRST FLIGHT OF THE DAY. (Log Book Entry Required) Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-09-01	Center Display Control Panel	___ ELMS Power Management Channel(s) INOP

OPERATIONS NOTE:

For some ELMS P310 faults which result in the ELMS P310 CHANNEL status message, cabin lighting may remain in the last selected setting. For these faults, changing the cabin lighting intensity at the Cabin System Control Panel or at a Cabin System Area Control Panel is not possible. The regular and supplemental night lights are automatically selected on for these faults.

(M) PROCEDURES

PRIOR TO THE FIRST FLIGHT OF THE DAY - Verify that remaining channel in the associated panel is operating normally.

- Supply electrical power on the airplane.
- Perform manually initiated self-test to verify associated ELMS panel operates normally:
 - Perform test using MAT. Select ONBOARD MAINTENANCE, OTHER FUNCTIONS, SPECIAL FUNCTIONS, 24 P110 / P210 / P310 Power Management Panel, INITIATE P110 / P210 / P310 EU SELF TEST to run test.
- Verify that the following EICAS status messages are not displayed. (If displayed, dispatch is **not** allowed):

ELMS P110 PANEL
ELMS P210 PANEL
ELMS P310 PANEL

- Configure airplane electrical power as required.

NOTE: During P310 panel single channel operation, one half of the refueling valves may be inoperative. Therefore, the time to refuel may be increased

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-11-01A	Engine Driven Generator Systems (IDG, GCB) "DISP.APPR.REQ'D."	N	2	1	B (O)(M) May be inoperative provided: a) Associated IDG is disconnected, b) APU driven generator operates normally and is used to supply buses of the inoperative channel throughout the flight, c) APU and remaining (operative) IDG Log Book history for past 30 days is reviewed and approved by MCC prior to deferral, d) APU oil quantity is serviced to full prior to deferral ONCE EACH FLIGHT DAY (Log Book Entry Required), e) All generator control units, including the APU, are verified to operate normally, f) Backup AC power system is verified to operate normally PRIOR TO EACH DEPARTURE, and g) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized <u>Theater Restrictions May Apply</u> Repetitive Check Required (Yellow Placard)
24-11-01B	GEN CTRL Switch Lights (OFF Lights)	Y	2	0	C
24-11-01C	GEN CTRL Switch Lights (ON Lights)	Y	2	0	C
24-11-01D	DRIVE DISC Switch DRIVE Lights	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-11-01A	Electrical System Panel	___ Engine Driven Generator System INOP
24-11-01B	Electrical System Panel	___ GEN CTRL Switch Light OFF Light(s) INOP
24-11-01C	Electrical System Panel	___ GEN CTRL Switch Light ON Light(s) INOP
24-11-01D	Electrical System Panel	___ DRIVE DISC Switch DRIVE Light(s) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-10

(O) PROCEDURES

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. **PRIOR TO EACH DEPARTURE** - Confirm that the Backup AC electrical power system operates normally.
 - a. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R Status and Advisory EICAS messages are not displayed 30 seconds after both engines have been started.
3. Before takeoff, start the APU, position electrical panel (P11) APU GEN switch ON, and leave APU running and supplying the main AC bus associated with the inoperative IDG throughout the flight.
4. In the unlikely event the backup power system becomes the only remaining AC power source, the flight deck or cabin may become colder than normal. If the flight deck becomes colder than normal, select Left Pack OFF, or if the cabin becomes colder than normal, select Right Pack OFF.

24-11-01A	ENGINE DRIVEN GENERATOR SYSTEMS (IDG, GCB)
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 2.5%. 2. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-11

(M) PROCEDURES

ONCE EACH FLIGHT DAY - Visually check APU oil quantity at the APU oil tank and service to full.

1. Verify that left, right and APU Generator Control Units (GCU) operate normally and disconnect the inoperative IDG.
 - a. Start APU. Wait 60 seconds.
 - b. Position APU GEN switch to ON and confirm OFF light extinguishes.
 - c. Position L and R BUS TIE switches to AUTO and confirm both amber ISLN lights extinguish.
 - d. Position L and R GEN CTRL switches OFF and confirm both amber OFF lights illuminate.
 - e. Select PRI EXT PWR OFF and confirm ON light extinguishes.
 - f. Confirm that the APU generator is providing power to the left and right main AC busses.
 - 1) Use a CDU to select the EICAS Electrical Maintenance page 1/2 on a Multi-Function Display (MFD).
 - 2) Confirm that the only electrical source with a Load readout greater than 0.0 is the APU generator.
 - 3) On Electrical Maintenance page 2/2, confirm that AC power for both L and R Main Busses is ON.
 - 4) On the EICAS display, confirm that the EICAS alerting messages ELEC AC BUS L and ELEC AC BUS R are not displayed.
 - g. Position L BUS TIE switch to ISLN and confirm amber ISLN light illuminates and ELEC AC BUS L caution message is displayed.
 - h. Position L BUS TIE switch to AUTO and confirm amber ISLN light extinguishes and ELEC AC BUS L caution message is not displayed.
 - i. Position R BUS TIE switch to ISLN and confirm amber ISLN light illuminates and ELEC AC BUS R caution message is displayed.
 - j. Position R BUS TIE switch to AUTO and confirm amber ISLN light extinguishes and ELEC AC BUS R caution message is not displayed.

NOTE: The main GCUs are interchangeable with the APU GCU. Also, the Bus Tie Breakers are interchangeable with the Auxiliary Power Breaker and the Generator Control Breakers.

 - k. Position operative GEN CNTRL switch ON.
2. Disconnect the inoperative IDG to minimize the potential for damage.

NOTE: During the authorized repair interval, if the associated engine is operated for more than 50 hours with the IDG disconnected, then the IDG should be removed for shop inspection prior to returning the airplane to service.
3. Confirm IDG oil level is sufficient for IDG operation:
 - a. On Electrical Maintenance page 1/2, confirm the oil level for the associated IDG is NORMAL.

NOTE: Oil level can also be checked by viewing the IDG oil level sightglass.
4. On Electrical Maintenance page 1/2, confirm the oil filter status for the backup generators is NORMAL.
5. Start associated engine.
6. When engine is at idle or higher, push and release the applicable DRIVE DISC switch and confirm on Electrical Panel P5 that associated generator DRIVE light is illuminated.
7. Shut down associated engine.
8. Establish electrical power as required.

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-12

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-11-02	Integrated Drive Generator (IDG) Oil Pressure Indication Systems	N	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-11-02	Electrical System Panel	___ IDG Oil Pressure Indication(s) INOP

MAINTENANCE NOTE:

Some faults may inhibit the EICAS message (ELEC GEN DRIVE L/R) if a low oil pressure condition occurs and cause the Generator Drive Light to be inoperative.

1. When the Generator Drive Light is inoperative, review the Electrical Synoptic page to determine whether the associated EICAS message (ELEC GEN DRIVE L/R) would be available if a low oil pressure condition occurs.
2. With the engines off, review the Electrical Synoptic page to see if the amber DRIVE indication is displayed.
3. If the amber DRIVE indication is not displayed, subsequent annunciation of the ELEC GEN DRIVE advisory message will be inhibited if a low oil pressure condition occurs when the engines are running.

Continued operation with low oil pressure may damage the IDG, however the IDG has a thermal disconnect feature in the event of high oil temperature. Subsequent failure of the IDG would cause ELEC GEN OFF advisory message to be displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-21-01A	APU Driven Generator System (Generator, AGCU, APB) "DISP.APPR.REQ'D."	Y	1	0	C
					(O)(M) May be inoperative provided: a) Procedures do not require use of the APU for electrical power, b) Auxiliary Power Breaker (APB) remains open, c) Both engine driven generator systems operate normally, d) Backup AC power system is verified to operate normally PRIOR TO EACH DEPARTURE, and e) Flight remains within 180 minutes of landing at a suitable airport. NOTE: APU may be used as a pneumatic source. <u>Polar Operations</u> Not Authorized Theater Restrictions May Apply Repetitive Check Required (Yellow Placard)
24-21-01B	APU GEN Switch Lights (OFF Light)	Y	1	0	C
24-21-01C	APU GEN Switch Lights (ON Lights)	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-21-01A	Electrical System Panel	APU Generator INOP
24-21-01B	Electrical System Panel	___ APU GEN Switch Light OFF Light INOP
24-21-01C	Electrical System Panel	___ APU GEN Switch Light ON Light INOP

(O) PROCEDURES

- Dispatch is not allowed if the APU is required by other procedures. MEL dispatch procedures for the following inoperative equipment require APU electrical availability.

MEL ITEM NO.	ASSOCIATED STATUS MSG
24-11-01A	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01A	ELEC BACKUP GEN L or R ELEC BACKUP SYS

- The flight must remain within 180 minutes of landing at a suitable airport.
- PRIOR TO EACH DEPARTURE** - Verify that the Backup AC electrical power system operates normally.
 - Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

(M) PROCEDURES

Position Electrical Panel (P5) APU Generator switch OFF.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
RELAYS - AC					
24-22-01A	Ground Handling	N	1	0	C (M) May be inoperative provided the equipment on the Ground Handling Bus is deactivated PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)
24-22-01B	Ground Service Select	N	1	0	C (M) Control of the relay may be inoperative provided the relay remains in the engine running position.
24-22-01C	Ground Service Transfer	N	1	0	C (M) Control of the relay may be inoperative provided the relay remains in the engine running position.

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-22-01A	Electrical System Panel	A.C. Ground Handling Relay INOP
24-22-01B	Electrical System Panel	A.C. Ground Service Select Relay INOP
24-22-01C	Electrical System Panel	A.C. Ground Service Transfer Relay INOP

(M) PROCEDURES

24-22-01A

PRIOR TO EACH DEPARTURE - Deactivate the equipment on the Ground Handling Bus by pulling and securing the following P300 panel circuit breakers:

CARGO HDLG FWD COMPT L	CARGO HDLG AFT COMPT L	GND HDLG AC BUS DISTR P320
CARGO HDLG FWD COMPT R	CARGO HDLG AFT COMPT R	

NOTE: Some aspects of the ground handling bus may be operative depending upon the failure mode of the relay. If the ground handling bus can be powered by one of the power sources (APU or Primary External Power) and not the other, it is acceptable to close the circuit breakers in the previous list on the ground so as to allow use of equipment powered by the ground handling bus.

PRIOR TO EACH DEPARTURE - Ensure the circuit breakers are again pulled and secured.

24-22-01B, 24-22-01C

NOTE: An inoperative Ground Service Select Relay or Ground Service Transfer Relay that is failed to the engine running position is not annunciated by any EICAS messages, provided the right main AC bus is powered.

1. Verify GROUND SERVICE switch at 1L flight attendant panel is off.
2. Supply electrical power (APU or external).

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-15

3. Start one engine.
4. Ensure GEN CTRL switch for operating engine is ON.
5. If left engine is started, ensure L and R BUS TIE switches are both positioned to AUTO.
6. If APU is running, position APU GEN control switch OFF or shut down the APU.
7. Disconnect primary external power if connected. Power cord **MUST** be removed from receptacle.
8. Confirm the R Main AC Bus is powered. An unpowered R Main AC Bus is indicated by display of the EICAS alerting message ELEC AC BUS R.
9. Review EICAS electrical maintenance page 2/2 to confirm that the Ground Service Bus is powered. At the bottom of the page, all GND SVC readouts must be on.
10. Re-establish APU or external power.
11. Shut down engine.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-25-01A	Backup Electrical Power System (Backup Generators, Converter and CCBs)	Y	1	0	C (M) May be inoperative provided: a) Both engine driven generators operate normally, and b) APU generator operates normally.
24-25-01B	Backup Electrical Power System (Backup Generators, Converter and CCBs)	N	1	0	C (M) May be inoperative provided: a) One backup generator is removed and an appropriate dispatch kit is installed, b) Both engine driven generators operate normally, and c) APU generator operates normally.
24-25-01C	BACKUP GEN Switch Lights (OFF Lights)	Y	2	0	C
24-25-01D	BACKUP GEN Switch Lights (ON Lights)	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-25-01A	Electrical System Panel	Backup Electrical Power System INOP
24-25-01B	Electrical System Panel	Backup Electrical Power System INOP
24-25-01C	Electrical System Panel	___BACKUP GEN Switch Light OFF Light INOP
24-25-01D	Electrical System Panel	___BACKUP GEN Switch Light ON Light INOP

NOTE 1: The Electrical Synoptic Display may have incomplete or missing information.

NOTE 2: Although not required, it is suggested that the BUG be removed and the dispatch kit installed to prevent further damage if the shaft is sheared; however, this is an operational decision.

NOTE 3: The net effect of backup generator removal (if removed) on Weight and Balance of the aircraft is negligible.

NOTE 4: For ELEC BACKUP SYS advisory message displayed after engine start, confirm FLIGHT CONTROL SYS status message is not displayed.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-17

(M) PROCEDURES

24-25-01A

The following maintenance procedure is optional and is not required for dispatch; however, it may prevent damage to a backup generator with a faulty oil system.

1. Confirm the inoperative backup generator's oil system status when associated shaft is not sheared.

NOTE: A sheared generator shaft is indicated by associated maintenance message 24-46000 or 24-46010.

- a. Confirm oil level status and oil filter status indicate NORMAL using Electrical Maintenance page 1/2.
- b. Confirm associated 24-46080 or 24-46090 maintenance message for low oil pressure is not displayed.

24-25-01B

Remove inoperative backup generator and install associated dispatch kit.

1. Remove the backup generator (AMM 24-25-01/401).

NOTE: The PFCS INTERFACE status message will be displayed and must also be [deferred per MEL 27-02-04](#).

2. Remove the union (if installed) and check valve from the oil-in port on the removed backup generator.
3. Install dispatch kit (AMM 24-25-16/401):
 - a. For GE: Kit J24013
 - b. For RR: Kit J24011

NUMBER INSTALLED					NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
24-28-03A	BUS TIE Switch Lights (ISLN Lights)	Y	2	0	C		
24-28-03B	BUS TIE Switch Lights (AUTO Lights)	Y	2	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-28-03A	Electrical System Panel	___ BUS TIE Switch Light(s) ISLN Light INOP
24-28-03B	Electrical System Panel	___ BUS TIE Switch Light(s) AUTO Light INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-31-01A	APU Battery "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided APU is started before departure and is operated for the entire flight.
24-31-01B	APU Battery DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Other procedures do not require use of the APU, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized
24-31-01C	APU Battery DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative removed provided: a) APU Battery Charger is deactivated, b) Other procedures do not require use of the APU, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-31-01A	Electrical System Panel	APU Battery INOP
24-31-01B	Electrical System Panel	APU Battery INOP
24-31-01C	Electrical System Panel	APU Battery INOP/REMOVED

(O) PROCEDURES

24-31-01A

24-31-01A	APU BATTERY
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 2.5%. 2. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

CONTINUED NEXT PAGE

24-31-01B, 24-31-01C

1. Dispatch under this MEL item is **not** allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

2. For dispatch when the APU cannot be used and its use is not required by other procedures:
 - a. The flight must remain within 180 minutes of landing at a suitable airport.
 - b. Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

24-31-01C	APU BATTERY – REMOVED
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Use applicable OEW correction for “APU Battery Removed” in ALM – Weight and Balance Section.

(M) PROCEDURES

24-31-01C

1. Deactivate APU Battery Charger (AMM 24-00-00/901).
 - a. Pull and secure P320 panel APU BATTERY CHARGER POWER circuit breaker.
 - b. Remove APU Battery.
 - c. Cap and stow any exposed or loose connections.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-31-02A	APU Battery Charger "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) APU battery charger is deactivated, and b) APU is started before departure and is operated for the entire flight.
24-31-02B	APU Battery Charger "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) APU battery charger is deactivated, b) Other procedures do not require use of the APU, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-31-02A	Electrical System Panel	APU Battery Charger INOP
24-31-02B	Electrical System Panel	APU Battery Charger INOP

(O) PROCEDURES

24-31-02A

24-31-02A	APU BATTERY CHARGER
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 2.5%. 2. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

CONTINUED NEXT PAGE

24-31-02B

1. Dispatch under this MEL item is **not** allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

2. For dispatch when the APU cannot be used and its use is not required by other procedures:
 - a. The flight must remain within 180 minutes of landing at a suitable airport.
 - b. Verify that the Backup AC electrical power system operates normally.
 - c. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

(M) PROCEDURES

24-31-02A, 24-31-02B

Deactivate APU Battery Charger by pulling and securing P320 panel APU BATTERY CHARGER POWER circuit breaker.

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-23

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
24-31-03A	BATTERY Switch Lights (OFF Light)	Y	1	0	C	
24-31-03B	BATTERY Switch Lights (ON Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-31-03A	Electrical System Panel	BATTERY Switch Light(s) OFF Light INOP
24-31-03B	Electrical System Panel	BATTERY Switch Light(s) ON Light INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
24-41-01A	External Power Systems “DISP.APPR.REQ'D.”	Y	2	0	C	
24-41-01B	AVAIL Lights (Flight Deck)	Y	2	0	C	(O) Communicate with ground crew using hand signals, flight deck to ground communication systems or other previously agreed upon means to compensate for inoperative lights or system(s).
24-41-01C	ON Lights (Flight Deck)	Y	2	0	C	(O) Communicate with ground crew using hand signals, flight deck to ground communication systems or other previously agreed upon means to compensate for inoperative lights or system(s).
24-41-01D	External Power Connected Lights (External Power Panel)	Y	2	0	C	(O) Communicate with ground crew using hand signals, flight deck to ground communication systems or other previously agreed upon means to compensate for inoperative lights or system(s).
24-41-01E	External Power Not In Use Lights (External Power Panel)	Y	2	0	C	(O) Communicate with ground crew using hand signals, flight deck to ground communication systems or other previously agreed upon means to compensate for inoperative lights or system(s).

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-41-01A	Electrical System Panel	___ External Power System(s) INOP
24-41-01B	Electrical System Panel	AVAIL Lights (Flight Deck) INOP
24-41-01C	Electrical System Panel	ON Lights (Flight Deck) INOP
24-41-01D	Electrical System Panel	External Power Connected Lights (External Power Panel) INOP
24-41-01E	Electrical System Panel	External Power Not In Use Lights (External Power Panel) INOP

MAINTENANCE NOTE:

Electrical loads may be shed during ground operations when one (or more) external power system is inoperative. For example, if a single external power source is used for ground operations, electrical power may not be available for any of the galley complexes.

(O) PROCEDURES

24-41-01A, 24-41-01B, 24-41-01C, 24-41-01D, 24-41-01E

Refer to REMARKS or EXCEPTIONS sections above.

	B777 Minimum Equipment List	ATA 24 Electrical Power	R14 05/09/16 Page 24-25

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
24-41-02	Bus Power Control Unit	N	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-41-02	Electrical System Panel	Bus Power Control Unit INOP

MAINTENANCE NOTE:

Electrical power for the Ground Handling and Ground Service Busses will not be available.

	B777 Minimum Equipment List	ATA 22 Autoflight	R14 05/09/16 Page 24-26

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
24-61-01	Ground Handling Transformer Rectifier Unit	N		1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
24-61-01	Electrical System Panel	Ground Handling Transformer Rectifier Unit INOP

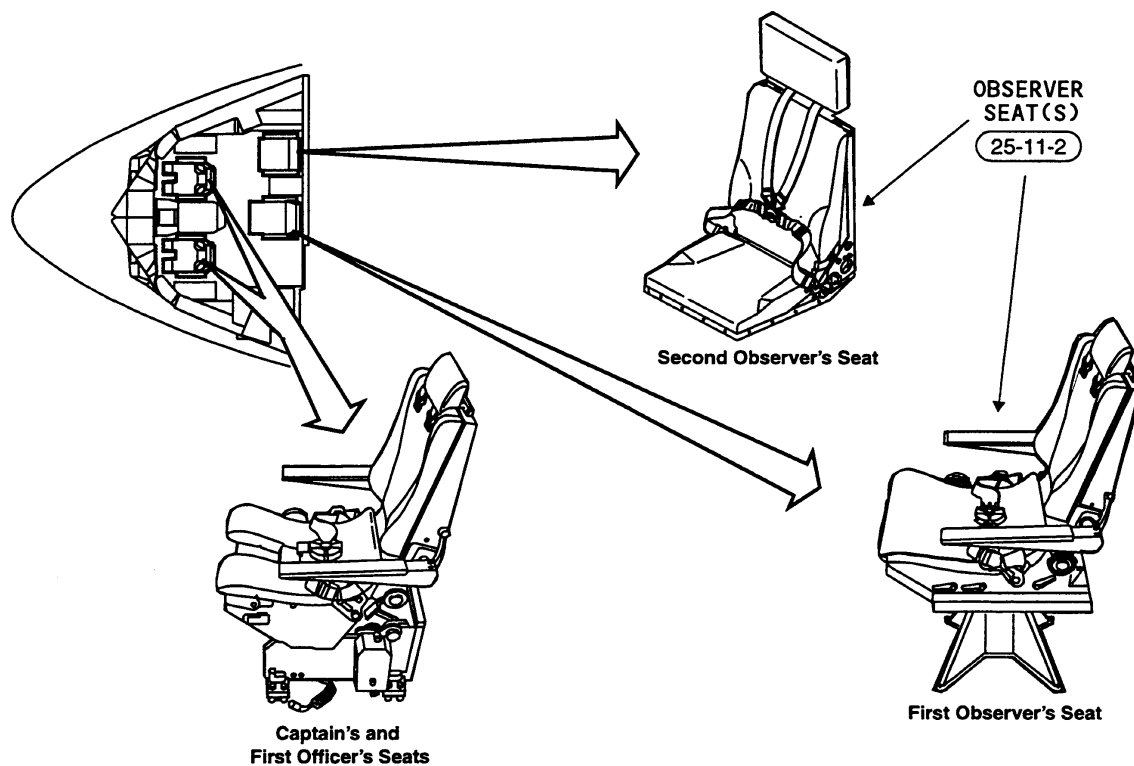
 DELTA	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-1

ATA 25 Contents

	FLIGHT CREW SEATS.....	25-4
25-11-01A	Power Adjustment Systems	25-4
25-11-01B	Recline Manual Adjustment	25-4
25-11-01C	Vertical Manual Adjustment	25-4
25-11-01D	Armrests	25-4
25-11-01E	Lumbar / Thigh Supports Manual Adjustment.....	25-4
25-11-01F	Headrests	25-4
25-11-02A	First Observer's Seat (Including Associated Equipment).....	25-5
25-11-02D	Second Observer's Seat (Including Associated Equipment)	25-6
	FLOTATION EQUIPMENT	25-7
25-18-01A	Life Vests (Passenger Seats except Lie-Flat)	25-7
25-18-01C	Spare Life Vests	25-7
25-18-01D	Infant Life Vests (If Installed).....	25-7
25-20-01	Non-essential Equipment and Furnishings (NEF).....	25-8
	FLIGHT ATTENDANT SEATS (SINGLE OR DUAL POSITION)	25-9
25-25-01A	Required Flight Attendant Seats	25-9
25-25-01C	Excess Flight Attendant Seats	25-10
25-25-02A	Passenger Seats	25-11
25-25-02B	Recline Mechanism (Non Flat-Bed Seats)	25-11
25-25-02D	Recline/Leg Rest Mechanisms (Flat-Bed Seats)	25-11
25-25-02E	"Takeoff, Taxi and Landing" (TTL) Position Light (Flat-Bed Seats)	25-11
25-25-02F	Underseat Baggage Restraining Bar	25-12
25-25-02G	Arm Rest With Recline Mechanism.....	25-12
25-25-02H	Arm Rest Without Recline Mecahnism.....	25-12
	CREW REST SEATS.....	25-17
25-25-04A	Crew Rest Seats	25-17
25-25-04B	Crew Rest Seat (Recline, Leg Rest and Foot Rest (Class 3 Seats)	25-17
25-25-04D	Recline Mechanism	25-17
25-25-04F	Arm Rest	25-17
25-28-01A	Storage Bin(s) / Cabin, Galley and Lavatory Storage Compartments / Closets	25-20
25-28-01C	Multi Latch / Quarter Turn Lug Installations (Includes Gold Latches)	25-20
25-28-01D	Storage Compartment Key Locks	25-20
25-29-03A	Overhead Flight Crew Rest Door	25-23
25-29-03B	Overhead Flight Attendant Rest Door	25-23
25-29-03C	Overhead Flight Crew / Attendant Rest Door Lock.....	25-23
	FLIGHT CREW / ATTENDANT RESTS.....	25-25
25-29-04A	Flight Crew Rest (OFCR)	25-25
25-29-04B	Flight Crew Rest (Gasper Vents / Outlets).....	25-25
25-29-04C	Flight Crew Rest (Illuminated Fasten Seat Belt Signs)	25-25
25-29-04D	Flight Crew Rest (Lap / Seat Belts)	25-25
25-29-04E	Flight Crew Rest (Lighting).....	25-26
25-29-04F	Flight Crew Rest (Mattresses).....	25-26
25-29-04G	Flight Crew Rest (No Smoking Placard(s))	25-26
25-29-04H	Flight Crew Rest (Oxygen Masks)	25-26
25-29-04I	Flight Crew Rest (Portable Oxygen)	25-27
25-29-04J	Flight Crew Rest (Privacy / Sleeping Area).....	25-27

 DELTA	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-2

25-29-04K	Flight Crew Rest (Temperature Control)	25-27
25-29-04L	Flight Attendant Rest (OFAR)	25-27
25-30-01	Galley/Cabin Waste Container Access Doors / Covers	25-30
25-41-01	Exterior Lavatory Door Ashtrays	25-31
25-41-02	Lavatory Waste Container Flapper / Access Doors	25-32
25-52-01	Lower Cargo Compartment Lining (Forward and Aft)	25-33
25-53-01	Cargo Handling Systems	25-34
25-53-02A	Cargo Restraint Systems	25-35
25-63-01	Emergency Evacuation Signal System	25-43
25-63-02	FASTEN SEAT BELT WHILE SEATED Placards	25-44
	PORTABLE EMERGENCY LOCATOR TRANSMITTER (ELT)	25-45
25-63-03A	Portable Emergency Locator Transmitter (ELT) (-200ER)	25-45
25-64-01	Megaphones (Passenger)	25-46
25-64-02A	Flashlight Holder Assemblies (Including Flashlight)	25-47
	EMERGENCY MEDICAL EQUIPMENT	25-48
25-64-03A	First Aid Kits	25-48
25-64-03B	First Aid Kit Seals	25-48
25-64-03C	AED (Automatic External Defibrillator)	25-48
25-64-03D	AED Bracket / Lock	25-48
25-64-03E	EEMK (Enhanced Emergency Medical Kit)	25-48
25-64-03G	Red Pouch (Medical Accessory Pouch)	25-48
25-99-01A	PED Mount	25-50



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
FLIGHT CREW SEATS						
25-11-01A	Power Adjustment Systems	Y	2	0	C	(M) May be inoperative deactivated.
25-11-01B	Recline Manual Adjustment “Contact MCC”	N	2	0	A	(M) May be inoperative provided: a) Seat is secured in an upright position acceptable to the affected crewmember, and b) Repairs are made within two (2) flight days.
25-11-01C	Vertical Manual Adjustment “Contact MCC”	Y	2	0	A	May be inoperative provided: a) Seat is acceptable to crewmember, b) Repairs are made within two flight days.
25-11-01D	Armrests “Contact MCC”	N	4	0	B	(M) May be inoperative provided: a) Affected armrest is stowed in the retracted position or removed, and b) Seat is acceptable to the affected crewmember.
25-11-01E	Lumbar / Thigh Supports Manual Adjustment	Y	4	0	C	May be inoperative provided seat is acceptable to the affected crewmember.
25-11-01F	Headrests	Y	2	0	C	May be inoperative provided seat is acceptable to the affected crewmember.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-11-01A	Logbook	___ Seat Power Adjustment INOP
25-11-01B	Logbook	___ Seat Recline Manual Adjustment INOP
25-11-01C	Logbook	___ Seat Vertical Manual Adjustment INOP
25-11-01D	Logbook	___ Seat Armrest Manual INOP
25-11-01E	Logbook	___ Seat Lumbar / Thigh Manual Adjustment INOP
25-11-01F	Logbook	___ Seat Headrest INOP

(M) PROCEDURES

25-11-01A

Deactivate the inoperative flight crew seat power adjustment function.

- For Captain's seat, pull and secure P110 panel CAPT SEAT circuit breaker.
- For First Officer's seat, pull and secure P210 panel F/O SEAT circuit breaker.

25-11-01B

Secure affected crewmember seat in the upright position.

25-11-01D

Secure affected crewmember seat armrest in the retracted position or remove.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-11-02A	First Observer's Seat (Including Associated Equipment) "DISP.APPR.REQ'D."	Y	1	0	A May be inoperative provided: a) A passenger seat in the passenger cabin is made available to an FAA inspector for the performance of official duties, and b) Repairs are made within two (2) flight days. NOTE 1: These provisos are intended to provide for occupancy of the above seats by an FAA inspector when the minimum safety equipment (oxygen and safety belt) 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 an observer seat(s).
25-11-02B	First Observer's Seat (Including Associated Equipment) "DISP.APPR.REQ'D."	Y	1	0	A May be inoperative provided: a) The first observer seat is acceptable to the FAA inspector for the performance of official duties, b) Required minimum safety equipment (safety belt and oxygen) is available, and c) Repairs are made within two (2) flight days. NOTE 1: These provisos are intended to provide for occupancy of the above seats by an FAA inspector when the minimum safety equipment (oxygen and safety belt) 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 an observer seat(s).

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-11-02C	First Observer's Seat (Including Associated Equipment) "DISP.APPR.REQ'D."	Y	1	0	A May be inoperative provided: a) Second observer seat is available, and acceptable to an FAA inspector for the performance of official duties, and b) Repairs are made within two (2) flight days. NOTE 1: These provisos are intended to provide for occupancy of the above seats by an FAA inspector when the minimum safety equipment (oxygen and safety belt) 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 an observer seat(s).
25-11-02D	Second Observer's Seat (Including Associated Equipment)	Y	1	0	C NOTE: The Pilot-in-Command will determine if the minimum safety equipment is functional for other persons authorized to occupy an observer seat(s).

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-11-02A	Logbook	First Observer Seat INOP
25-11-02B	Logbook	First Observer Seat INOP
25-11-02C	Logbook	First Observer Seat INOP
25-11-02D	Logbook	Second Observer Seat INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD		REPAIR CATEGORY				
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
FLOTATION EQUIPMENT						
25-18-01A	Life Vests (Passenger Seats except Lie-Flat) “DISP.APPR.REQ'D.”	Y	-	-	D	May be inoperative or missing provided extended overwater operations are not conducted.
25-18-01B	Life Vests “DISP.APPR.REQ'D.”	Y	-	-	D	May be inoperative or missing provided associated seat is blocked off, placarded DO NOT OCCUPY and deferred per MEL item 25-25-02A , 25-25-01 or 25-11-02 as appropriate.
25-18-01C	Spare Life Vests	Y	-	-	D	May be inoperative or missing.
25-18-01D	Infant Life Vests (If Installed)	Y	-	-	D	(O) May be inoperative or missing.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-18-01A	Logbook	___ Life Vest(s) INOP / Missing
25-18-01B	Logbook	___ Life Vest(s) INOP / Missing
25-18-01C	Logbook	___ Spare Life Vest(s) INOP / Missing
25-18-01D	Logbook	___ Infant Life Vest(s) INOP / Missing

(O) PROCEDURES

25-18-01D

On aircraft equipped with single cell adult life vests, an infant life vest is normally available for each occupant under 35 pounds for extended overwater operations. In the event that there are not enough infant life vests onboard for the extended overwater operation and all attempts have been made to locate and board additional infant life vests, please notify an Airport Customer Service (ACS) Agent so that they can initialize their passenger handling procedures.

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-8

NUMBER INSTALLED		NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS	
25-20-01	Non-essential Equipment and Furnishings (NEF)	May be inoperative, damaged or missing provided that item(s) is deferred in accordance with the NEF deferral program. NOTE 1: Do not use this MEL item to defer the discrepancy. Defer the discrepancy under the NEF program per TOPP 40-40-08. NOTE 2: Exterior lavatory door ash trays are not considered NEF items.	

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	FLIGHT ATTENDANT SEATS (SINGLE OR DUAL POSITION)				
25-25-01A	Required Flight Attendant Seats (Refer to In-Flight Service Onboard Manual for required seat locations) "DISP.APPR.REQ'D."	Y	8	7	B (O)(M) 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 excess flight attendant seat or passenger seat which is most accessible to inoperative seat(s), so as to most affectively perform assigned duties, c) Alternate procedures are used for displaced Flight Attendant(s) (Ref: In-flight Service Onboard Manual), d) Folding type seat stows automatically or is secured in retracted position, and is checked ONCE EACH FLIGHT DAY (LOG BOOK ENTRY REQUIRED), and e) Passenger seat assigned to Flight Attendant(s) 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: If one side of a dual seat assembly is inoperative and a flight attendant is displaced to adjacent seat, the adjacent seat must operate normally. Repetitive Check Required (Yellow Placard)

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	FLIGHT ATTENDANT SEATS (SINGLE OR DUAL POSITION) (CONTINUED)				
25-25-01B	Required Flight Attendant Seats (Refer to In-Flight Service Onboard Manual for required seat locations) "DISP.APPR.REQ'D."	Y	-	0	C (O)(M) May be inoperative provided: a) No passengers are carried, b) A maximum of 19 persons are carried as authorized by 14 CFR for non-passenger carrying operations, c) Folding type seat stows automatically or is secured in the retracted position and is checked ONCE EACH FLIGHT DAY (LOG BOOK ENTRY REQUIRED), and d) Affected seat position or seat assembly is not occupied, and e) Alternate procedures are used. 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. Repetitive Check Required (Yellow Placard)
25-25-01C	Excess Flight Attendant Seats "DISP.APPR.REQ'D."	Y	-	-	C (M) May be inoperative provided: a) Affected seat position or seat assembly is not occupied, and is checked ONCE EACH FLIGHT DAY (LOG BOOK ENTRY REQUIRED), and b) Folding type seat stows automatically or is secured in 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. Repetitive Check Required (Yellow Placard)

MEL ITEM	MCO TAB LOCATION	MCO PLACARD TEXT
25-25-01A	Logbook	___ Flight Attendant Seat(s) INOP
25-25-01B	Logbook	___ Flight Attendant Seat(s) INOP
25-25-01C	Logbook	___ Flight Attendant Seat(s) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	TR 16-01 Page 3 06/21/16

(O) PROCEDURES

25-25-01A

1. The flight attendant assigned to the affected seat position must occupy either a passenger seat or an excess flight attendant seat, whichever is most accessible to the inoperative seat. The flight attendant must be able to reach the assigned emergency exit in essentially the same time as from the normally assigned seat, i.e., a 2 or 3 second time difference is considered "essentially the same time".
2. Refer to In-Flight Service Onboard Manual Section 6.

25-25-01B

1. A maximum of 19 persons authorized by 14 CFR 121.583 may be carried.
2. Captain will brief persons authorized to be carried on flight about safety and evacuation procedures.

(M) PROCEDURES

25-25-01A, 25-25-01B, 25-25-01C

Ensure the Flight Attendant Seat automatically retracts without assistance to the fully stowed position.

If the seat will not automatically retract without assistance to the fully stowed position, secure the inoperative seat in the fully stowed position using the following procedure (*Maintenance is Required and Flight Crew May Not Placard*):

1. Secure seat in the retracted (fully stowed) position using high visibility tape.
2. Placard the seat using high visibility tape or a section of 2 inch wide masking tape with the words "UNSERVICEABLE - DO NOT USE" printed legibly in 1 inch black letters.

ONCE EACH FLIGHT DAY:

Ensure seat has remained in fully stowed position. If seat has been secured in the fully stowed position with tape, ensure tape is in good condition.

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	TR 16-01 Page 4 06/21/16

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NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PASSENGER SEATS (INCLUDING LISTED EQUIPMENT)					
25-25-02A	Passenger Seats "DISP.APPR.REQ'D."	Y	-	0	C (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 airplane aisle, and c) Affected seat(s) is blocked and placarded DO NOT OCCUPY. NOTE 1: A seat with an inoperative or missing 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 seats behind and/or adjacent to inoperative seat(s). NOTE 4: Seats with an inoperative or broken seat track attach fitting or seat frame damage affecting the integrity of the seat track attach fittings, may not remain installed for dispatch using this MEL. Contact MCC. NOTE 5: MCC must contact Flight Control for coordination with ROC to remove the seat from inventory until repaired.
25-25-02B	Recline Mechanism (Non Flat-Bed Seats) "DISP.APPR.REQ'D."	Y	-	0	C May be inoperative and seat occupied provided seat back is immovable in the full upright position.
25-25-02C	Recline Mechanism (Non Flat-Bed Seats) "DISP.APPR.REQ'D."	N	-	0	C (M) May be inoperative and seat occupied provided seat is secured in the full up-right position.
25-25-02D	Recline/Leg Rest Mechanisms (Flat-Bed Seats) "DISP.APPR.REQ'D."	Y	-	0	C (M) May be inoperative and seat occupied provided: a) Seat power is deactivated, and b) Seat is secured in the up-right position.
25-25-02E	"Takeoff, Taxi and Landing" (TTL) Position Light (Flat-Bed Seats) "DISP.APPR.REQ'D."	Y	-	0	C (M) May be inoperative and seat occupied provided: a) Seat power is deactivated, and b) Seat is secured in the up-right position.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PASSENGER SEATS (INCLUDING LISTED EQUIPMENT) (CONTINUED)					
25-25-02F	Underseat Baggage Restraining Bar	Y	-	0	C (O)(M) May be inoperative provided: a) Baggage is not stowed under seat with inoperative restraining bar, b) Associated seat is placarded DO NOT STOW BAGGAGE UNDER THIS SEAT, and c) Cabin Crew is alerted of inoperative restraining bar.
25-25-02G	Arm Rest With Recline Mechanism "DISP.APPR.REQ'D."	N	-	0	C (M) May be inoperative or missing and seat occupied provided: a) Armrest does not block an Emergency Exit, b) Armrest does not restrict any passenger from access to the main airplane aisle, and c) If armrest is missing, seat is secured in the full upright position.
25-25-02H	Arm Rest Without Recline Mechanism "DISP.APPR.REQ'D."	Y	-	0	C 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 airplane aisle.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-25-02A	Logbook	Passenger / Crew Rest Seat(s) ___ INOP
25-25-02B	Logbook	Seat(s) ___ Recline INOP
25-25-02C	Logbook	Seat(s) ___ Recline INOP
25-25-02D	Logbook	Flat-Bed Seat(s) ___ Recline
25-25-02E	Logbook	Flat-Bed Seat ___ TTL Light INOP
25-25-02F	Logbook	Seat ___ Underseat Baggage Restraining Bar(s) INOP
25-25-02G	Logbook	Seat ___ Arm Rest(s) INOP/Missing
25-25-02H	Logbook	Seat ___ Arm Rest(s) INOP/Missing

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-13

(O) PROCEDURES

25-25-02F

For an inoperative UNDERSEAT BAGGAGE RESTRAINING BAR, ensure cabin crew is notified of the inoperative restraining bar and that baggage is not to be placed under the associated seat.

(M) PROCEDURES

25-25-02A

Flat-Bed Seats

1. Use manual override levers to move seat to upright position if possible for appearance. Seat may be deferred in flat position if necessary.
2. Install Seat INOP Block-Out Cover part number 25-5136-001 per ERA 10-485792-14MA.
3. In the event that the Seat INOP Block-Out Cover is not available:
 - a. Placard seat "DO NOT OCCUPY" by installing a Seat INOP Block-Out Placard part number 11-0972-001 per ERA 10-485792-14MA. If Seat INOP Block-Out Placard is not available it is acceptable to apply one or two sections of 2 inch wide masking tape as required over the head rest area with the words "UNSERVICEABLE – DO NOT USE" printed neatly and legibly in 1.5 inch black or red letters.
 - b. Contact MCC to schedule the installation of a Seat INOP Block-Out Cover at the next maintenance station the cover is available.

All other seats

1. Install Seat INOP Block-Out Cover part number 25-5136-001 per ERA 10-485792-14MA.
 - a. If the seatback is loose or blocks access to an Emergency Exit secure upright with a Seat INOP Block-Out Cover.
 - b. If seat is stuck in the reclined position, access is restricted to the row aft of the affected seat. The seat row aft of the affected seat must not contain an Emergency Exit.
 - a) If affected seat is in a group of seats adjacent to the airplane sidewall, the seat aft of the affected seat and seats outboard from that seat must not be occupied. Install Seat INOP Block-Out Cover to seat aft of the affected seat and seats outboard from that seat.
 - b) If affected seat is in a group of seats between two aisles, block off the row of seats aft of the inoperative seat and install Seat INOP Block-Out Covers to entire row:

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-14

2. In the event that the Seat INOP Block-Out Cover is not available the seat may be made inoperative per one of the following provisions provided the MCC is contacted to schedule the installation of a Seat INOP Block-Out Cover at the next maintenance station the cover is available:
 - a. If seat back is loose, secure seat in the breakover position with a strap or rope such that it cannot move during flight. Maintain a pleasant and professional appearance as much as possible. Affected seat row must not contain an Emergency Exit.
 - 1) If affected seat is in a group of seats adjacent to the airplane sidewall, seats outboard of affected seat must not be occupied. Placard seats outboard of affect seat: "DO NOT OCCUPY".
 - 2) If the affected seat is in a group of seats between two aisles, block off the row and placard entire row: "DO NOT OCCUPY".
 - b. If seat is stuck in the reclined position, access is restricted to the row aft of the affected seat. The seat row aft of the affected seat must not contain an Emergency Exit.
 - 1) If affected seat is in a group of seats adjacent to the airplane sidewall, the seat aft of the affected seat and seats outboard from that seat must not be occupied. Placard seat aft of the affected seat and seats outboard from that seat: "DO NOT OCCUPY".
 - 2) If affected seat is in a group of seats between two aisles, block off the row of seats aft of the inoperative seat and placard entire row: "DO NOT OCCUPY".
 - c. When instructed to placard seat "DO NOT OCCUPY", use a Seat INOP Block-Out Placard part number 11-0972-001 per ERA 10-485792-14MA. If Seat INOP Block-Out Placard is not available it is acceptable to apply one or two sections of 2 inch wide masking tape as required over the head rest area with the words "UNSERVICEABLE – DO NOT USE" printed neatly and legibly in 1.5 inch black or red letters.

25-25-02C

Lock seat cylinder or disconnect control cable from seat cylinder so seat is in upright position.

CONTINUED NEXT PAGE

25-25-02D

To secure the seat in the upright position and deactivate power:

1. Remove the seat cushion. The manual override levers are located on the seat pan assembly.
2. Operate the manual override levers and return the seat to the "taxi, take-off and landing" (TTL) position.
NOTE: When the seat is locked into the TTL position the TTL light will come on.
3. If the TTL light is on, proceed to step 4. If the TTL light did not come on perform the following procedures to make sure the latches are locked:
 - a. Pull the recline lever and pull the front of the seat pan towards the legrest. If the seatpan does not move, then the latches are locked.
 - b. If the seatpan does move, then push the seat pan fully home and repeat the pull until the latches are locked.
4. Use the manual override levers to raise the leg rest and access the actuation system power switch located underneath the leg rest and mounted to the front of the seat frame.
5. Set the power switch to off.
6. Stow the leg rest and replace seat bottom cushion.



25-25-02E

To secure the seat in the upright position and deactivate power:

1. Remove the seat bottom cushion. The manual override levers are located on the seat pan assembly.
2. Operate the manual override levers and return the seat to the "taxi, take-off and landing" (TTL) position.
3. Move the recline lever forward and pull the front of the seat pan forward. Operate the manual override levers and return the seat to the "taxi, take-off and landing" (TTL) position.
 - a. If the seatpan does not move, the latches are locked.
 - b. If the seatpan does move, then push the seat pan fully home and repeat the pull until the latches are locked.
4. Use the manual override levers to raise the leg rest and access the actuation system power switch located underneath the leg rest and mounted to the front of the seat frame.
5. Set the power switch to off.
6. Stow the leg rest and replace seat bottom cushion.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-16

25-25-02F

1. Remove restraining bar if injury to passengers may occur.
2. Placard affected seat(s) DO NOT STOW BAGGAGE UNDER THIS SEAT.
3. Ensure cabin crew is notified of the inoperative restraining bar and that baggage is not to be placed under the seat.

25-25-02G

If required, secure the associated seat in the upright position.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
CREW REST SEATS						
25-25-04A	Crew Rest Seats “DISP.APPR.REQ’D.”	Y	2	0	C	(O)(M) May be inoperative provided: a) Seat is not occupied, b) Affected seat(s) is blocked and placarded INOPERATIVE - DO NOT OCCUPY, c) Inoperative seat is not used for augmented flight crew member operations, and d) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: A seat with an inoperative seat belt is considered inoperative.
25-25-04B	Crew Rest Seat (Recline, Leg Rest and Foot Rest (Class 3 Seats) “DISP.APPR.REQ’D.”	Y	2	0	C	(O) May be inoperative and seat occupied provided: a) Seat is in full upright position for taxi, takeoff and landing, and b) Seat can be manually operated to lay flat position. NOTE: Class 3 rest seat remains a class 3 facility.
25-25-04C	Crew Rest Seat (Recline, Leg Rest and Foot Rest (Class 3 Seats) “DISP.APPR.REQ’D.”	Y	2	0	C	May be inoperative provided operations do not require its use. NOTE: Rest seats not available. Contact the OCC Fleet Sector Manager through the Dispatcher for alternate flight crew rest accommodations.
25-25-04D	Recline Mechanism “DISP.APPR.REQ’D.”	N	2	0	C	(M) May be inoperative and seat occupied provided: a) Seat is secured in the full up-right position, and b) Inoperative seat is not used for augmented flight crew member operations.
25-25-04E	Recline Mechanism “DISP.APPR.REQ’D.”	Y	2	0	C	May be inoperative and seat occupied provided: a) Seat back is immovable in the full upright position, and b) Inoperative seat is not used for augmented flight crew member operations.
25-25-04F	Arm Rest “DISP.APPR.REQ’D.”	Y	4	0	C	(M) May be inoperative or missing provided: a) Armrest is stowed in retracted position or removed, and b) Inoperative seat is not used for augmented flight crew member operations.

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-25-04A	Logbook	___ Crew Rest Seat(s) INOP
25-25-04B	Logbook	___ Crew Rest Seat(s) INOP
25-25-04C	Logbook	___ Crew Rest Seat(s) INOP
25-25-04D	Logbook	___ Crew Rest Seat(s) Recline INOP
25-25-04E	Logbook	___ Crew Rest Seat(s) Recline INOP
25-25-04F	Logbook	___ Crew Rest Seat Arm Rest(s) INOP/Missing

(O) PROCEDURES

25-25-04A

1. Inoperative seat is not used for augmented flight crew member operations.
2. Contact OCC Fleet Sector Manager through Dispatcher to coordinate any potential crew duty time issues.

25-25-04B

1. Raise seat bottom cushion for access to manual override levers located on the seat pan.
2. To move seat to Bed Mode:
 - a. Pull "Leg Rest" lever and deploy leg rest to horizontal position.
 - b. Pull "Back Rest" and "Latches" levers to recline seat.
3. To return seat to upright position:
 - a. Pull "Leg Rest" lever and position leg rest to approximately 45 degrees.
 - b. Pull "Back Rest" lever and lift end of leg rest to assist returning seat to upright position.
 - c. Pull "Leg Rest" lever and stow leg rest.



Override Levers



Pull Forward to Operate

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-19

(M) PROCEDURES

25-25-04A

A placard stating “INOPERATIVE - DO NOT OCCUPY”, must be placed in a conspicuous location on the seat.

25-25-04D

Secure the associated seat in the full up-right position.

25-25-04F

Stow the inoperative armrest in the retracted position or remove the armrest.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-28-01A	Storage Bin(s) / Cabin, Galley and Lavatory Storage Compartments / Closets	Y	-	-	C
					(M) May be inoperative provided: a) Affected bin, compartment or closet is secured in the closed position, b) Associated bin, compartment or closet is prominently placarded DO NOT USE, c) Any emergency equipment located in affected bin, compartment or closet is considered inoperative and deferred per applicable MEL, and d) Affected bin, compartment or closet is not used for storage of any item(s) except for those permanently affixed. NOTE: For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative.
25-28-01B	Storage Bin(s) / Cabin, Galley and Lavatory Storage Compartments / Closets	N	-	-	C
					(O)(M) May be inoperative provided: a) For non-retractable doors, affected door is removed, b) For retractable doors, affected door is removed or secured in the retracted (fully open) position, c) Affected bin, compartment or closet is not used for storage of any items, except those permanently affixed, d) Affected bin, compartment or closet is prominently placarded DO NOT USE, e) Procedures are used to alert crew members and passengers of inoperative bins, compartments or closets, and f) Passengers are briefed that associated bin or compartment is not to be used. NOTE 1: For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative. NOTE 2: Any emergency equipment located in the associated bin, compartment, or closet (permanently affixed) is available for use.
25-28-01C	Multi Latch / Quarter Turn Lug Installations (Includes Gold Latches)	Y	-	-	C
					(O) One latch/lug per compartment may be inoperative or missing provided: a) Remaining latch(es)/lug(s) on affected compartment(s) operate normally, b) Associated Galley Cart position remains empty, and c) Galley Cart distribution is maintained.
25-28-01D	Storage Compartment Key Locks	Y	-	0	D
					(O)(M) May be inoperative in the unlocked position provided doors can be secured by other means.

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-28-01A	Logbook	___ Storage Bins / Cabin and Galley Storage Compartment(s) / Closet(s) INOP
25-28-01B	Logbook	___ Storage Bins / Cabin and Galley Storage Compartment(s) / Closet(s) INOP
25-28-01C	Logbook	___ Multi Latch / Quarter Turn Lug INOP
25-28-01D	Logbook	___ Storage Compartment Key Lock INOP

(O) PROCEDURES

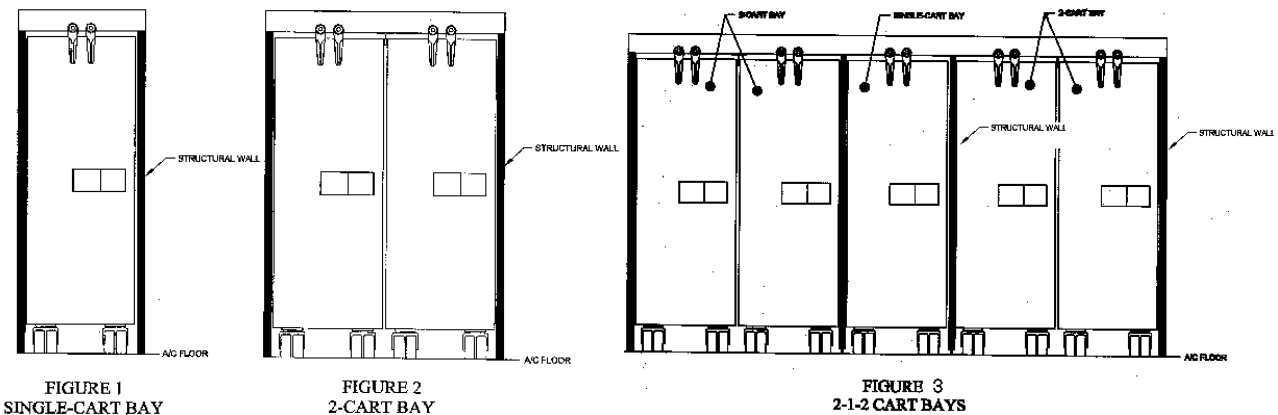
25-28-01B

Passengers and crew members must be briefed not to use an inoperative overhead/cabin storage bin with the door removed or secured open.

25-28-01C

- Galley cart storage bays (see Figure 1, 2 and 3 below for the types of cart bay) **must** either have all carts installed or no carts installed. If one cart must be removed from a multi-cart bay, then all carts must be removed from that bay. A “bay” is a series of cart compartments in between structural walls.
- It is permissible to have one bay completely empty and other bay(s) filled with carts in a multiple-bay galley (see Figure 3 below).

NOTE: It may be possible to redistribute galley carts from one bay to another bay, except from a chilled bay to a non-chilled bay, so that carts do not require removal. Repositioning carts from a single-cart bay to a multi-cart bay is permissible to avoid removal of carts, which will negatively impact passenger service.



25-28-01D

Advise Purser / FL of inoperative lock and not to store valuables in affected compartment(s).

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-22

(M) PROCEDURES

25-28-01A

1. Empty compartment (except for permanently affixed items).
2. Using suitable pressure sensitive tape (i.e., bag bin tape, nylon or fiberglass reinforced tape, etc., but **not** masking tape), secure compartment CLOSED. If unable to secure compartment closed, Maintenance is Required and Flight Crew May **Not** Placard.
3. Placard compartment using "Inoperative Cabin Appearance" placard or equivalent.
4. The following items are considered "emergency equipment" and may not be relocated, they must also be deferred per applicable MEL:
 - Fire Extinguishers
 - Megaphones
 - Flashlights
 - EEMK
 - AED
 - PBE
 - Passenger Oxygen Bottles
 - First Aid Kits
5. Except for the items listed above, cabin equipment may be relocated provided:
 - a. Location placarding (if installed) of the affected item is removed or obscured.
 - b. Install temporary placard on the outside of the inoperative compartment / bin specifying the new location.
 - c. Install temporary placard on the outside of compartment / bin where the item has been relocated.
 - d. Note location of relocated equipment on aircraft logbook placard.

25-28-01B

1. For door removal: Remove affected door. Securely store the removed door if it remains on the aircraft.
2. For retractable doors: Firmly secure affected compartment door OPEN using nylon reinforced strapping tape (packing tape).
3. Attach DO NOT USE placard to the associated bin, compartment or closet.

25-28-01D

1. Ensure that lock is inoperative in the unlocked position.
2. Ensure that associated door will still stay latched closed. If door will not latch closed, the entire compartment must be considered inoperative and deferred.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-29-03A	Overhead Flight Crew Rest Door "DISP.APPR.REQ'D."	Y	1	0	C (O)(M) May be inoperative provided: a) Flight Crew Rest is deactivated CLOSED and placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit overhead Flight Crew Rest inspections by crewmembers.
25-29-03B	Overhead Flight Attendant Rest Door "DISP.APPR.REQ'D."	Y	1	0	C (O)(M) May be inoperative provided Flight Attendant Rest is deactivated CLOSED and placarded UNSERVICEABLE – DO NOT USE. NOTE 1: When the Overhead Flight Attendant Rest is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. NOTE 2: These provisions are not intended to prohibit overhead Flight Attendant Rest inspections by crewmembers.
25-29-03C	Overhead Flight Crew / Attendant Rest Door Lock	Y	2	0	C (O)(M) May be inoperative provided: a) Associated OFCR/OFAR door lock override operates normally, and b) Associated OFCR/OFAR door opens and closes normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-29-03A	On Flight Crew Rest Area Door	Flight Crew Rest Area Door INOP
25-29-03B	On Flight Attendant Rest Area Door	Flight Attendant Rest Area Door INOP
25-29-03C	Logbook	___ OFCR / OFAR Door Lock(s) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-24

(O) PROCEDURES

25-29-03A

1. Ensure crew rest compartment is not used and passenger seats are made available for supplemental crewmembers.
2. Flight duty period limits for augmented operations must be applied.

25-29-03B

Coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.

25-29-03C

Brief Flight Crew to use the door lock override (door key button) to enter the crew rest.

(M) PROCEDURES

25-29-03A, 25-29-03B

1. Remove all personal items from the associated crew rest.
NOTE: Blankets, pillows and other items normally used in the crew rest may remain.
2. Secure the associated crew rest entrance door closed.
3. Place a strip of red OM-2 "UNSERVICABLE-DO NOT USE" tape or equivalent* across inoperative rest area door.

* An acceptable alternate to the OM2 tape is a section of 2 inch wide masking tape with the words "UNSERVICEABLE – DO NOT USE " printed legibly in 1 inch black letters.

25-29-03C

If the door lock override (pushing door key button) unlocks the door, then the crew rest may be used. If the override does not operate normally, then the crew rest door must be deferred and the crew rest will be deactivated closed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION	FLIGHT CREW / ATTENDANT RESTS			REMARKS OR EXCEPTIONS	
25-29-04A	Flight Crew Rest (OFCR) (Including Associated Required / Emergency Equipment) “DISP.APPR.REQ’D.”	Y	1	0	C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit overhead Flight Crew Rest inspections by crewmembers.
25-29-04B	Flight Crew Rest (Gasper Vents / Outlets) “DISP.APPR.REQ’D.”	Y	-	0	C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04C	Flight Crew Rest (Illuminated Fasten Seat Belt Signs) “DISP.APPR.REQ’D.”	Y	-	0	C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04D	Flight Crew Rest (Lap / Seat Belts) “DISP.APPR.REQ’D.”	Y	-	0	C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
FLIGHT CREW / ATTENDANT RESTS (CONTINUED)					
25-29-04E	Flight Crew Rest (Lighting) "DISP.APPR.REQ'D."	Y	-	0	C (O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04F	Flight Crew Rest (Mattresses) "DISP.APPR.REQ'D."	Y	-	0	C (O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04G	Flight Crew Rest (No Smoking Placard(s)) "DISP.APPR.REQ'D."	Y	-	0	C (O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04H	Flight Crew Rest (Oxygen Masks) "DISP.APPR.REQ'D."	Y	-	0	C (O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
FLIGHT CREW / ATTENDANT RESTS (CONTINUED)						
25-29-04I	Flight Crew Rest (Portable Oxygen) “DISP.APPR.REQ’D.”	Y	-	0	C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04J	Flight Crew Rest (Privacy / Sleeping Area) “DISP.APPR.REQ’D.”	Y	-	0	C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04K	Flight Crew Rest (Temperature Control) “DISP.APPR.REQ’D.”	Y	-	0	C	(O)(M) May be inoperative provided: a) Class 1 Flight Crew Rest facility is placarded UNSERVICEABLE – DO NOT USE, and b) Contact the OCC Fleet Sector Manager through the Dispatcher to coordinate any potential crew duty time issues. NOTE: These provisions are not intended to prohibit Flight Crew Rest Facility inspections by crewmembers.
25-29-04L	Flight Attendant Rest (OFAR) (Including Associated Required / Emergency Equipment) “DISP.APPR.REQ’D.”	Y	1	0	C	(O)(M) May be inoperative provided Flight Attendant Rest is deactivated CLOSED and placarded UNSERVICEABLE – DO NOT USE. NOTE 1: When the Overhead Flight Attendant Rest is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate. NOTE 2: These provisions are not intended to prohibit overhead Flight Attendant Rest inspections by crewmembers.

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-29-04A	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04B	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04C	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04D	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04E	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04F	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04G	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04H	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04I	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04J	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04K	On Flight Crew Rest Area Door	FLIGHT CREW REST AREA INOP
25-29-04L	On Flight Attendant Rest Area Door	FLIGHT ATTENDANT REST AREA INOP

(O) PROCEDURES

25-29-04A, 25-29-04B, 25-29-04C, 25-29-04D, 25-29-04E, 25-29-04F, 25-29-04G, 25-29-04H, 25-29-04I, 25-29-04J, 25-29-04K

1. Ensure crew rest compartment is not used and passenger seats are made available for supplemental crewmembers.
2. Flight duty period limits for augmented operations must be applied.

25-29-04L

Coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.

(M) PROCEDURES

25-29-04A, 25-29-04AB, 25-29-04C, 25-29-04D, 25-29-04E, 25-29-04F, 25-29-04G, 25-29-04H, 25-29-04I, 25-29-04J, 25-29-04K, 25-29-04L

1. Remove all personal items from the associated crew rest.
NOTE: Blankets, pillows and other items normally used in the crew rest may remain.
2. Secure the associated crew rest entrance door closed.
3. Place a strip of red OM-2 "UNSERVICABLE-DO NOT USE" tape or equivalent* across inoperative rest area door.

* An acceptable alternate to the OM2 tape is a section of 2 inch wide masking tape with the words "UNSERVICEABLE – DO NOT USE " printed legibly in 1 inch black letters.

CONTINUED NEXT PAGE

NOTE 1: The emergency equipment listed below is required for occupancy of the OFCR and OFAR. If any required equipment is missing or inoperative, the associated crew rest compartment must be deferred and locked closed as indicated above. It may be possible to interchange emergency equipment located in the cabin with emergency equipment in crew rest compartments or vice versa provided applicable MEL restrictions are adhered to.

NOTE 2: Flashlights may be inoperative or missing and the associated crew rest compartment used provided crewmember has a flashlight of equivalent characteristics readily available. Refer to [MEL 25-64-02](#) for MEL relief of flashlights.

NOTE 3: Comfort or convenience related items may be deferred under the NEF program (Refer to [MEL 25-20-01](#)).

Overhead Flight Crew Rest (OFCR)
1 each – Water Fire Extinguisher
2 each – Halon Fire Extinguisher
4 each – PBE
1 each – Flashlight
4 each – Oxygen Mask Drops
1 each – Portable Oxygen Bottle
1 each – First Aid Kit

Overhead Flight Attendant Rest (OFAR) 777ER
2 each – Water Fire Extinguisher
2 each – Halon Fire Extinguisher
2 each – PBE
3 each – Flashlight
10 each – Oxygen Mask Drops
2 each – Portable Oxygen Bottle
1 each – First Aid Kit

Overhead Flight Attendant Rest (OFAR) 777LR
1 each – Water Fire Extinguisher
2 each – Halon Fire Extinguisher
2 each – PBE
2 each – Flashlight
6 each – Oxygen Mask Drops
1 each – Portable Oxygen Bottle
1 each – First Aid Kit

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-30-01	Galley/Cabin Waste Container Access Doors / Covers	Y	-	-	C (O)(M) May be inoperative provided: a) Associated waste container is empty and access is secured to prevent waste introduction into the compartment, and b) Procedures are established to ensure that sufficient galley/cabin waste containers are available to accommodate all waste that may be generated on a flight.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-30-01	Logbook	___ Galley Waste Container Access Doors / Cover(s) INOP

(O) PROCEDURES

Refer to the In-Flight Service On Board Manual, Section 3 Regulations / Guidelines, Trash.

(M) PROCEDURES

1. Empty waste container.
2. Using suitable pressure sensitive tape, secure waste receptacle access door(s) or cover(s) CLOSED.
3. Placard waste receptacle INOPERATIVE - DO NOT USE.

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-31

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			Y	8	4	REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS					
25-41-01	Exterior Lavatory Door Ashtrays	Fifty percent may be inoperative or missing provided repairs are made within 10 calendar days.					

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-41-01	Logbook	___ Exterior Lavatory Door Ashtray MISSING

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-41-02	Lavatory Waste Container Flapper / Access Doors "DISP.APPR.REQ'D."	Y	-	-	C (M) May be inoperative provided: a) Associated waste container is empty and access is secured to prevent waste introduction into the waste container, b) Lavatory is used only by crewmembers, and c) 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.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-41-02	Logbook	___ Lavatory Waste Container Flapper / Access Door(s) INOP

(M) PROCEDURES

1. Empty waste container.
2. Using suitable pressure sensitive tape, secure waste receptacle access door(s) or cover(s) CLOSED.
3. Placard lavatory entrance door INOPERATIVE - DO NOT ENTER.

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-33

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-52-01	Lower Cargo Compartment Lining (Forward and Aft) "DISP.APPR.REQ'D."	N	-	-	C (O)(M) May be damaged or missing provided associated cargo compartment remains empty, or is verified to contain only empty cargo handling equipment, ballast, and/or flyaway kits (see MEL/CDL Format Section on Page FM-13).

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-52-01	Logbook	___ Cargo Compartment Lining Damaged/Missing

(O) PROCEDURES

See [MEL/CDL Format Section located on Page FM-13](#) for cargo loading restrictions.

(M) PROCEDURES

- The forward and aft Lower Cargo Compartment Linings include the decompression panels, ceiling liners, sloping sidewall liners, vertical liners, waste tank enclosure panels, all endwalls, all cargo door liners, access panels, cargo ceiling light assemblies (housings) and the main equipment center bulkhead liner.
- Some of the cargo floor panels are containment barriers for smoke and fire extinguishant:
 - The forward cargo compartment floor panels and walkways that are containment barriers are located at the aft end of the forward compartment.
 - The aft compartment floor panels and walkways that are containment barriers are located at the aft end of the aft compartment, just forward of the bulk cargo compartment.
 - All of the bulk cargo compartment floor panels are containment barriers.

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-34

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
25-53-01	Cargo Handling Systems	N	2	0	C	NOTE: Any portion of the system(s) which operates normally may be used.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-53-01	Logbook	___ Electric Cargo Handling System(s) INOP

MAINTENANCE NOTE:

Cargo Handling Systems are comprised of electrically operated components such as power drive units (PDU), electrical actuation feature of rollout stops (at cargo door opening) and transverse guides, and mechanical units such as rollers and ball mats. Use this MEL item to defer these types of components when inoperative.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-53-02A	Cargo Restraint Systems "DISP.APPR.REQ'D."	N	-	-	A (M) May be inoperative or missing provided : a) Acceptable cargo loading limits from the Weight and Balance Loading Manual are observed, and b) Repairs are made prior to completion of the next heavy maintenance visit. NOTE 1: Reference (M) PROCEDURES section for the Missing / Inop Cargo Restraint Equipment tables. NOTE 2: Dispatch to add remark to the MEL advising restraint type, ULD position, frame position of latch, and number that are missing / inop.
25-53-02B	Cargo Restraint Systems "DISP.APPR.REQ'D."	N	-	-	C (M) May be inoperative or missing provided associated cargo compartment remains empty. NOTE 1: Reference (M) PROCEDURES section for the Missing / Inop Cargo Restraint Equipment tables. NOTE 2: Dispatch to add remark to the MEL advising which bin(s) are to remain empty (see MEL Instructions Section).

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-53-02A	Logbook	___Cargo Compartment Restraint System(s) INOP
25-53-02B	Logbook	___Cargo Compartment Restraint System(s) INOP

(M) PROCEDURES

25-53-02A, 25-53-02B

Identify the exact type and cargo hold location of the missing / inoperative restraints by using the Missing / Inop Cargo Restraint Tables as applicable, on the following pages :

1. If the inoperative restraint component(s) state "no restriction" in the Missing / Inop Cargo Restraint Tables on the following pages, placard per MEL 25-53-02A.
2. If the number of inoperative restraint components does not exceed the allowance in the Missing / Inop Cargo Restraint Tables on the following pages, placard per MEL item 25-53-02A and advise Dispatch of the restraint type, ULD position, frame position of latch, and number that are missing / inoperative.
3. If the number of inoperative restraint components exceeds the allowance in the Missing / Inop Cargo Restraint Tables on the following pages, the affected cargo compartment cannot be used. Placard the Cargo Restraint Components(s) per MEL item 25-53-02B (compartment empty) and advise Dispatch which bin(s) are to remain empty ([see MEL Instructions Section](#)).

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Table A - Forward Cargo Bin with Missing / Inop Restraint Equipment: B-777

Part 1 - Container Restraint

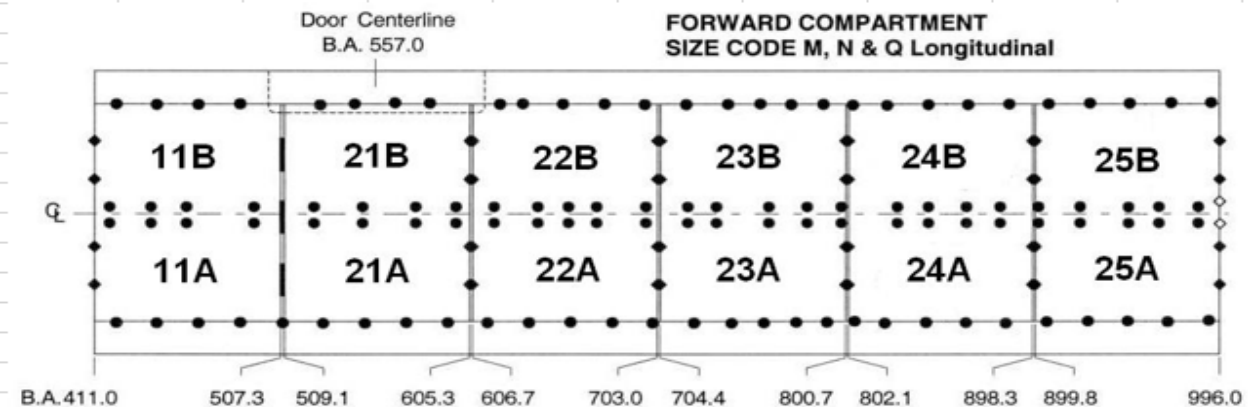
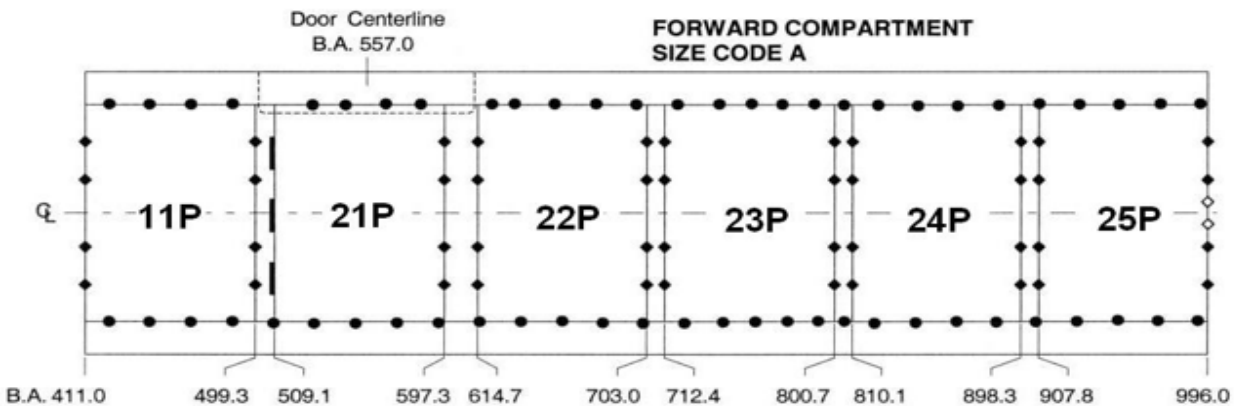
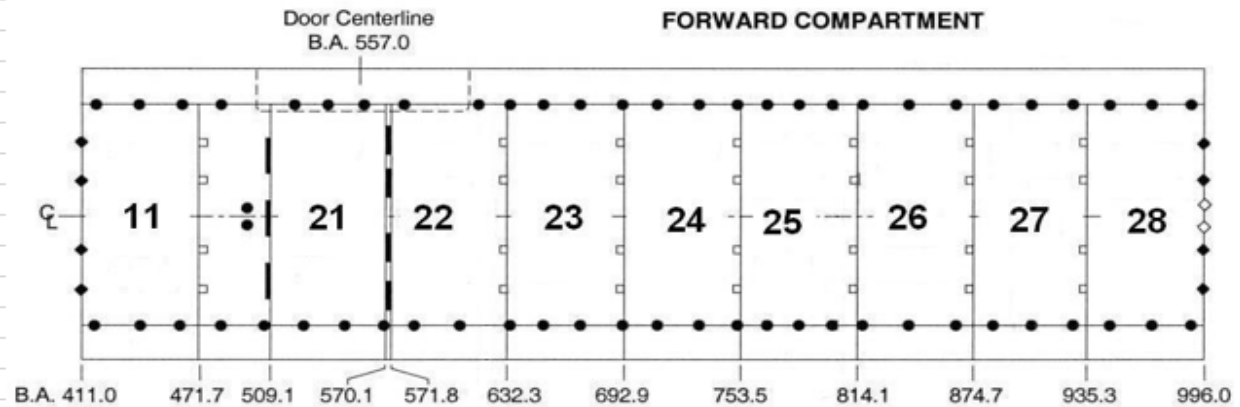
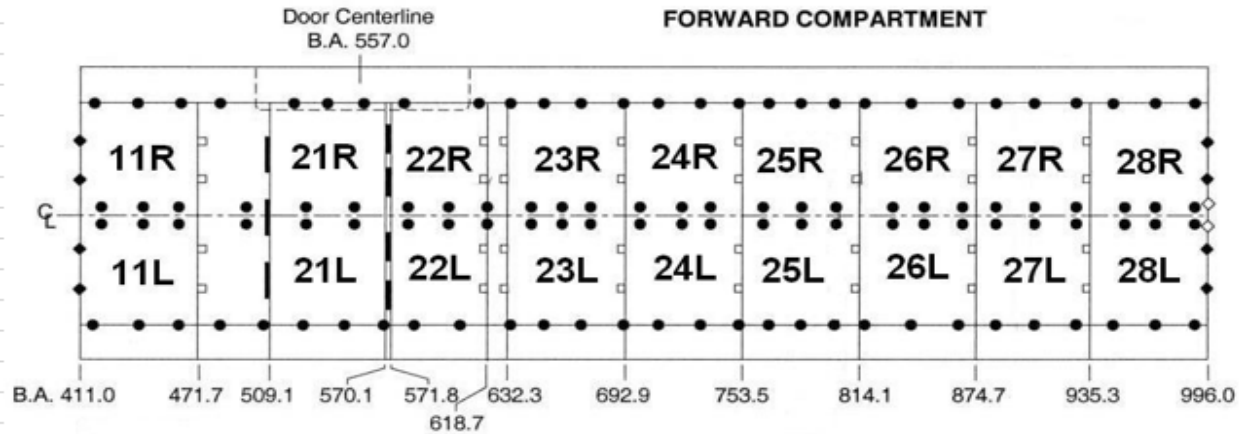
Restraint Type	Restraint Location - Balance Arm (B.A.)	Number of Restraint Missing/Inop	ULD Position	Restriction / Limitation
End Stop 	B.A. 411.0	1	11L, 11R	No restriction
		1 or 1 each LH or RH side	11	No restriction
	B.A. 996.0	1 or 1 each LH or RH side	22L/22R thru 28L/28R (LD2 & LD3 only)	No restriction
		1 or 1 each LH or RH side	25, 26, 27, 28	No restriction
Partial Load Stop 	B.A. 692.9	1	24L/24R thru 28L/28R (LD2 & LD3 only)	No restriction
		1 or 1 each LH or RH side		No restriction
	B.A. 874.7	1	27L/27R and/or 28L/28R (LD3 only)	No restriction
		1 or 1 each LH or RH side		No restriction
Lateral Guide with Vertical Restraint 	B.A. 570.1	1	21L, 21R	No restriction
		1 or 1 each LH or RH side	21	
Side/Vertical Restraint 	B.A. 411.0 to 996.0	1 each pos	11L/11R thru 28L/28R (Except 21L/21R)	No restriction
			LD3/LD4/LD8/LD11 Only	
UNLESS SPECIFICALLY INDICATED, NO COMBINATION OF MISSING / INOP RESTRAINTS IS PERMITTED FOR A SINGLE ULD POSITION. OTHER MISSING / INOP RESTRAINT LOCATION NOT INDICATED MUST HAVE POSITION EMPTY OR UNOCCUPIED.				

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Table A - Forward Cargo Bin with Missing / Inop Restraint Equipment: B-777

Part 2 - Pallet Restraint				
Restraint Type	Restraint Location - Balance Arm (B.A.)	Number of Restraint Missing/Inop	ULD Position	Restriction / Limitation
End Stop / Vertical Restraint 	B.A. 411.0	1	11P (88 & 96in)	No restriction
		1 or 1 each LH or RH side	11A, 11B	No restriction
	B.A. 605.3 /B.A. 606.7	1	21P & 22P	No restriction
		1 or 1 each LH or RH side	21A, 21B, 22A, 22B	No restriction
	B.A. 614.7	1	22P	No restriction
	B.A. 703.0 / B.A. 704.4	1 or 1 each LH or RH side	22A, 22B, 22P 23A, 23B, 23P	No restriction
	B.A. 712.4	1	23P	No restriction
	B.A. 800.7 / B.A. 802.1	1 or 1 each LH or RH side	23A, 23B, 23P 24A, 24B, 24P	No restriction
	B.A. 810.1	1	24P	No restriction
	B.A. 898.3 / B.A. 899.8	1 or 1 each LH or RH side	24A, 24B, 24P 25A, 25B, 25P	No restriction
B.A. 907.8	1	25P	No restriction	
B.A. 996.0	1 or 1 each LH or RH side	25A, 25B, 25P	No restriction	
Side/Vertical Restraint 	B.A. 411.0 to 996.0		11A&B, 21A&B, 22A&B, 23A&B, 24A&B, 25A&B (Longitudinally loaded)	No restriction
		1 each pos center or Outbd		
		1 or 1 each LH or RH side	22P, 23P & 25P (96in Pallet only)	No restriction
UNLESS SPECIFICALLY INDICATED, NO COMBINATION OF MISSING / INOP RESTRAINTS IS PERMITTED FOR A SINGLE ULD POSITION. OTHER MISSING / INOP RESTRAINT LOCATION NOT INDICATED MUST HAVE POSITION EMPTY OR UNOCCUPIED.				

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Table B - AFT Cargo Bin with Missing / Inop Restraint Equipment: B-777

Part 1 - Container Restraint

Restraint Type	Restraint Location - Balance Arm (B.A.)	Number of Restraint Missing/Inop	ULD Position	Restriction / Limitation
End Stop 	B.A. 1442.1	1 or 1 each LH or RH side	31L thru 34R 31,32, 33 and 34	No restriction
	B.A. 1880.0	1 or 1 each LH or RH side	42L/R and 43L/R (LD3 only)	No restriction
		1 or 1 each LH or RH side	42 and 43	
Partial Load Stop 	B.A. 1502.8	1 or 1 each LH or RH side	31L/R (LD3 only)	No restriction
			31	
	B.A. 1563.0		31L/R, 33L/R and 34L/R (LD3 only)	No restriction
		1 or 1 each LH or RH side	33 and 34 (LD4/LD8/LD11 Only)	
	B.A. 1758.7	1 or 1 each LH or RH side	42L/R and 43L/R (LD3 only) 42 and 43	No restriction
Lateral Guide with Vertical Restraint 	B.A. 1686.1 B.A. 1747.1	1 or 1 each LH or RH side	41L and 41R (LD3 only) 41	No restriction
	B.A. 1684.1	1 or 1 each LH or RH side	33L/R and 34L/R (LD3 only) 33 and 34 (LD4/LD8 Only)	No restriction
Side/Vertical Restraint 	B.A. 1442.1 to 1880.0	1 each pos	31L thru 43R (Except 41L/R)	No restriction
			LD3/LD4/LD8/LD11 Only	

UNLESS SPECIFICALLY INDICATED, NO COMBINATION OF MISSING / INOP RESTRAINTS IS PERMITTED FOR A SINGLE ULD POSITION. OTHER MISSING / INOP RESTRAINT LOCATION NOT INDICATED MUST HAVE POSITION EMPTY OR UNOCCUPIED.

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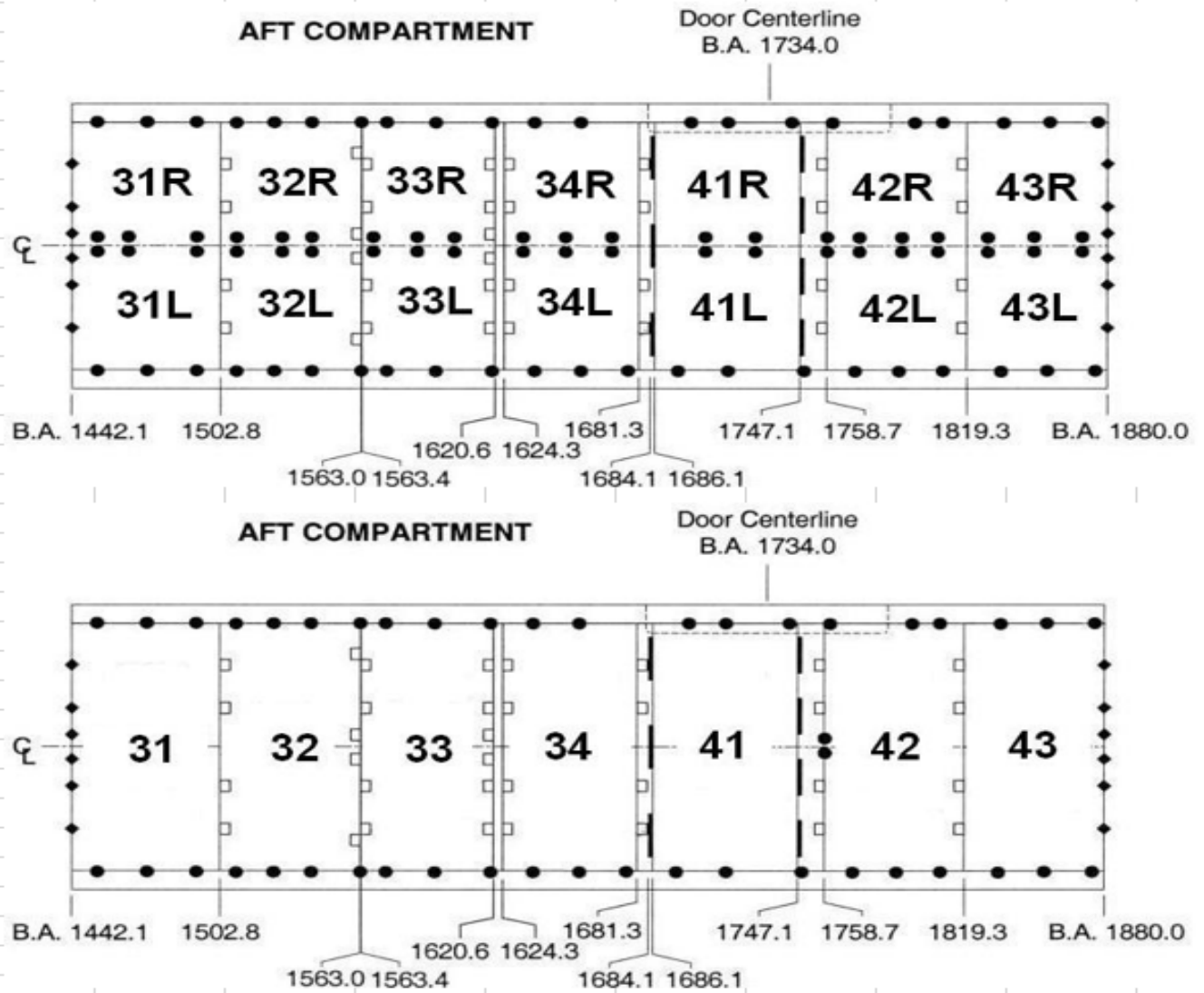
Table B - Aft Cargo Bin with Missing / Inop Restraint Equipment: B-777

Part 2 - Pallet Restraint

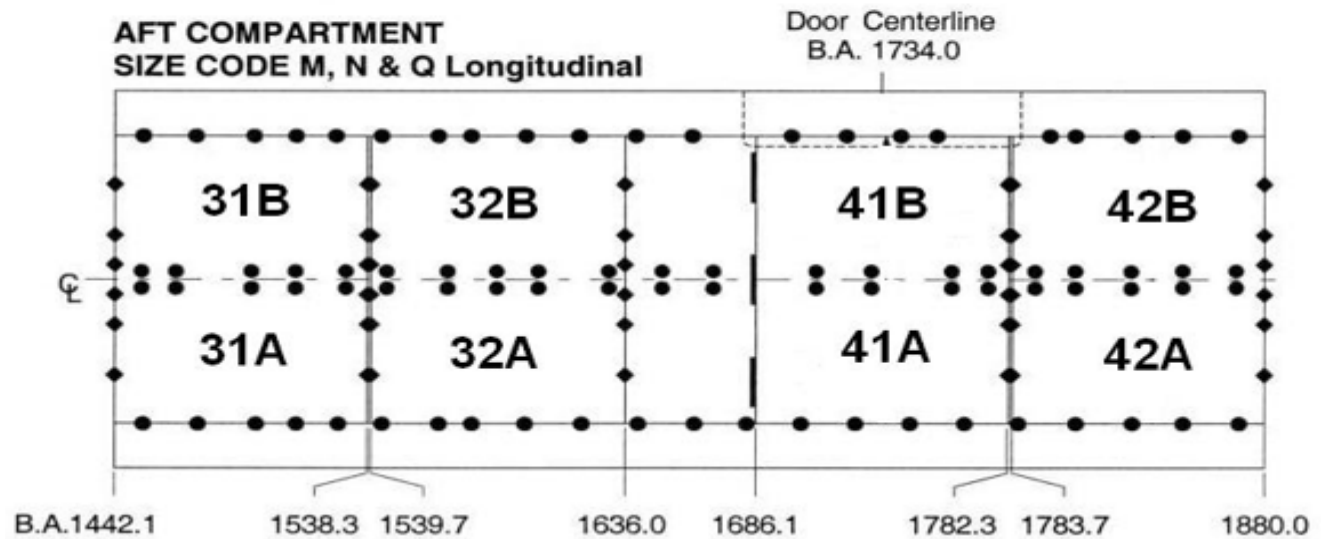
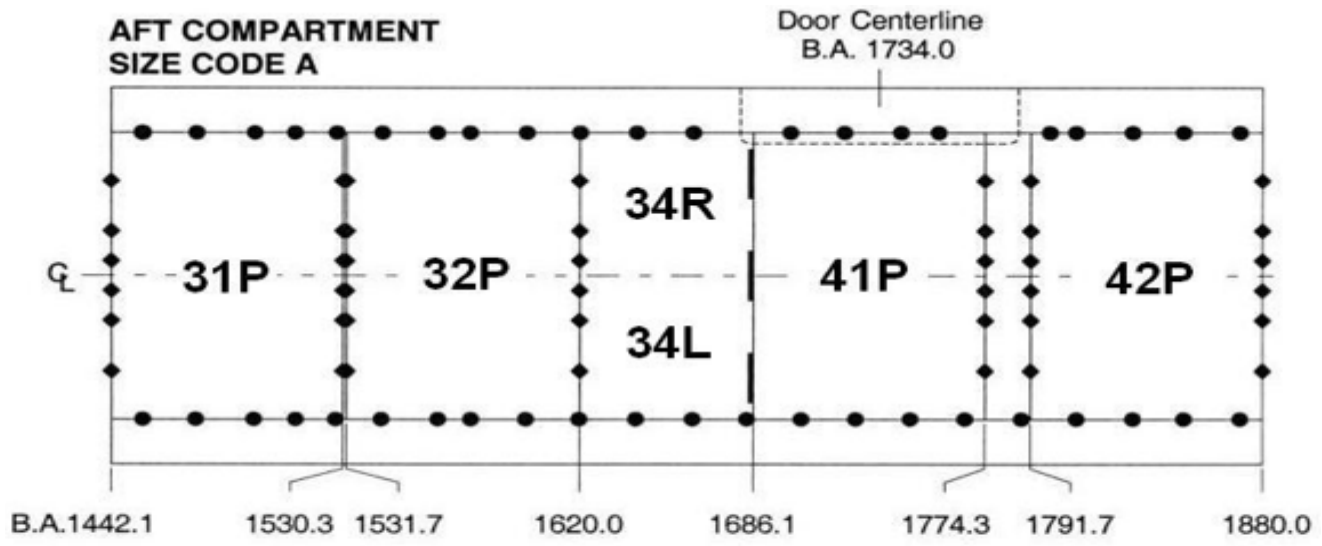
Restraint Type	Restraint Location -Balance Arm (B.A.)	Number of Restraint Missing/Inop	ULD Position	Restriction / Limitation
End Stop/Vertical Restraint 	B.A. 1442.1	1	31P (88 & 96in)	No restriction
		1 or 1 each LH or RH side	31A, 31B	No restriction
	B.A. 1530.3 /B.A. 1531.7	1	31P, 32P	No restriction
		1 or 1 each LH or RH side	32A, 32B	No restriction
	B.A. 1538.3 /B.A. 1539.7	1	32P	No restriction
		1 or 1 each LH or RH side	32A, 32B	No restriction
	B.A. 1774.3	1	41P	No restriction
Side/Vertical Restraint 	B.A. 1782.3 / B.A. 1783.7	1 or 1 each LH or RH side	41A, 41B, 41P	No restriction
	B.A. 1880.0	1	42P	No restriction
	B.A. 1442.1 to 1880.0	1 each pos center or Outbd	31A&B, 32A&B 41A&B, 42A&B (Longitudinally loaded)	No restriction
		1 or 1 each LH or RH side	ALL Positions (96in Pallet only)	No restriction

UNLESS SPECIFICALLY INDICATED, NO COMBINATION OF MISSING / INOP RESTRAINTS IS PERMITTED FOR A SINGLE ULD POSITION. OTHER MISSING / INOP RESTRAINT LOCATION NOT INDICATED MUST HAVE POSITION EMPTY OR UNOCCUPIED.

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NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-63-01	Emergency Evacuation Signal System	Y	1	0	C (O) May be inoperative provided: a) PA System and Cabin Interphone Alerting System operates normally, b) Alternate procedures are used as the primary means of initiating an emergency evacuation, c) Use of the PA and Cabin / Service Interphone systems will be necessary, d) Flight crewmembers refer to FOM, Emergency / Irregular Operations, e) Cabin crewmembers refer to In-Flight Service On-Board Manual, Emergency Procedures, and f) Prior to departure the pilot in command must brief cabin crewmembers on the emergency procedures that will be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-63-01	Logbook	Emergency Evacuation Signal System INOP

(O) PROCEDURES

Refer to REMARKS or EXCEPTIONS section above.

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-44

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-63-02	FASTEN SEAT BELT WHILE SEATED Placards	Y	-	-	C One or more signs or placards may be illegible or missing provided a legible sign or placard is visible from each occupied passenger seat.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-63-02	Logbook	___ FASTEN SEAT BELT WHILE SEATED Placards illegible / missing

	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-45

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
PORTABLE EMERGENCY LOCATOR TRANSMITTER (ELT)						
25-63-03A	Portable Emergency Locator Transmitter (ELT) (-200ER)	Y	2	1	D	
25-63-03B	Portable Emergency Locator Transmitter (ELT) (-200ER) "DISP.APPR.REQ'D."	Y	2	0	D	Except for extended overwater operations or flights within the states of Alaska or Hawaii over an uninhabited area, may be inoperative, missing or out of date.
25-63-03C	Portable Emergency Locator Transmitter (ELT) (-200LR) "DISP.APPR.REQ'D."	Y	1	0	D	Except for extended overwater operations or flights within the states of Alaska or Hawaii over an uninhabited area, may be inoperative, missing or out of date.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-63-03A	ELT	___ Portable ELT INOP / Missing
25-63-03B	ELT	BOTH ELTs INOP / Missing
25-63-03C	ELT	Portable ELT INOP / Missing

NOTE 1: The 777-200ER has two portable "Survival" type ELTs, one in the flight deck and one in the cabin.
The 777-200LR has a fixed mounted automatic ELT permanently installed in the fuselage which is controlled by a switch on the overhead panel and a portable "Survival" type ELT located in the cabin.

NOTE 2: Dispatch relief for the Fixed type ELT is in [MEL 23-24-02](#).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
25-64-01	Megaphones (Passenger) "DISP.APPR.REQ'D."	Y	-	0	C	(O) May be inoperative or missing provided: a) No passengers are carried, b) A maximum of 19 persons authorized by 14 CFR (121.583) for non-passenger carrying operations are carried, and c) Captain will brief persons authorized to be carried on flight about safety and evacuation procedures.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-64-01	Logbook	___ Megaphones (Passenger) INOP / Missing

(O) PROCEDURES

Refer to REMARKS or EXCEPTIONS section above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-64-02A	Flashlight Holder Assemblies (Including Flashlight)	Y	-	-	C May be inoperative or missing provided crewmember has a flashlight of equivalent characteristics readily available.
25-64-02B	Flashlight Holder Assemblies (Including Flashlight) "DISP.APPR.REQ'D."	Y	-	-	C (O) May be inoperative or missing provided: a) No passengers are carried, b) A maximum of 19 persons authorized by 14 CFR (121.583) for non-passenger carrying operations are carried, and c) Captain will brief persons authorized to be carried on flight about safety and evacuation procedures.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-64-02A	Logbook	___ Flight Attendant Flashlight Holder Assemblies INOP / Missing
25-64-02B	Logbook	___ Flight Attendant Flashlight Holder Assemblies INOP / Missing

(O) PROCEDURES

25-64-02B

Refer to REMARKS or EXCEPTIONS section above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	EMERGENCY MEDICAL EQUIPMENT				
25-64-03A	First Aid Kits "Contact MCC"	Y	4	3	A (O) May be incomplete, missing or inoperative provided: a) First Aid Kit is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within one flight cycle.
25-64-03B	First Aid Kit Seals	Y	4	0	C (O) Aircraft may be dispatched with seal(s) broken provided, PRIOR TO EACH DEPARTURE, it is verified that the kit contains the required minimum contents. Repetitive Check Required (Yellow Placard)
25-64-03C	AED (Automatic External Defibrillator) "Contact MCC"	Y	1	0	A (O) May be incomplete, missing or inoperative provided: a) AED is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within one flight cycle.
25-64-03D	AED Bracket / Lock	Y	1	0	C
25-64-03E	EEMK (Enhanced Emergency Medical Kit)	Y	2	1	D (O) May be incomplete, missing or inoperative provided EEMK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit.
25-64-03F	EEMK "Contact MCC"	Y	2	0	A (O) May be incomplete, missing or inoperative provided: a) EEMK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within one flight cycle.
25-64-03G	Red Pouch (Medical Accessory Pouch)	Y	1	0	C May be inoperative, missing, or contain less than the minimum required contents.

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MEL ITEM	TAB LOCATION	PLACARD TEXT
25-64-03A	Logbook	___ First Aid Kit Incomplete / Missing / INOP
25-64-03B	Logbook	___ First Aid Kit Seal(s) Broken
25-64-03C	Logbook	AED Incomplete / Missing / INOP
25-64-03D	Logbook	AED Bracket / Lock INOP
25-64-03E	Logbook	EEMK Incomplete / Missing / INOP
25-64-03F	Logbook	Both EEMKs Incomplete / Missing / INOP
25-64-03G	Logbook	Red Pouch (Medical Accessory Pouch) INOP / Missing

(O) PROCEDURES

25-64-03A, 25-64-03C, 25-64-03E, 25-64-03F

1. Re--seal the unit in a manner that will identify it as a unit that cannot be mistaken for a fully serviceable unit.
2. Captain will inform the Purser / FL of inoperative or missing emergency equipment.

25-64-03B

PRIOR TO EACH DEPARTURE - If seals are broken, verify the First Aid Kit contains the following:

1 pair	Protective Gloves or equivalent	1 pair	Bandage Scissors
1 pkg	Ammonia Inhalants (10/pkg)	1 pkg	1 Inch Adhesive Bandages (16/pkg)
2 rolls	Adhesive Tape	4 pkg	4 Inch Gauze Bandages (1/pkg)
2 pkg	Wire Splints (1/pkg)	5 pkg	40 Inch Triangular Bandages (1/pkg)
2 pkg	Antibiotic Ointment Packets or Antiseptic Wipes (10/pkg)	8 pkg	4 Inch Compress Bandages (1/pkg)

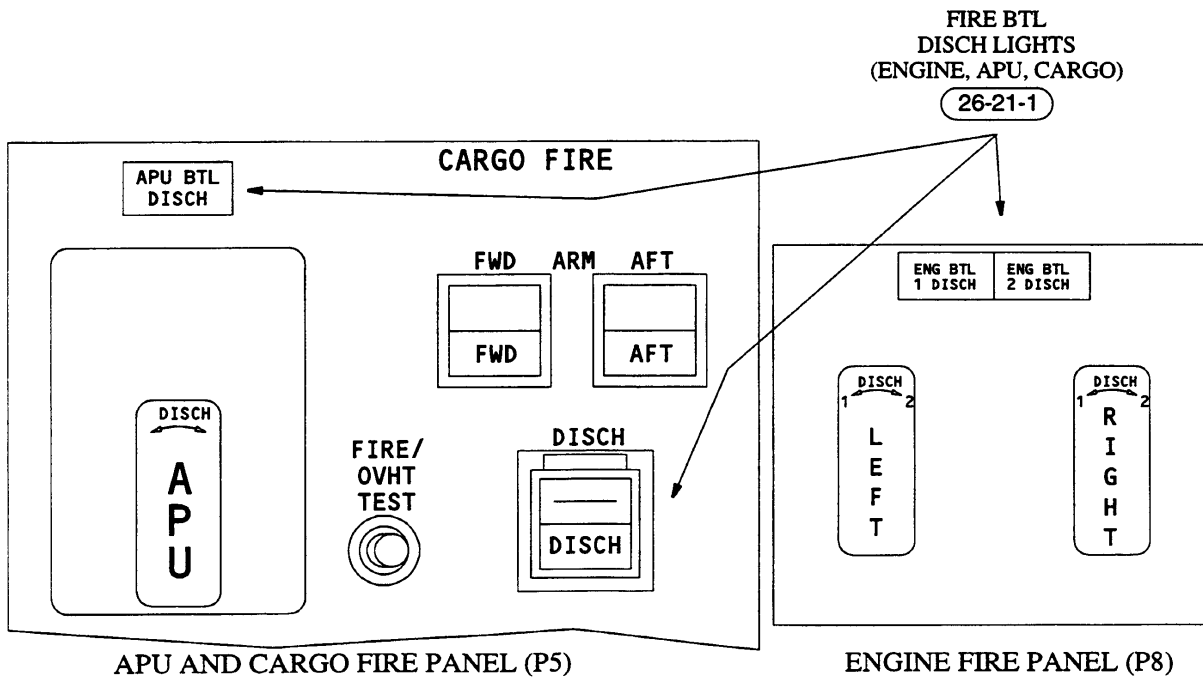
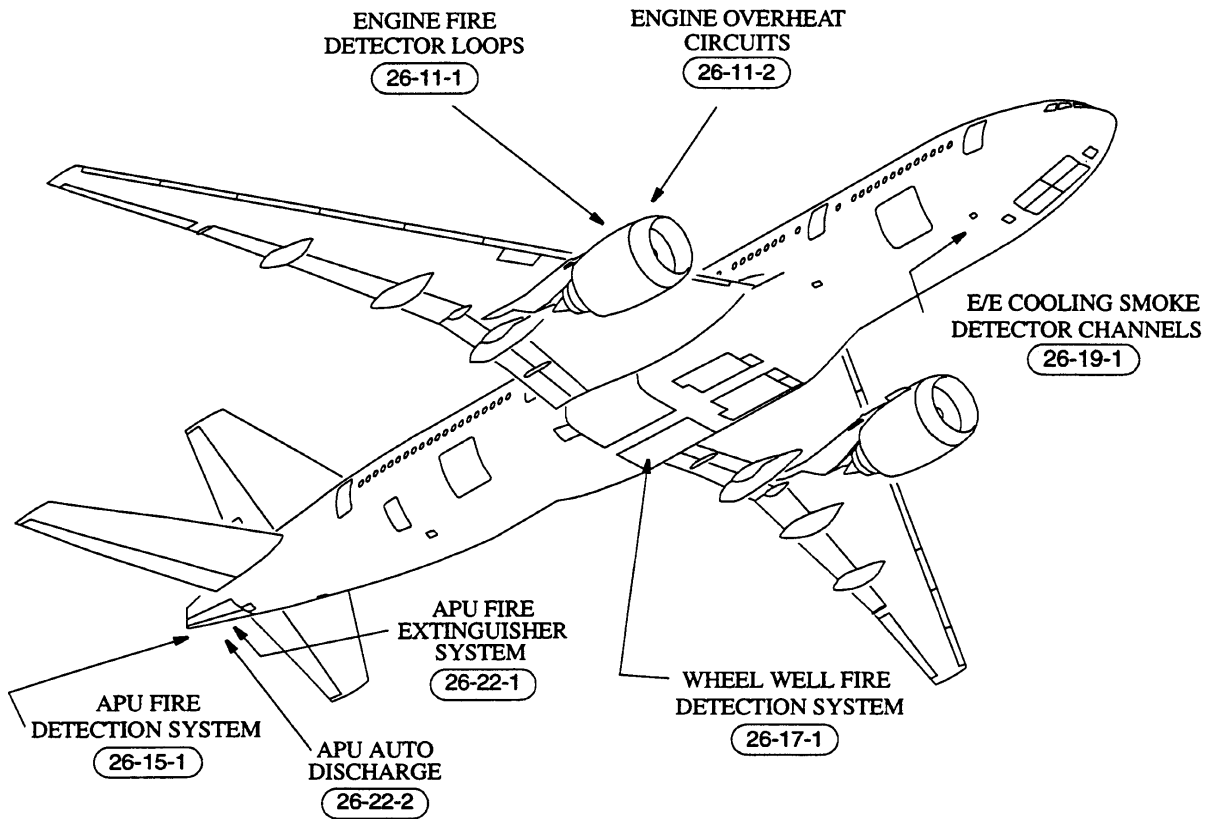
	B777 Minimum Equipment List	ATA 25 Equipment / Furnishings	R14 05/09/16 Page 25-50

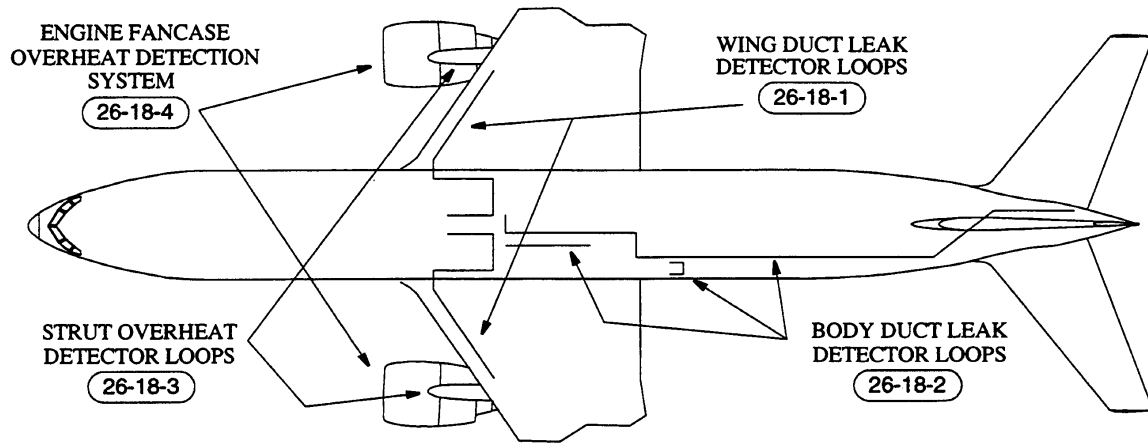
NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
25-99-01A	PED Mount Administrative Control Item	Y	-	-	Reconfigure cockpit for two (2) operative PED mounts. See TOPP 40-40-05 for instructions.
25-99-01B	PED Mount "DISP.APPR.REQ'D" Administrative Control Item	Y	-	-	Reconfigure cockpit for one (1) operative PED mounts. See TOPP 40-40-05 for instructions.
25-99-01C	PED Mount "DISP.APPR.REQ'D" Administrative Control Item	Y	-	-	Reconfigure cockpit for zero (0) operative PED mounts. See TOPP 40-40-05 for instructions.

MEL ITEM	TAB LOCATION	PLACARD TEXT
25-99-01A	Logbook	Reconfigure PED mounts per TOPP 40-40-05
25-99-01B	Logbook	Reconfigure PED mounts per TOPP 40-40-05
25-99-01C	Logbook	Reconfigure PED mounts per TOPP 40-40-05

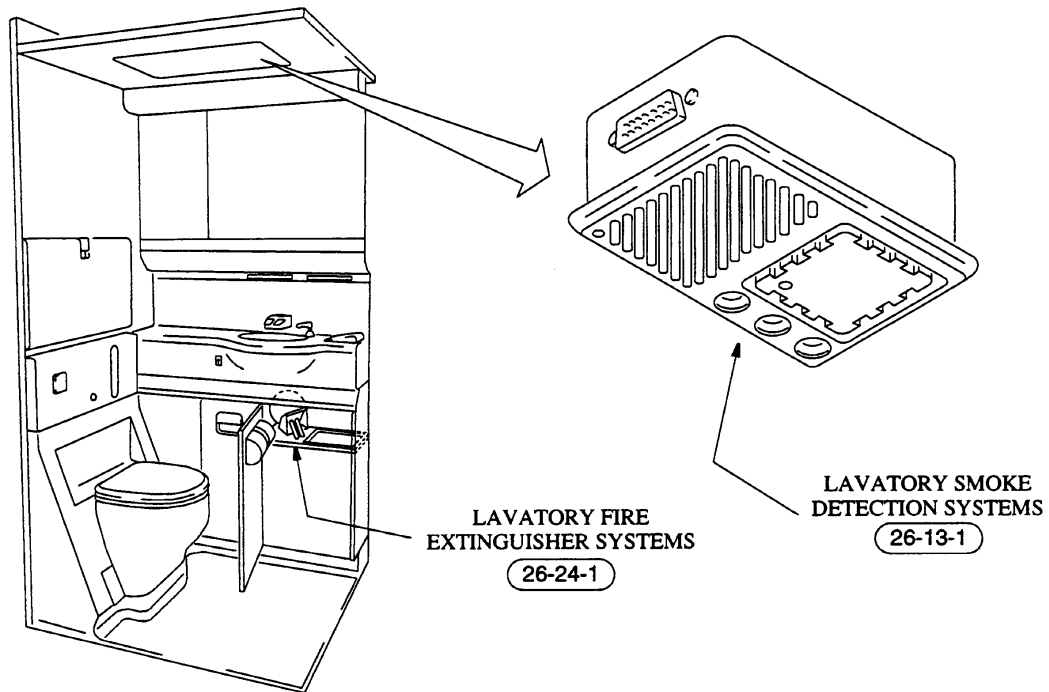
ATA 26 Contents

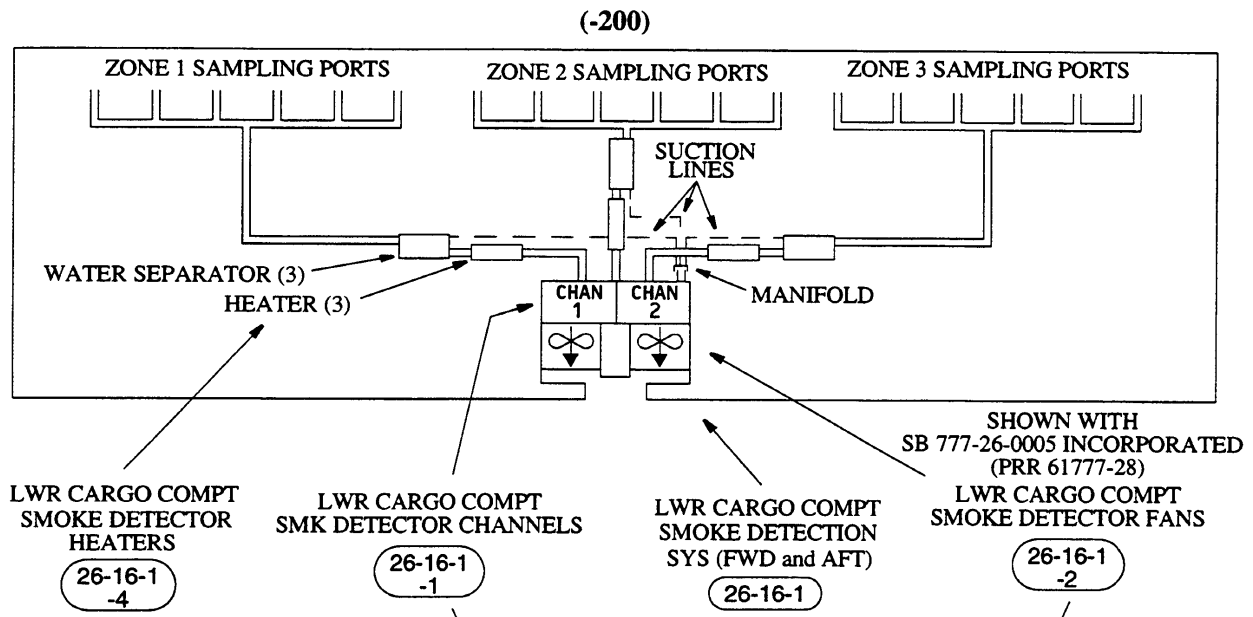
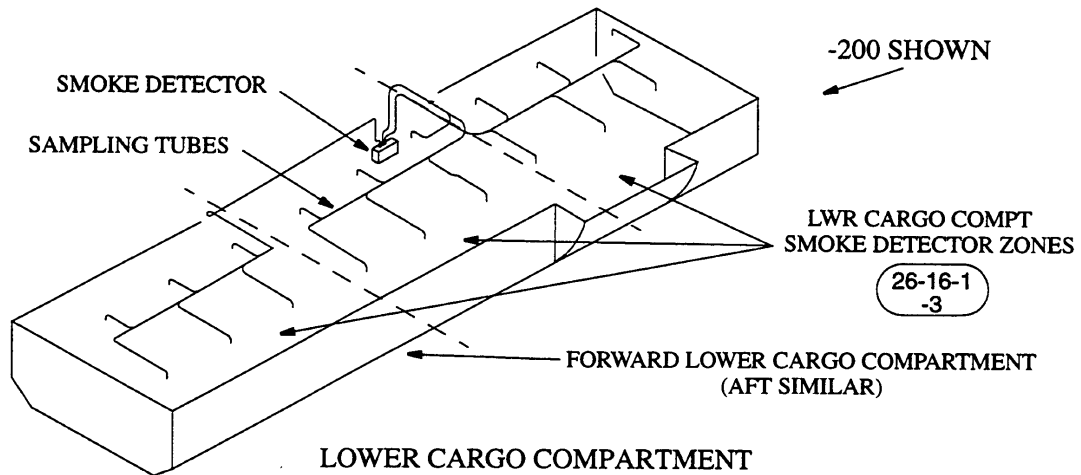
26-11-01	Engine Fire Detector Loops	26-6
26-11-02	Engine Overheat Circuits	26-7
26-13-01A	Lavatory Smoke Detection Systems	26-8
26-13-01B	Lavatory Call Light Smoke Detected Function	26-8
	OVERHEAD CREW REST SMOKE DETECTION SYSTEMS	26-9
26-14-04A	Overhead Flight Crew / Attendant Rest (OFCR / OFAR) Smoke Detection Systems	26-9
26-14-04B	Bunk Smoke Detectors	26-9
26-14-04C	Common Area Smoke Detectors – Overhead Flight Crew Rest (OFCR)	26-9
26-14-04D	Common Area Smoke Detectors – Overhead Flight Attendant Rest (OFAR)	26-9
26-14-04E	Aisle Smoke Detectors – OFAR	26-10
26-14-04F	Closet Smoke Detector	26-10
26-14-04G	Vanity Smoke Detector – OFCR	26-10
26-14-04H	Stairwell Smoke Detector	26-10
26-15-01A	APU Fire Detection System	26-12
26-15-01C	APU Fire Detector Loops	26-12
	LOWER CARGO COMPARTMENT SMOKE DETECTION SYSTEMS	26-14
	(FORWARD AND AFT)	26-14
26-16-01A	Lower Cargo Compartment Smoke Detection Systems (Forward and Aft)	26-14
26-16-01B	Lower Cargo Compartment Smoke Detector Channels	26-14
26-16-01C	Lower Cargo Compartment Smoke Detector Fans	26-14
26-16-01D	Lower Cargo Compartment Smoke Detector Zones	26-14
26-16-01E	Lower Cargo Compartment Smoke Detector Heaters	26-14
26-17-01A	Wheel Well Fire Detection System	26-16
26-18-01	Wing Duct Leak Detector Loops	26-18
26-18-02	Body Duct Leak Detector Loops	26-19
26-18-03	Strut Overheat Detector Loops	26-20
26-18-04A	Engine Fan Case Overheat Detection System (-200ER)	26-21
26-19-01	E/E Cooling Smoke Detector Channels	26-22
26-21-01	Fire BTL DISCH Lights (Engine, APU, Cargo)	26-23
	FIRE EXTINGUISHING SQUIB TEST SYSTEM	26-24
26-21-02A	Fire Extinguishing Squib Test System	26-24
26-21-02B	Cargo Squib Test System	26-24
26-22-01	APU Fire Extinguisher System	26-26
26-22-02	APU Auto Discharge	26-27
	LOWER CARGO COMPARTMENT FIRE EXTINGUISHER BOTTLES	26-28
26-23-01A	Lower Cargo Compartment Fire Extinguisher Bottles	26-28
26-23-01B	Metered Bottles (Bottle 2B or 2C)	26-28
26-23-01D	Bottle Pressure Switches	26-28
26-23-02A	Lower Cargo Compartment Fire Extinguisher Flow Valves (Forward or Aft)	26-31
26-24-01A	Lavatory Fire Extinguisher Systems	26-33
26-26-01	Portable Fire Extinguishers (Passenger Cabin Only)	26-34

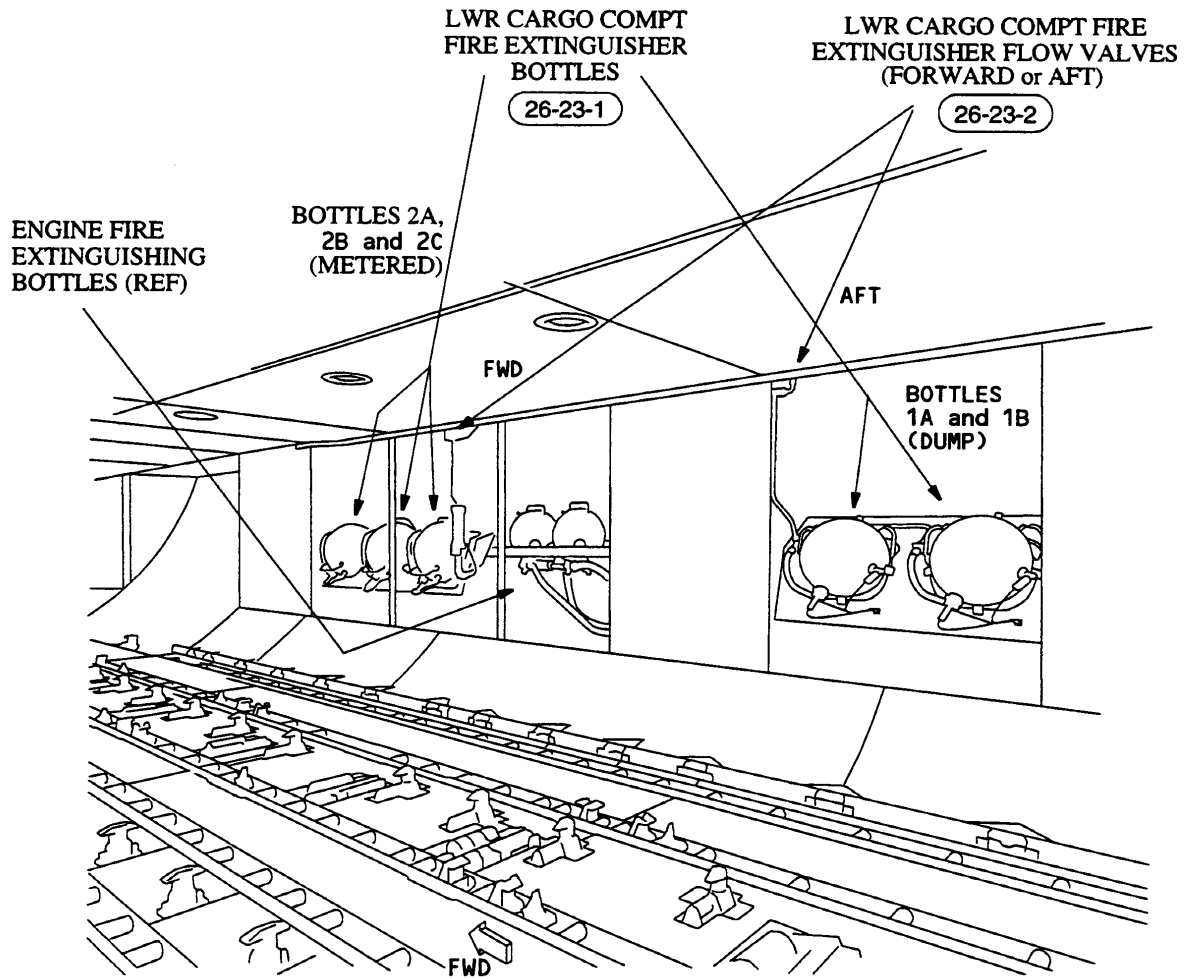




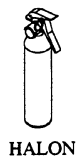
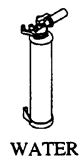
DUCT LEAK AND OVERHEAT DETECTION SYSTEM







LOWER FORWARD CARGO COMPARTMENT



PORTABLE FIRE EXTINGUISHERS
26-26-1

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-6

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD					REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION					
26-11-01	Engine Fire Detector Loops	Y	4	2	C	One per engine may be inoperative.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-11-01	Center Display Control Panel	___ Engine Fire Detector Loop(s) INOP

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
26-11-02	Engine Overheat Circuits	Y	4	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-11-02	Center Display Control Panel	___ Engine Overheat Circuit(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
26-13-01A	Lavatory Smoke Detection Systems “DISP.APPR.REQ’D.”	Y	8	0	C	(O)(M) May be inoperative provided: a) Lavatory waste container is empty, b) Lavatory door is locked closed and placarded, INOPERATIVE - DO NOT ENTER, and c) Lavatory is used only by crewmembers. NOTE: These provisions are not intended to prohibit lavatory use or inspections by crewmembers.
26-13-01B	Lavatory Call Light Smoke Detected Function	Y	8	0	C	NOTE: Attendant call and occupancy indications are considered NEF.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-13-01A	Logbook	___ Lavatory Smoke Detection System(s) INOP
26-13-01B	Logbook	___ Lavatory Call Light Smoke Detected Function INOP

(O) PROCEDURES

26-13-01A

Ensure that the affected lavatory is kept locked and is not entered except for use or inspection by crewmembers.

(M) PROCEDURES

26-13-01A

1. Check that the lavatory waste container is empty.
2. Close, lock and placard the lavatory door.
3. When desired, deactivate the inoperative smoke detector. (Deactivation is NOT required, but may be desirable for certain detector failures.) If smoke detector is to be deactivated, Maintenance is Required and Flight Crew May Not Placard.

- a. Open the following circuit breakers:

P110 panel LAV SMOKE DETECT-L

P210 panel LAV SMOKE DETECTOR RIGHT

- b. Loosen the screws on the face plate of the inoperative smoke detector and remove the face plate.

NOTE: The smoke detector is installed in ceiling of each lavatory.

- c. Remove the mounting screws that hold the smoke detector to the ceiling bracket.
- d. Disconnect the electrical connector from the smoke detector, and appropriately cap and stow the connector.
- e. Reattach the smoke detector to the ceiling bracket with the mounting screws and tighten the mounting screws.
- f. Replace the smoke detector face plate and tighten the face plate mounting screws.
- g. Close the circuit breakers opened in Step 3. a. above.
- h. Make entry in logbook stating lavatory smoke detector has been deactivated per MEL.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
OVERHEAD CREW REST SMOKE DETECTION SYSTEMS						
26-14-04A	Overhead Flight Crew / Attendant Rest (OFCR / OFAR) Smoke Detection Systems “DISP.APPR.REQ’D.”	N	2	0	C	(O)(M) May be inoperative provided: a) Inoperative smoke detection system is deactivated, and b) Associated crew rest is deactivated CLOSED. NOTE 1: These provisions are not intended to prohibit overhead crew / attendant rest inspections by crewmembers. NOTE 2: When the OFCR and/or OFAR is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
26-14-04B	Bunk Smoke Detectors “DISP.APPR.REQ’D.”	Y	10	0	C	May be inoperative provided: a) Adjacent aisle/common area smoke detector(s) operate normally, and b) Associated bunk curtain is secured open. NOTE: When an OFCR and/or OFAR bunk is inoperative, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
26-14-04C	Common Area Smoke Detectors – Overhead Flight Crew Rest (OFCR)	Y	2	1	C	One may be inoperative provided: a) Bunk smoke detectors operate normally, and b) Common area curtain (if installed) is secured open or removed.
26-14-04D	Common Area Smoke Detectors – Overhead Flight Attendant Rest (OFAR)	Y	4	1	C	May be inoperative provided no more than one bunk smoke detector in adjacent bunk area(s) is inoperative.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION						REMARKS OR EXCEPTIONS
OVERHEAD CREW REST SMOKE DETECTION SYSTEMS (Continued)						
26-14-04E	Aisle Smoke Detectors – OFAR	Y	2	1	C	May be inoperative provided adjacent aisle/ common area smoke detectors operate normally.
26-14-04F	Closet Smoke Detector	Y	1	0	C	(O)(M) May be inoperative provided: a) Closet is not used and personal items are removed, and b) A conspicuous barrier strap or rope is placed across the closet door with a placard attached stating the closet is not to be used.
26-14-04G	Vanity Smoke Detector – OFCR	Y	1	0	C	May be inoperative provided: a) All common area smoke detectors operate normally, b) Stairwell smoke detector operates normally, c) Common area curtain (if installed), is secured open or removed.
26-14-04H	Stairwell Smoke Detector	Y	1	0	C	May be inoperative provided: a) All common area smoke detectors operate normally, and b) Common area curtain (if installed), is secured open or removed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-14-04A	1. OFCR / OFAR Smoke Detection Panel 2. Center Display Control Panel	___ OFCR / OFAR Smoke Detection System(s) INOP
26-14-04B	1. OFCR / OFAR Smoke Detection Panel 2. Center Display Control Panel	___ OFCR / OFAR Individual Bunk Smoke Detector(s) INOP
26-14-04C	1. OFCR Smoke Detection Panel 2. Center Display Control Panel	OFCR Common Area Smoke Detector INOP
26-14-04D	1. OFAR Smoke Detection Panel 2. Center Display Control Panel	OFAR Common Area Smoke Detector INOP
26-14-04E	1. OFAR Smoke Detection Panel 2. Center Display Control Panel	OFAR Aisle Smoke Detector INOP
26-14-04F	1. OFCR Smoke Detection Panel 2. Center Display Control Panel	OFCR Closet Smoke Detector INOP
26-14-04G	1. OFCR Smoke Detection Panel 2. Center Display Control Panel	OFCR Vanity Smoke Detector INOP
26-14-04H	1. OFCR Smoke Detection Panel 2. Center Display Control Panel	OFCR Stairwell Smoke Detector INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-11

(O) PROCEDURES

26-14-04A

When the smoke detection system is inoperative, the associated crew rest is not available for inflight use and must be kept locked and not entered except to inspect it.

26-14-04F

An individual bunk(s) or closets with an inoperative smoke detector must not be used for any purpose including storing personal items.

(M) PROCEDURES

26-14-04A

To deactivate the inoperative smoke detection system:

1. Pull and secure the circuit breaker associated with the inoperative smoke detection system:
 - a. For the forward overhead flight crew rest - P210 Panel, UPR FWD MDL SMK DET
 - b. For the aft overhead flight attendant rest - P210 Panel, UPR AFT REST SMK DET
2. Remove all personal items from the associated crew rest.
NOTE: Blankets, pillows and other items normally used in the crew rest may remain.
3. Secure the associated crew rest entrance door closed.
4. Install placard INOPERATIVE – DO NOT ENTER.

26-14-04F

For an individual bunk(s) or closet with an inoperative smoke detector:

1. Remove all personal items from the associated bunk.
NOTE: Blankets, pillows and other items normally used in the crew rest may remain.
2. Secure a barrier strap or rope across the associated bunk
3. Install placard INOPERATIVE – DO NOT USE.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
26-15-01A	APU Fire Detection System "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Other procedures do not require use of APU, b) APU selector switch remains in the OFF position, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized
26-15-01B	APU Fire Detection System "DISP.APPR.REQ'D."	Y	1	0	C (O)(M) May be inoperative provided: a) Other procedures do not require use of APU, b) APU is used for ground operations only, c) APU is continuously monitored by ground personnel when operating, d) APU external control system operates normally, e) APU is not used during taxi, and f) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized
26-15-01C	APU Fire Detector Loops	Y	2	1	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-15-01A	1. Center Display Control Panel 2. Near APU Start Switch	1. APU Fire Detection System INOP 2. Do NOT Start APU
26-15-01B	Center Display Control Panel	APU Fire Detection System INOP
26-15-01C	Center Display Control Panel	___ APU Fire Detector Loop INOP

(O) PROCEDURES

26-15-01A, 26-15-01B

1. The APU cannot be used inflight when the fire detection system is inoperative. The APU selector must remain in the OFF position.

CONTINUED NEXT PAGE

2. Dispatch is **not** allowed if the APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

3. For dispatch when the APU cannot be used and its use is not required by other procedures:
- The flight must remain within 180 minutes of landing at a suitable airport.
 - Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.
4. Ensure APU is continually visually monitored when in use on the ground.

(M) PROCEDURES

26-15-01B

NOTE: If FIRE CARD APU or FIRE LOOP 1 APU and FIRE LOOP 2 APU are displayed, the APU fire detection system is inoperative. APU fire extinguisher auto discharge feature will also be inoperative.

- The APU must be continually visually monitored when the APU is in use on the ground.
- If an APU fire is observed, the APU fire extinguisher must be manually discharged using either the APU fire shutdown switch on the P40 service and APU shutdown panel (nose gear) or the APU and Cargo Fire Panel (P5) APU fire switch.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
LOWER CARGO COMPARTMENT SMOKE DETECTION SYSTEMS (FORWARD AND AFT)						
26-16-01A	Lower Cargo Compartment Smoke Detection Systems (Forward and Aft) "DISP.APPR.REQ'D."	N	2	0	C	(O)(M) May be inoperative provided associated cargo compartment remains empty, or is verified to contain only empty cargo handling equipment, ballast, and/or flyaway kits (see MEL/CDL Format Section on Page FM-13).
26-16-01B	Lower Cargo Compartment Smoke Detector Channels	Y	4	2	C	One channel per compartment may be inoperative.
26-16-01C	Lower Cargo Compartment Smoke Detector Fans	Y	4	2	C	One fan per compartment may be inoperative.
26-16-01D	Lower Cargo Compartment Smoke Detector Zones "DISP.APPR.REQ'D."	N	6	0	C	(O)(M) May be inoperative provided associated zone and adjacent zone(s) remains empty, or is verified to contain only empty cargo handling equipment, ballast, and/or flyaway kits (see MEL/CDL Format Section on Page FM-13).
26-16-01E	Lower Cargo Compartment Smoke Detector Heaters "DISP.APPR.REQ'D."	Y	6	0	C	(O) May be inoperative provided humid cargo is not carried in the associated compartment.
26-16-01F	Lower Cargo Compartment Smoke Detector Heaters "DISP.APPR.REQ'D."	Y	6	0	C	(O) May be inoperative provided procedures are used when humid cargo is carried in the associated compartment.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-16-01A	Center Display Control Panel	___ Cargo Compartment Smoke Detection System(s) INOP
26-16-01B	Center Display Control Panel	___ Cargo Compartment Smoke Detector Channel(s) INOP
26-16-01C	Center Display Control Panel	___ Cargo Compartment Smoke Detector Fan(s) INOP
26-16-01D	Center Display Control Panel	___ Cargo Compartment Smoke Detector Zone(s) INOP
26-16-01E	Center Display Control Panel	___ Cargo Compartment Smoke Detector Heater(s) INOP
26-16-01F	Center Display Control Panel	___ Cargo Compartment Smoke Detector Heater(s) INOP

CONTINUED NEXT PAGE

(O) PROCEDURES

26-16-01A, 26-16-01D

Associated cargo compartment(s) must remain empty and contain only empty cargo handling equipment, ballast, and/or flyaway kits (see [MEL/CDL Format Section located on Page FM-13](#)).

26-16-01E, 26-16-01F

1. For a Lower Cargo Compartment Smoke Detector Heater inoperative, humid cargo such as fruit, flowers or live animals may cause false fire warnings due to condensation of moisture inside the smoke detectors from moist or wet cargo.
 - a. If humid cargo is carried in the affected compartment, appropriate procedures should be established to wrap in plastic or otherwise enclose humid cargo in order to reduce the possibility of false fire warnings in the affected cargo compartment.
 - b. Flight crews should be made aware of the increased possibility of false fire warnings when carrying humid cargo with inoperative cargo smoke detection system heaters.

(M) PROCEDURES

NOTE 1: The Cargo Smoke Detection System (CSDS) operates normally for either the forward or aft cargo compartment with one channel inoperative and/or with one fan inoperative per compartment. If both channels or fans are inoperative in a compartment, the CSDS for that compartment is inoperative and the airplane may be dispatched with the relief provided for the inoperative system.

NOTE 2: The cargo compartment smoke detection zone boundaries are defined as follows (the aft and bulk cargo compartments must be considered as one compartment for fire protection system purposes):

	Forward		Aft and Bulk	
	From	To	From	To
Zone 1	Aft Wall	STA 772 Floor Beam	Bulk Compartment Aft Wall	Bulk Compartment Cargo Divider Net
Zone 2	STA 772 Floor Beam	STA 592 Floor Beam	Bulk Compartment Cargo Divider Net	STA 1664 Floor Beam
Zone 3	STA 592 Floor Beam	Forward Wall	STA 1664 Floor Beam	Forward Wall

26-16-01A, 26-16-01D

Associated cargo compartment(s) must remain empty and contain only empty cargo handling equipment, ballast, and/or flyaway kits (see [MEL/CDL Format Section located on Page FM-13](#)).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
26-17-01A	Wheel Well Fire Detection System	Y	1	0	C (O) May be inoperative provided BTMS operates normally.
26-17-01B	Wheel Well Fire Detection System "DISP.APPR.REQ'D."	Y	1	0	C (O)(M) May be inoperative provided an accepted procedure is used to ensure brakes are cool before engine start.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-17-01A	Center Display Control Panel	Wheel Well Fire Detection System INOP
26-17-01B	Center Display Control Panel	Wheel Well Fire Detection System INOP

(O) PROCEDURES

26-17-01A

After takeoff, check brake temperature indications periodically during the first 15 minutes of flight. If the BTMS registers 5 or higher, extend the landing gear for 10 minutes. Exception - In case of engine failure after V1, performance is the prime consideration. Landing gear should remain retracted until obstruction clearance requirement has been met, then extended for a 10 minute cooling period.

NOTE: The above procedure is to check for wheels becoming overheated by dragging brakes. Maximum brake temperature indication will occur 10 to 15 minutes after takeoff. Brake Temperature Monitoring System (BTMS) is usable inflight with gear retracted. The EICAS advisory message BRAKE TEMP is displayed when the hottest brake is registering 5 on BTMS and extinguishes as the hottest brake cools to a BTMS indication of 4.

26-17-01B

1. Avoid the possibility of retracting an overheated wheel by leaving landing gear extended for ten minutes after takeoff.

NOTE: Performance for the two-engine/gear down configuration is better than for the engine-out/gear up configuration.

2. In case of engine failure after V1, performance is the prime consideration. Landing gear should be retracted until obstruction clearance requirement has been met, then extended for a 10 minute cooling period.

CONTINUED NEXT PAGE

26-17-01B	WHEEL WELL FIRE DETECTION SYSTEM
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 4,500 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

(M) PROCEDURES

26-17-01B

1. Ensure brakes are cool to the touch prior to engine start.
2. If desired, the wheel well fire detection system may be deactivated.

NOTE: DET FIRE WHEEL WELL status message will be displayed when the wheel well fire detection system is deactivated.

- a. Access the wheel well fire detectors in the upper area of the left and right bays of the main wheel well.
- b. Disconnect, cap and stow the electrical connectors (D7589P and D7615P).

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-18

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
26-18-01	Wing Duct Leak Detector Loops	Y	4	2	C	One per side may be inoperative.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-18-01	Center Display Control Panel	___ Wing Duct Leak Detector Loop(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
26-18-02	Body Duct Leak Detector Loops	Y	2	1	C	May be inoperative provided both ASG cards in the opposite cardfile operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-18-02	Center Display Control Panel	___ Body Duct Leak Detector Loop INOP

OPERATIONS NOTE:

For the following status messages, both ASG cards in the opposite cardfile must be operative:

Status Message	Opposite Cardfile
BLEED LOOP 1 BODY	R Cardfile
BLEED LOOP 2 BODY	L Cardfile

1. For BLEED LOOP 1 BODY message, both ASG cards in the Right Cardfile must operate normally. Both ASG cards in the Right Cardfile are operating normally if the RSCF ASG CARD L or R messages are not displayed.
2. For BLEED LOOP 2 BODY message, both ASG cards in the Left Cardfile must operate normally. Both ASG cards in the Left Cardfile are operating normally if the LSCF ASG CARD L or R messages are not displayed.

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-20

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
26-18-03	Strut Overheat Detector Loops	Y	4	2	C	One per side may be inoperative.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-18-03	Center Display Control Panel	___ Strut Overheat Detector Loop(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
26-18-04A	Engine Fan Case Overheat Detection System (-200ER)	N	2	1	C	One may be inoperative provided one engine overheat circuit operates normally on the associated engine.
26-18-04B	Engine Fan Case Overheat Detection System (-200LR) “DISP.APPR.REQ'D.”	N	2	1	C	One may be inoperative provided: a) Associated engine anti-ice selector remains OFF, b) Airplane is not operated in known or forecast icing conditions, and c) Flight remains within 120 minutes of landing at a suitable airport.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-18-04A	Center Display Control Panel	___ Engine Fancase Overheat Detection System INOP
26-18-04B	Center Display Control Panel	___ Engine Fancase Overheat Detection System INOP

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-22

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
26-19-01	E/E Cooling Smoke Detector Channels	Y	2	1	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-19-01	Center Display Control Panel	___ E/E Cooling Smoke Detector Channel INOP

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-23

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
26-21-01	Fire BTL DISCH Lights (Engine, APU, Cargo)	Y	4	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-21-01	Near Affected BTL DISCH Light(s)	___ Fire BTL DISCH Light(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	FIRE EXTINGUISHING SQUIB TEST SYSTEM				
26-21-02A	Fire Extinguishing Squib Test System	N	1	0	C (M) May be inoperative provided squib electrical continuity is verified ONCE EACH FLIGHT DAY. (Log Book Entry Required) Repetitive Check Required (Yellow Placard)
26-21-02B	Cargo Squib Test System "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided cargo compartments remains empty, or are verified to contain only empty cargo handling equipment, ballast, and/or flyaway kits (see MEL/CDL Format Section on Page FM-13).

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-21-02A	Center Display Control Panel	Fire Extinguishing Squib Test System INOP
26-21-02B	Center Display Control Panel	Cargo Squib Test System INOP

(O) PROCEDURES

26-21-02B

See [MEL/CDL Format Section located on Page FM-13](#) for cargo loading restrictions.

(M) PROCEDURES

26-21-02A

NOTE: With the CARGO SQUIB TEST and ENG/APU SQUIB TEST EICAS status messages displayed simultaneously, the system fault may be a failed Squib Test Control relay. The airplane may be dispatched under this item by replacing the relay with another operative relay from the ELMS cabinet, successfully accomplishing the fire extinguishing squib test, and re-installing the operative relay back in the ELMS cabinet.

1. If the Squib Test Control relay is believed to be inoperative, verify fire extinguishing bottle squib electrical continuity by replacing the Squib Test Control relay and accomplishing the fire extinguishing squib test.

NOTE: If the ENG/APU SQUIB TEST status message is displayed, the following test must be satisfactorily accomplished **ONCE EACH FLIGHT DAY**.

- a. Open the P310 panel FIRE EXT APU and FIRE EXT CGO BTL 1A & VLV SQB circuit breakers.
- b. Remove the Squib Test Control relay K26010 from the P310 Panel.
- c. Open the circuit breaker(s) associated with the replacement relay:

CONTINUED NEXT PAGE

Relay	P210 Panel Circuit Breaker to open		
K21007, R DR HEAT	R DR 1-4 HTR CTRL	R DR 3 HTR	R DR 4 HTR
K21008, R ECONO COOL VALVE RLY	R ECV/FCV POS SNSR		
K21263, BULK CGO VENT FAN PWR RLY	BULK CGO VENT FAN	BULK CGO VENT FAN CTRL	
K21443, BULK CGO HT SOV	BULK CGO HT SOV		
K21444, BULK CGO HT TCV	BULK CGO HT TCV		

- d. Remove the replacement relay and install it in the Squib Test Control relay location.
- e. Close the P310 panel FIRE EXT APU and FIRE EXT CGO BTL 1A & VLV SQB circuit breakers.
- f. Do a fire extinguisher squib test (opening and closing these circuit breakers automatically starts a test of the squibs):
 - 1) With airplane power applied, open the following circuit breakers on the P310 panel: PSU B PRI, PSU A PRI, PSU B ALTN, and PSU A ALTN.
 - 2) Close the following circuit breakers on the P310 panel: PSU B PRI, PSU A PRI, PSU B ALTN, and PSU A ALTN.
 - 3) Ensure that the CARGO SQUIB TEST and ENG/APU SQUIB TEST EICAS status messages are not displayed.
- g. Open the P310 panel FIRE EXT APU and FIRE EXT CGO BTL 1A & VLV SQB circuit breakers.
- h. Remove the replacement relay from the Squib Test Control relay location and re-install it in its original location.
- i. Close the P210 panel circuit breaker(s) opened in Step 1c for the replacement relay.
- j. Do the applicable operational test for the re-installed relay.
- k. Re-install the inoperative Squib Test Control relay K26010 in the P310 panel.

NOTE: The CARGO SQUIB TEST, ENG/APU SQUIB TEST status messages will again be displayed upon the next landing and subsequent engine shutdown, or upon the next power interruption or when the test is manually selected from the Maintenance Access Terminal. This is normal operation provided squib electrical continuity is verified once per flight day using this procedure.

- l. Close the P310 panel FIRE EXT APU and FIRE EXT CGO BTL 1A & VLV SQB circuit breakers.

26-21-02B

All cargo compartments must remain empty and contain only empty cargo handling equipment, ballast, and/or flyaway kits (see [MEL/CDL Format Section located on Page FM-13](#)).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
26-22-01	APU Fire Extinguisher System "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Other procedures do not require use of APU, b) APU selector switch remains in the OFF position, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-22-01	1. Near APU Fire Handle 2. Do NOT Start APU	1. APU Fire Extinguisher System INOP 2. Do NOT Start APU

(O) PROCEDURES

- The APU cannot be used for ground operations or in flight when the fire extinguisher system is inoperative.
- The APU Selector must remain in the OFF position.
- Dispatch is not allowed if the APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

- For dispatch when the APU cannot be used and its use is not required by other procedures:
 - The flight must remain within 180 minutes of landing at a suitable airport.
 - Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-27

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
26-22-02	APU Auto Discharge	N	1	0	C (M) May be inoperative provided APU is monitored during APU ground operations for fire warning.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-22-02	Near APU Fire Handle	APU Auto Discharge INOP

(M) PROCEDURES

1. Flight crew or maintenance personnel must monitor the APU control panel located on the nose gear or on the flight deck overhead panel when the APU is in use on the ground.
2. If an APU fire is annunciated, the APU fire extinguisher must be manually discharged by the operator using the APU bottle discharge switch on the remote control panel on the nose gear or the APU fire handle on the flight deck.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
LOWER CARGO COMPARTMENT FIRE EXTINGUISHER BOTTLES					
26-23-01A	Lower Cargo Compartment Fire Extinguisher Bottles "DISP.APPR.REQ'D."	N	5	0	C (O)(M) May be inoperative provided cargo compartments remain empty, or are verified to contain only empty cargo handling equipment, ballast, and/or flyaway kits (see MEL/CDL Format Section on Page FM-13).
26-23-01B	Metered Bottles (Bottle 2B or 2C) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative provided: a) Bottles 1A and 1B operate normally, b) Metered bottle 2A operates normally, c) Associated Bottle is deactivated, d) Airplane is operated pressurized, and e) Flight remains within 120 minutes of landing at a suitable airport.
26-23-01C	Metered Bottles (Bottles 2B and 2C) "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Bottles 1A and 1B operate normally, b) Metered bottle 2A operates normally, c) Associated Bottle is deactivated, d) Airplane is operated pressurized, and e) Flight remains within 60 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized
26-23-01D	Bottle Pressure Switches	N	5	0	C (M) May be inoperative provided: a) Associated bottle is verified full, and b) Associated bottle squib is verified operating normally PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-23-01A	Cargo Fire Control Panel	Cargo Compartment Fire Extinguisher Bottle(s) ____ INOP
26-23-01B	Cargo Fire Control Panel	Cargo Compartment Fire Extinguisher Bottle ____ INOP
26-23-01C	Cargo Fire Control Panel	Cargo Compartment Fire Extinguisher Bottle(s) ____ INOP
26-23-01D	Cargo Fire Control Panel	Cargo Compartment Fire Bottle ____ Pressure Switch(es) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-29

(O) PROCEDURES

26-23-01A

See [MEL/CDL Format Section located on Page FM-13](#) for cargo loading restrictions.

26-23-01B, 26-23-01C

Refer to Remarks or Exceptions section on Page 26-28.

NOTE: Due to a parts change on the Fire Extinguisher Bottle Filter / Regulator, with two bottles inoperative, the flight must remain within 60 minutes of landing at a suitable airport.

(M) PROCEDURES

26-23-01A

All cargo compartments **must** remain empty and contain only empty cargo handling equipment, ballast, and/or flyaway kits (see [MEL/CDL Format Section located on Page FM-13](#)).

26-23-01B, 26-23-01C

Deactivate the inoperative fire extinguishing bottle(s).

1. Gain access to the right side of the forward cargo compartment and remove the sidewall lining to expose the inoperative bottle(s) (AMM 25-52-06/401).
2. Install the access platform (Tool J21003-1) near the inoperative bottle (if available).
3. For bottle 2B or 2C, open the P310 Panel FIRE EXT CGO BTL 2A, 2B & 2C circuit breaker.
4. Disconnect the flex hose assembly from the inoperative bottle and plumbing. Cap (MS21913-10, or equivalent) the ends and stow the hose near the bottle.
5. Cap the discharge head of the bottle with a pressure cap (BACC14AD-10, or equivalent).
6. Cap the plumbing connection with a pressure cap (BACC14AD-10, or equivalent).
7. Disconnect, cap and stow the electrical connector from the squib.
 - a. For bottle 2B (B26016), electrical connector DB26016A.
 - b. For bottle 2C (B26017), electrical connector DB26017A.
8. Cap the squib (protective cover is attached to the bottle). Do **not** use a shunt plug. A shunt plug may damage the squib pins.
9. Close the P310 Panel FIRE EXT CGO BTL 2A, 2B & 2C circuit breaker opened in Step 3. above.
10. Remove the access platform (if used).
11. Re-install the sidewall lining (AMM 25-52-06/401).
12. Initiate a fire extinguisher squib test using one of the following methods:
 - a. Use a Maintenance Access Terminal (MAT) to do the operational test of the cargo squibs (AMM 26-23-00/501). The TEST CONDITION on the MAT will show FAILED due to the deactivated bottle.
 - b. Cycle power to the ELMS P310 panel (airplane power applied) by opening P310 panel circuit breakers PSU B PRI, PSU A PRI, PSU B ALTN, and PSU A ALTN and then closing them. Wait two minutes.
13. Verify fire bottle status message is only displayed for the deactivated bottle(s).

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 26 Fire Protection	R14 05/09/16 Page 26-30

26-23-01D

NOTE: For a bottle pressure switch failed closed when the bottle pressure is normal or the bottle pressure is low, or the bottle squib fails a squib test, the associated bottle status message will be displayed.

1. **PRIOR TO EACH DEPARTURE** - Verify the associated bottle is full and verify the associated squib operates normally.
2. Confirm the associated bottle pressure switch is failed closed.
 - a. Display the Fire Protection maintenance page.
 - b. Confirm the associated squib condition under the Cargo Fire Extinguishing System is listed as NORM.
 - c. Confirm the associated bottle pressure condition under the Cargo Fire Extinguishing System is listed as LOW.
3. Remove, weigh and reinstall the associated bottle.
 - a. Remove the associated bottle from the airplane (AMM 26-23-01/401).
 - b. Weigh the bottle. The bottle must weigh the same as the weight on the data plate +/- 0.3 lb.

NOTE: The measured weight of the bottle includes the charged bottle, the inspection tag on the bottle, and the swivel assemblies. If the squib cartridges are not installed on the fire extinguisher bottle, do not install them. Weigh the squib cartridges as loose parts and include the weight of the squib cartridges in the measured weight. If the squib cartridges are installed, weigh the bottle with the cartridges installed. Remove all protective covers when the parts are weighed.

- c. Re-install the bottle in the airplane (AMM 26-23-01/401). It is not necessary to perform the bottle pressure switch operational test associated with this procedure. Confirm the bottle squib operational test condition shows PASSED.
4. **PRIOR TO EACH DEPARTURE** - Verify the associated bottle squib is operating normally.
 - a. If an automatic squib test has not occurred recently (less than 12 hours), manually initiate a fire extinguisher squib test using one of the following methods.

NOTE: A squib test is automatically initiated upon airplane power-up or after landing.

 - 1) Use a Maintenance Access Terminal (MAT) to do the operational test of the cargo squibs (AMM 26-23-00/501). The TEST CONDITION on the MAT will show PASSED.
 - 2) Cycle power to the ELMS P310 panel (airplane power applied) by opening P310 panel circuit breakers PSU B PRI, PSU A PRI, PSU B ALTN, and PSU A ALTN and then closing them. Wait two minutes.
 - b. Display the Fire Protection maintenance page and verify the associated squib condition under the Cargo Fire Extinguishing System is listed as NORM.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
26-23-02A	Lower Cargo Compartment Fire Extinguisher Flow Valves (Forward or Aft) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative provided: a) Associated flow valve is capped, b) Associated flow valve squib electrical connectors are capped and stowed, and c) Associated cargo compartment remains empty, or is verified to contain only empty cargo handling equipment, ballast, and/or flyaway kits (see MEL/CDL Format Section on Page FM-13).
26-23-02B	Lower Cargo Compartment Fire Extinguisher Flow Valves (Forward and/or Aft) "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided cargo compartments remains empty, or are verified to contain only empty cargo handling equipment, ballast, and/or flyaway kits (see MEL/CDL Format Section on Page FM-13).

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-23-02A	Cargo Fire Control Panel	___ Lower Cargo Compartment Fire Extinguisher Flow Valve INOP
26-23-02B	Cargo Fire Control Panel	Both Lower Cargo Compartment Fire Extinguisher Flow Valves INOP

(O) PROCEDURES

26-23-02A, 26-23-02B

See [MEL/CDL Format Section located on Page FM-13](#) for cargo loading restrictions.

(M) PROCEDURES

26-23-02A

NOTE: The aft and bulk cargo compartments must be considered as one compartment for fire protection system purposes.

1. Open the following P310 Panel and circuit breakers:

FIRE EXT CGO BTL 1A & VLV SQB	FIRE EXT CGO BTL 1B & VLV SQB

2. Gain access to the right side of the forward cargo compartment and open the appropriate access panel to expose the inoperative fire extinguishing flow valve. Refer to B777 Component Locator Guide or AMM 26-00-00/901 for fire extinguishing flow valve location.
3. Install the access platform (Tool J21003-1) near the inoperative flow valve (if available).
4. Disconnect the inlet tube from the inoperative flow valve and the plumbing connection. Plug (MS21913-10) both ends and stow the inlet tube near the flow valve.
5. Cap the inlet port of the flow valve with a pressure cap (BACC14AD-10).
6. Cap the plumbing connection with a pressure cap (BACC14AD-10).
7. Disconnect, cap and stow the electrical connectors from the flow valve squibs (2 squibs per valve):

CONTINUED NEXT PAGE

Flow Valve	Electrical Connector
Fwd Flow Valve, V26201	DV26201A
Fwd Flow Valve, V26201	DV26201B
Aft Flow Valve, V26202	DV26202A
Aft Flow Valve, V26202	DV26202B

8. Cap the squibs (protective covers are attached to the valve).

CAUTION: Do not use a shunt plug on the squib. A shunt plug may damage the squib pins.

9. Close the P310 Panel circuit breakers opened in Step 1. on the previous page.
10. Remove the access platform (if used).
11. Close the access panel.
12. Do a fire extinguisher squib test:
 - a. With airplane power applied, opening all and then closing all of the following P310 Panel circuit breakers automatically starts a test of the squibs:

PSU A PRI	PSU A ALTN
PSU B PRI	PSU B ALTN

- b. Ensure no additional flow valve status messages are displayed (messages should only be displayed for the deactivated flow valve).
13. The associated cargo compartments must remain empty and contain only empty cargo handling equipment, ballast, and/or flyaway kits (see [MEL/CDL Format Section located on Page FM-13](#)).

26-23-02B

All cargo compartments must remain empty and contain only empty cargo handling equipment, ballast, and/or flyaway kits (see [MEL/CDL Format Section located on Page FM-13](#)).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
26-24-01A	Lavatory Fire Extinguisher Systems	Y	8	0	C	May be inoperative for each lavatory provided associated lavatory smoke detection system operates normally.
26-24-01B	Lavatory Fire Extinguisher Systems "DISP.APPR.REQ'D."	Y	8	0	C	(O)(M) May be inoperative for each lavatory provided associated: a) Lavatory waste container is empty, b) Lavatory door is locked closed and placarded, INOPERATIVE - DO NOT ENTER, and c) Lavatory is used only by crewmembers. NOTE: These provisions are not intended to preclude lavatory use or inspections by crewmembers.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-24-01A	Logbook	___ Lavatory Fire Extinguisher System(s) INOP
26-24-01B	Logbook	___ Lavatory Fire Extinguisher System(s) INOP

(O) PROCEDURES

26-24-01B

Ensure that the affected lavatory is kept locked and is not entered except for use or inspection by crewmembers.

(M) PROCEDURES

26-24-01B

1. Check that the lavatory waste container is empty.
2. Close, lock and placard the lavatory door.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
26-26-01	Portable Fire Extinguishers (Passenger Cabin Only)	Y	6	4 C	(M) One H2O type extinguisher (forward galley stowage compartment across from 1R flight attendant jumpseat) and/or one HALON extinguisher (behind last row of seats in A-Zone, R/H side) may be inoperative provided the inoperative fire extinguisher is tagged inoperative, removed from the installed location, and placed out of sight so it cannot be mistaken for a functional unit. NOTE: The cockpit HALON extinguisher must be operative.

MEL ITEM	TAB LOCATION	PLACARD TEXT
26-26-01	Logbook	___ Portable Fire Extinguishers INOP/Missing

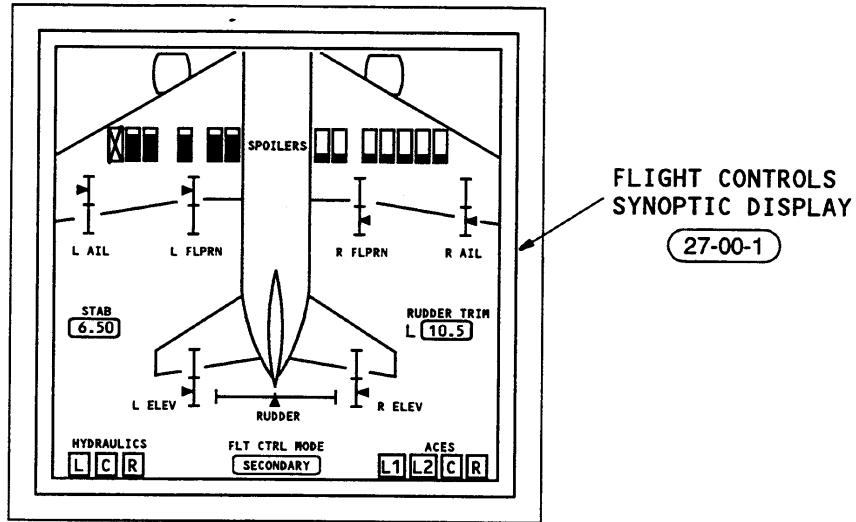
NOTE: Portable fire extinguishers are installed in the Overhead Flight Crew and Flight Attendant Rest (OFCR / OFAR) compartments. Refer to [MEL 25-29-04](#) for relief for those fire extinguishers.

(M) PROCEDURES

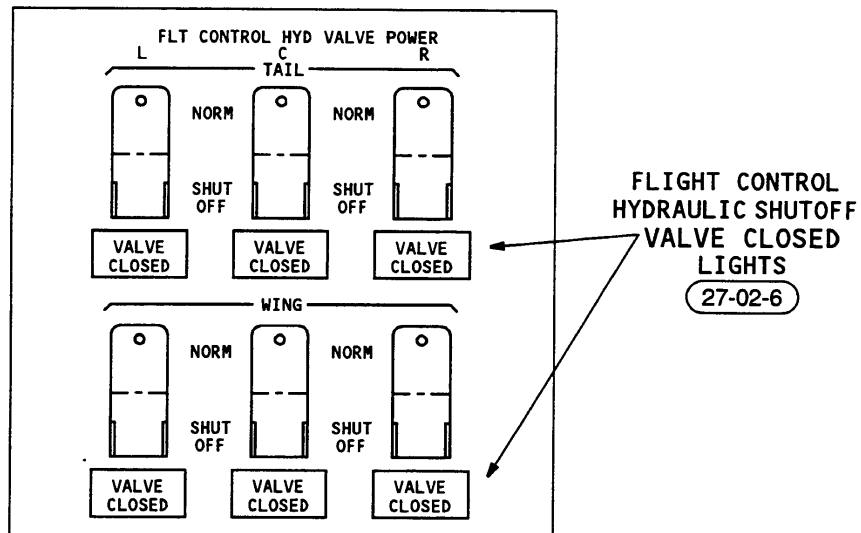
Refer to Remarks or Exceptions section above.

ATA 27 Contents

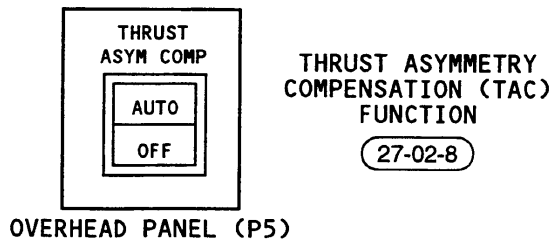
27-00-01	Flight Controls Synoptic Display	27-6
27-02-01	Bank Angle Protection.....	27-7
27-02-02	Primary Flight Computer (PFC) Lanes.....	27-8
27-02-03	Primary Flight Computer (PFC) Channels	27-9
27-02-04	PFCS Interface.....	27-11
27-02-05	Actuator Pressure Sensors	27-12
27-02-06	Flight Control Hydraulic Shutoff Valve Systems	27-13
27-02-07	Primary Flight Computer DISC Light.....	27-14
27-02-08A	Thrust Asymmetry Compensation (TAC) Function	27-15
27-02-08B	THRUST ASYM COMP Switch Lights (OFF Light).....	27-15
27-02-08C	THRUST ASYM COMP Switch Lights (AUTO Light)	27-15
27-03-01	Flap / Slat Control Lanes.....	27-16
27-03-02	Flap Secondary Control	27-17
27-03-03	Slat Secondary Control	27-18
27-11-01	Aileron Trim System.....	27-19
27-11-02	Control Wheel Position Transducers.....	27-20
27-11-03	Aileron Power Control Units (PCUs) (-200 LR only)	27-21
27-11-04	Flaperon Power Control Units (PCUs) (-200 LR only)	27-22
	RUDDER TRIM SYSTEM.....	27-23
27-21-01A	Rudder Trim Control High Rate Function.....	27-23
27-21-01B	Rudder MANUAL TRIM CANCEL Switch	27-23
27-21-02	Rudder Trim Indicator.....	27-24
27-31-01	Control Column Position Transducers	27-25
27-32-01A	Stall Warning Systems	27-26
27-32-01B	Stick Shakers	27-26
27-41-01	Control Wheel Pitch Trim Switches.....	27-27
27-41-02	Alternate Pitch Trim Position Switches	27-28
27-41-03	Stabilizer Trim Rate Solenoid Valves.....	27-29
27-48-01	STAB Position Indicators	27-30
27-48-02	Stabilizer Position Transducer Modules.....	27-31
27-48-04	Nose Gear Pressure Transducer	27-32
27-51-01	Inboard Flap, Outboard Support Mechanism Springs (No. 3 & No. 6 Supports).....	27-33
27-51-02	ALTN FLAPS ARM Switch ALTN Light.....	27-34
27-59-01	Flap / Slat Skew Sensors	27-35
27-61-01	Speedbrake Lever Position Transducers.....	27-36
27-61-03	Spoiler Power Control Units (PCUs) (-200 LR only)	27-37
27-62-01	Automatic Speedbrake Function	27-39

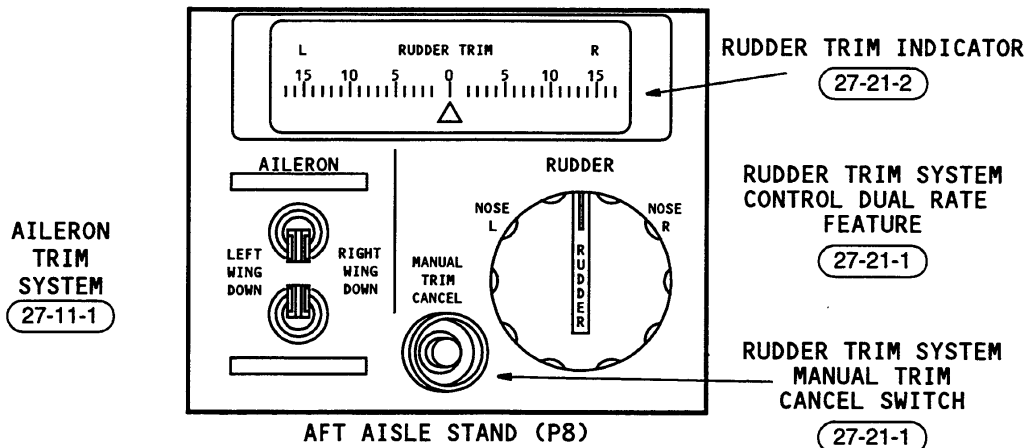


FLIGHT CONTROL
HYDRAULIC SHUTOFF
VALVES
(27-02-7)

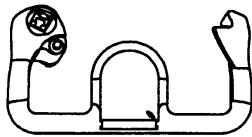


FLIGHT CONTROL HYDRAULIC POWER PANEL (P61)



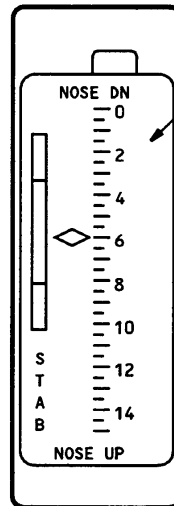


CONTROL WHEEL PITCH TRIM SWITCHES (2)
(27-41-1)



CONTROL WHEEL POSITION TRANSDUCERS
(27-11-2)

CONTROL COLUMN POSITION TRANSDUCERS
(27-31-1)



CONTROL STAND (P10)

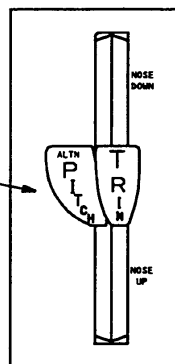
STAB POSITION INDICATORS (2)
(27-48-1)

STABILIZER POSITION TRANSDUCER MODULES
(27-48-2)

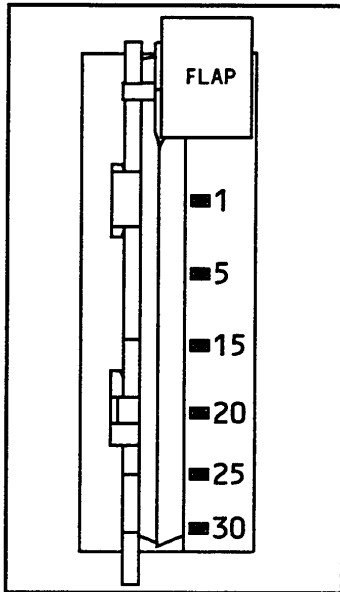
NOSE GEAR PRESSURE SWITCH
(27-48-3)

STABILIZER TRIM RATE SOLENOID VALVES
(27-41-3)

ALTERNATE PITCH TRIM POSITION SWITCHES
(27-41-2)



CONTROL STAND (P10)



CONTROL STAND (P10)

FLAP/SLAT
CONTROL LANES
(27-03-1)

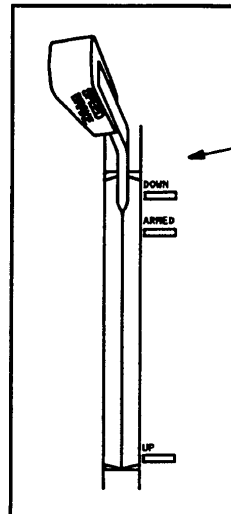
FLAP SECONDARY
CONTROL
(27-03-2)

SLAT SECONDARY
CONTROL
(27-03-3)

FLAP/SLAT
SKEW SENSORS
(27-59-1)

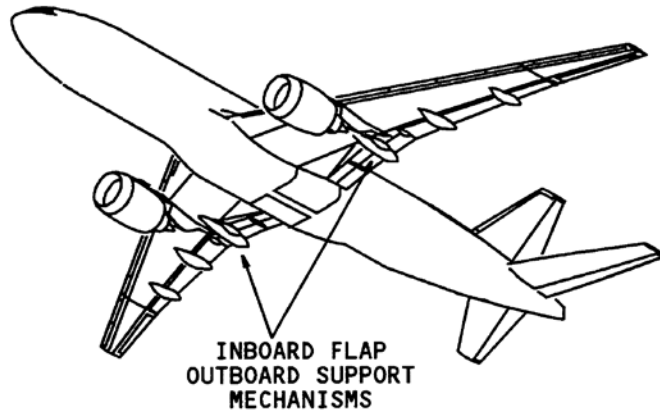
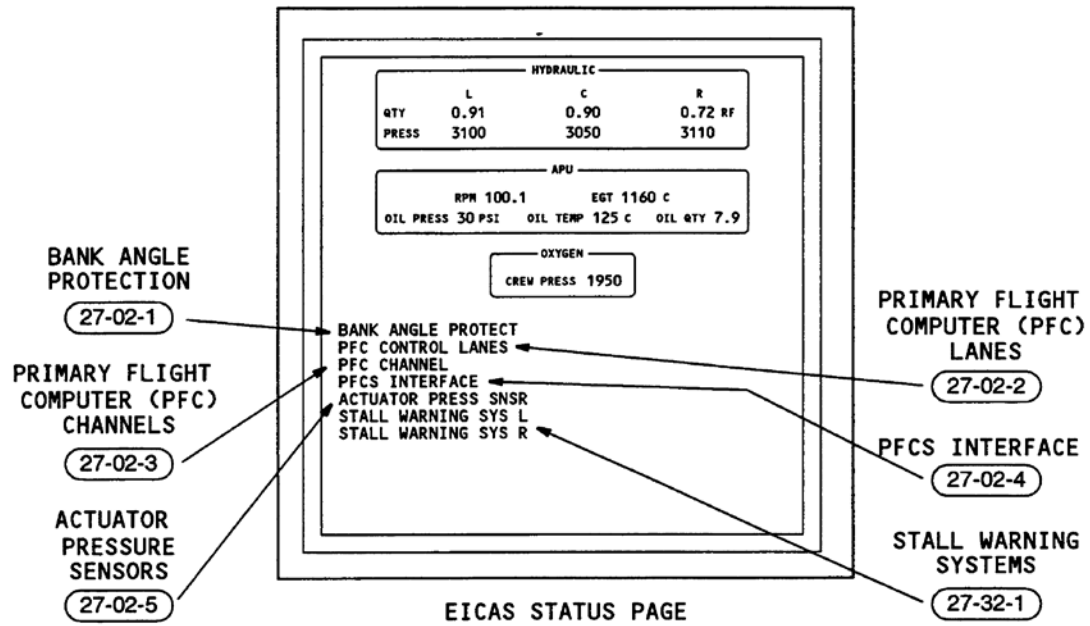
AUTOMATIC SPEEDBRAKE
FUNCTION
(27-62-1)

SPEEDBRAKE LEVER
POSITION TRANSDUCERS
(27-61-1)



SPEEDBRAKE
LEVER

CONTROL STAND (P10)



**INBOARD FLAP, OUTBOARD
SUPPORT MECHANISM SPRINGS
(NO. 3 & NO. 6 SUPPORTS)**

(27-51-1)

 DELTA	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-6

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-00-01	Flight Controls Synoptic Display	Y	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-00-01	Center Display Control Panel	Flight Controls Synoptic Display INOP

OPERATIONS NOTE:

If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) may restore the missing data. Synoptic Displays containing missing data may continue to be used to the extent remaining data is useful.

NOTE: Airplane system faults will be annunciated by EICAS alerting and status messages.

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-02-01	Bank Angle Protection	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-01	Center Display Control Panel	Bank Angle Protection INOP

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-8

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-02-02	Primary Flight Computer (PFC) Lanes	N	9	7	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-02	Center Display Control Panel	Primary Flight Computer Lane(s) ___ INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-02-03	Primary Flight Computer (PFC) Channels "DISP.APPR.REQ'D."	N	3	2	A (O)(M) May be inoperative deactivated provided: a) Operations are limited to three flights before repairs are made, and b) Approach minimums do not require its use. <u>CAT III</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-03	Near Primary Flight Computer Switch	Primary Flight Computer Channel INOP

(O) PROCEDURES

- For one PFC channel inoperative, the autoland system is not fail-operational and the advisory message NO LAND 3 will be displayed.
- The PFCS self-test conducted after hydraulic shutdown during the Shutdown Procedure is inhibited when a PFC channel is inoperative.

(M) PROCEDURES

Determine which PFC channel is inoperative, then deactivate the inoperative channel.

NOTE: If one or more lanes in the remaining two channels is inoperative, the FLIGHT CONTROL SYS status message will be displayed.

- Use the Maintenance Access Terminal (MAT) to review CMC data to determine which PFC is inoperative.
 - Using the MAT menu system, select EXISTING FLIGHT DECK EFFECTS.
 - Look for the PFC CHANNEL status message by using the scroll bar as necessary. Existing correlated maintenance messages are listed below the status message.
 - If one or more of the maintenance messages listed in the following table are displayed below the PFC CHANNEL status message on the MAT, then the PFC listed at the top of the column in the table is inoperative.

PFC-L	PFC-C	PFC-R
23-81001	23-81002	23-81003
27-14018	27-14019	27-14020
27-15000	27-15003	27-15006
27-15001	27-15004	27-15007
27-15002	27-15005	27-15008
27-15100	27-15101	27-15102
27-19101	27-19102	27-19103
27-19201	27-19202	27-19203
27-19301	27-19302	27-19303

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-10

2. To deactivate the inoperative channel, pull and secure the PFC LANE 1, PFC LANE 2, and PFC LANE 3 circuit breakers for the associated PFC:
 - a. The circuit breakers for the L PFC are located on PSA-L in the E1-6 rack.
 - b. The circuit breakers for the C PFC are located on PSA-C in the E2-6 rack.
 - c. The circuit breakers for the R PFC are located on PSA-R in the E5-1 rack.

CAUTION: Strict adherence to following procedure is required to prevent discharge of the PSA battery when a PFC is deactivated. Note on placard "BATT INTLK circuit breaker on X (L, C, R) PFC PSA must be opened if electrical power is removed from aircraft".

3. If electrical power is shutdown with a PFC deactivated, the associated Power Supply Assembly (PSA) battery will discharge. To prevent discharge of the PSA battery when a PFC is deactivated:
 - a. When electrical power is shutdown, open the BATT INTLK circuit breaker located on the front panel of the associated PSA.
 - b. When electrical power is restored, close the BATT INTLK circuit breaker on the associated PSA.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-02-04	PFCS Interface "DISP.APPR.REQ'D."	N	1	0	C (M) May be inoperative provided landing gear truck tilt pressure is verified to be normal PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-04	Center Display Control Panel	PFCS Interface Status Msg Displayed

OPERATIONS NOTE:

The status message PFCS INTERFACE will be displayed if one or more allowable PFC interface failures are detected. If additional interface failures occur which are not allowed for dispatch, the FLIGHT CONTROL SYS status message will be displayed on EICAS.

(M) PROCEDURES

PRIOR TO EACH DEPARTURE:

1. Ensure landing gear lever is in the DOWN position.
2. Pressurize the center hydraulic system.
3. After 2 minutes, verify pressure readings for the L TRUCK TILT and R TRUCK TILT hydraulic lines are 2700 to 3200 psi on the LANDING GEAR ACTN / INDN EICAS Maintenance Page.
4. If low pressure is detected in one or both truck tilt lines, the landing gear may not fully retract.

 DELTA	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-12

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-02-05	Actuator Pressure Sensors "Contact MCC"	Y	7	6 B	One flaperon or rudder sensor may be inoperative.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-05	Center Display Control Panel	___ Actuator Pressure Sensor INOP

OPERATIONS NOTE:

The status message ACTUATOR PRESS SNSR will be displayed if an allowable actuator pressure sensor failure is detected (one flaperon or one rudder sensor). If any additional sensor failures are detected, the FLIGHT CONTROL SYS status message will be displayed on EICAS.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-02-06	Flight Control Hydraulic Shutoff Valve Systems	N	6	3	C (M) May be inoperative provided associated valve is deactivated OPEN.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-06	Flight Control Hydraulic Valve Control Panel – P61	___ Flight Control Hydraulic Shutoff Valve System(s) INOP

(M) PROCEDURES

NOTE: The flight control hydraulic shutoff valve system includes the SOV and associated VALVE CLOSED light and FLT CONTROL VALVE advisory message.

- Position associated FLT CONTROL HYD POWER valve switch(es) in the NORM position. These switches are located next to the VALVE CLOSED lights on the P61 overhead maintenance panel on the flight deck.
- Pull and secure the associated circuit breaker for each inoperative flight control hydraulic shutoff valve. The circuit breakers are located as follows:

P110 Panel	P210 Panel
L TAIL valve, circuit breaker L FC SOV TAIL	R TAIL valve, circuit breaker R FC SOV TAIL
L WING valve, circuit breaker L FC SOV WG	R WING valve, circuit breaker R FC SOV WG
C TAIL valve, circuit breaker C FC SOV TAIL	
C WING valve, circuit breaker C FC SOV WG	

- Manually position the lever on each associated shutoff valve to the open position. The shutoff valves are located as follows:
 - The L TAIL shutoff valve is located inside the Inboard Fixed Trailing Edge Panel 552HB. This panel is forward of the inboard end of the flaperon on the left wing.
 - The L WING shutoff valve is located inside the Fixed Trailing Edge Panel 552JB. This panel is forward of the center of the flaperon on the left wing. Removal of panel 552JB requires removal of the left engine strut trailing edge.
 - The C TAIL and C WING shutoff valves are located on the aft bulkhead of the left main landing gear wheel well.
 - The R TAIL shutoff valve is located in the right main landing gear wheel well, on the top panel near the aft outboard corner.
 - The R WING shutoff valve is located inside the Fixed Trailing Edge Panel 652JB. This panel is forward of the center of the flaperon on the right wing. Removal of panel 652JB requires removal of the right engine strut trailing edge.
- Install lockwire through the holes provided on the lever and valve body to hold the shutoff valve lever in the open position.
- If the EICAS alerting message FLIGHT CONTROL VALVE remains displayed and/or the associated shutoff valve VALVE CLOSED light on the P61 Maintenance Panel remains illuminated after the valve is deactivated open, electrically disconnect the deactivated valve.
 - Disconnect, cap and securely stow the electrical connector for the inoperative valve as follows:

Left Tail, Disconnect DV27101	Center Tail, Disconnect DV27103	Right Tail, Disconnect DV27102
Left Wing, Disconnect DV27100	Center Wing, Disconnect DV27099	Right Wing, Disconnect DV27098

- Replace any panels removed for valve access.

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-14

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
27-02-07	Primary Flight Computer DISC Light	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-07	Near Primary Flight Control Disconnect Switch on P5 Panel	Primary Flight Computer DISC Light INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION						REMARKS OR EXCEPTIONS
27-02-08A	Thrust Asymmetry Compensation (TAC) Function	Y	1	0	C	
27-02-08B	THRUST ASYM COMP Switch Lights (OFF Light)	Y	1	0	C	
27-02-08C	THRUST ASYM COMP Switch Lights (AUTO Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-02-08A	Near THRUST ASYM COMP Switch	Thrust Asymmetry Compensation Function INOP
27-02-08B	Near THRUST ASYM COMP Switch	THRUST ASYM COMP Switch Lights OFF Light INOP
27-02-08C	Near THRUST ASYM COMP Switch	THRUST ASYM COMP Switch Lights AUTO Light INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-03-01	Flap / Slat Control Lanes	N	2	1 C	(M) May be inoperative provided: a) Flap lever control position sensor is verified to operate normally, and b) Alternate control is verified to operate normally PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-03-01	Center Display Control Panel	___ Flap / Slat Control Lane INOP

(M) PROCEDURES

1. Verify the flap lever control position sensor operates normally.
 - a. Supply electrical power.
 - b. Position flap control lever UP.
 - c. On the FLAP/SLAT Maintenance page, confirm all four FLAP LEVER position indications are greater than 9.44.
2. **PRIOR TO EACH DEPARTURE** - Verify the flaps and slats operate normally using the ALTN FLAPS arm and selector switches.
 - a. Use the alternate system to extend the flaps and slats.
 - 1) Ensure that thrust reverser cowls are not fully open and that the Air Driven Pump doors are either fully open or fully closed when extending or retracting flaps and slats.
 - 2) Push the control stand (P10) ALTN FLAPS ARM switch to ALTN.
 - 3) Position the control stand (P10) ALTN FLAPS selector to EXT.
 - b. Verify the flaps extend to position 20 and the slats are in the midrange position on the EICAS display.
 - c. Use the alternate flap control to retract the flaps and slats
 - 1) Push the control stand (P10) ALTN FLAPS ARM switch to ALTN.
 - 2) Position the control stand (P10) ALTN FLAPS selector to RET.
 - d. Verify the flaps and the slats are retracted on the EICAS display.
 - e. Push the control stand ALTN FLAPS ARM switch to off.

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-03-02	Flap Secondary Control	N	1	0	C (M) May be inoperative provided Slat Secondary Control is verified to operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-03-02	Center Display Control Panel	Flap Secondary Control INOP

(M) PROCEDURES

Verify Slat Secondary Control operates normally (AMM 27-00-00/901).

1. Supply electrical power to the airplane.
2. Use the MAT to override the flap secondary control mode inhibit.

NOTE: The override inhibit will time-out in 15 seconds.

3. Move the flap lever to a selected position and ensure slats move accordingly.
4. Use the MAT to override the flap secondary control mode inhibit.
5. Move the flap control lever UP to retract the slats.

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-18

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-03-03	Slat Secondary Control	N	1	0	C (M) May be inoperative provided Flap Secondary Control is verified to operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-03-03	Center Display Control Panel	Slat Secondary Control INOP

(M) PROCEDURES

Verify Flap Secondary Control operates normally (AMM 27-00-00/901).

1. Supply electrical power to the airplane.
2. Use the MAT to override the flap secondary control mode inhibit.

NOTE: The override inhibit will time-out in 15 seconds.

3. Move the flap lever to a selected position and ensure flaps move accordingly.
4. Use the MAT to override the flap secondary control mode inhibit.
5. Move the flap control lever UP to retract the flaps.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-11-01	Aileron Trim System	N	1	0	C (O)(M) May be inoperative deactivated provided: a) Aileron trim system is verified to be centered PRIOR TO EACH DEPARTURE, and b) Autopilot roll modes operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-11-01	Aileron Trim Control Panel	Aileron Trim System INOP

NOTE: For autopilot roll modes to operate normally, the following items must operate normally (absence of EICAS status messages, current logbook entries or MCOs related to the items listed below indicates listed items operate normally):

At least one Autopilot and its associated Backdrive Actuator
Mode Control Panel (MCP) Heading (HDG - TRK) Window
MCP Bank Limit Selector and HDG - TRK SEL (push function) Selector
At least one MCP A/P Engage Switch
MCP HDG -TRK Reference, APP, LNAV, Heading/Track HOLD and LOC Switches

(O) PROCEDURES

PRIOR TO EACH DEPARTURE - Check that both control wheels are centered (0 ± 0.5 units of trim).

(M) PROCEDURES

Deactivate the aileron trim by opening the aileron trim circuit breaker or by installing the aileron trim actuator dummy link.

- If the aileron trim is centered (both control wheels at 0 ± 0.5 units of trim), pull and secure the AIL TRIM ACTR circuit breaker on the P110 Panel to prevent system movement.
- If the aileron trim system is not centered (both control wheels at 0 ± 0.5 units of trim), the following procedure may be used to replace the trim actuator with a tool that holds the control wheels in the zero trim position. (Refer to B777 Component Locator Guide or AMM 27-11-09/801 for actuator location.)
 - Remove the aileron trim actuator, saving the bolts, washers, nuts and bushings.
 - Install the aileron trim actuator dummy link, tool number A27088-18 or equivalent.
 - Adjust the dummy link to a length of 6 15/16 to 7 1/16 inches (6.937 to 7.063 inches) from center to center between the bolt holes.
 - Install the dummy link in the position of the inoperative actuator, using the same bolts, washers, nuts, and bushings.
 - Secure the trim actuator electrical connector to the dummy link with tape or wire tie.
- Check that both control wheels are centered (0 ± 0.5 units of trim).

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-20

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-11-02	Control Wheel Position Transducers	N	6	5	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-11-02	Center Display Control Panel	___ Control Wheel Position Transducer INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-11-03	Aileron Power Control Units (PCUs) (-200 LR only) "Contact MCC"	N	4	3	A (M) One may be inoperative provided: a) Inoperative PCU is deactivated in the bypass mode, b) Inoperative PCU blocking mode is verified to operate normally, c) Ailerons are verified to operate normally, and d) Repairs are made within three flight days.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-11-03	Center Display Control Panel	___ Aileron Power Control Unit (PCU) INOP

(M) PROCEDURES

Deactivate the inoperative aileron PCU in the bypass mode, verify blocking mode operates normally and verify ailerons operate normally (AMM 27-00-00/901).

1. For an inoperative left aileron PCU:
 - a. Open the Power Supply Assembly Center (PSA-C) in E2-6 rack AIL PCU circuit breaker.
 - b. Open P110 panel AIL PCU LIB(BLK)/LOB(BYP) circuit breaker.
 - c. Gain access to the left aileron PCUs.
 - d. Verify blocking mode operates normally on the inoperative PCU.
 - e. Deactivate the inoperative PCU in bypass mode.
 - 1) For an inoperative left inboard aileron PCU, pull and secure the Power Supply Assembly Center (PSA-C) in E2-6 rack AIL PCU circuit breaker.
 - 2) For an inoperative left outboard aileron PCU, pull and secure the P110 panel AIL PCU LIB(BLK)/LOB(BYP) circuit breaker.
 - 3) Close the operative aileron PCU circuit breaker.
2. For an inoperative right aileron PCU:
 - a. Open the Power Supply Assembly Right (PSA-R) in E5-1 rack AIL PCU circuit breaker.
 - b. Open the Power Supply Assembly Left (PSA-L) in E1-6 rack AIL PCU circuit breaker.
 - c. Gain access to the right aileron PCUs.
 - d. Verify blocking mode operates normally on the inoperative PCU.
 - e. Deactivate the inoperative PCU in bypass mode.
 - 1) For an inoperative right inboard aileron PCU, pull and secure the Power Supply Assembly Right (PSA-R) in E5-1 rack AIL PCU circuit breaker.
 - 2) For an inoperative right outboard aileron PCU, pull and secure the Power Supply Assembly Left (PSA-L) in E1-6 rack AIL PCU circuit breaker.
 - 3) Close the operative aileron PCU circuit breaker.
3. Check the operation of the ailerons.

NOTE: Do **not** do an Actuation Confidence Test, or an ACE Monitor Test, or L or R Aileron Actuator Confidence Tests.
4. Confirm the FLIGHT CONTROL SYS status message is not displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-11-04	Flaperon Power Control Units (PCUs) (-200 LR only) "Contact MCC"	N	4	3	A (M) One may be inoperative provided: a) Inoperative PCU is deactivated in the bypass mode, b) Flaperons are verified to operate normally, and c) Repairs are made within three flight days.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-11-04	Center Display Control Panel	___ Flaperon Power Control Unit (PCU) INOP

(M) PROCEDURES

Deactivate the inoperative flaperon PCU in the bypass mode and verify flaperons operate normally (AMM 27-00-00/901).

- For an inoperative left flaperon outboard PCU, pull and secure the Power Supply Assembly Left (PSA-L) in E1-6 rack FLPRN PCU circuit breaker.
- For an inoperative left flaperon inboard PCU, pull and secure the Power Supply Assembly Right (PSA-R) in E5-1 rack FLPRN PCU circuit breaker.
- For an inoperative right flaperon outboard PCU, pull and secure the Power Supply Assembly Center (PSA-C) in E2-6 rack FLPRN PCU circuit breaker.
- For an inoperative right flaperon inboard PCU:
 - Open P110 panel FLPRN PCU RIB(BYP) SPLRS 4 & 11 circuit breaker.
 - Open P110 panel ACE-L2 PWR circuit breaker.
 - Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to SHUT OFF.
 - Gain access to the inoperative PCU.
 - Disconnect, cap and stow the PCU electrical connector.

NOTE: The ACTUATOR PRESS SNSR status message will be displayed. The airplane **must** also be dispatched using [MEL item 27-02-05](#).

- Close the open circuit breakers.
 - Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to NORM.
- Check the operation of the flaperons.

NOTE: Do not do an Actuator Confidence Test, or an ACE Monitor Test, or L or R Flaperon Actuator Confidence Tests.
 - Confirm the FLIGHT CONTROL SYS status message is not displayed.

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-23

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
	RUDDER TRIM SYSTEM					
27-21-01A	Rudder Trim Control High Rate Function	Y	1	0	C	
27-21-01B	Rudder MANUAL TRIM CANCEL Switch	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-21-01A	Rudder Trim Control Panel	Rudder Trim Control High Rate Function INOP
27-21-01B	Rudder Trim Control Panel	Rudder MANUAL TRIM CANCEL Switch INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-21-02	Rudder Trim Indicator	Y	1	0 C	(O) May be inoperative provided rudder trim is verified centered PRIOR TO EACH DEPARTURE. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-21-02	Near Rudder Trim Indicator	Rudder Trim Indicator INOP

(O) PROCEDURES

PRIOR TO EACH DEPARTURE:

1. Press rudder trim CANCEL switch or rotate rudder trim switch as required to center the rudder pedals.
2. Verify the rudder is centered by checking that the left and right rudder pedals are evenly aligned. If available, the PFCS synoptic page can also be selected to check that the RUDDER TRIM indication shows rudder is centered (within 0.1 units left or right of 0 deflection).

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-25

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
27-31-01	Control Column Position Transducers	Y	6	5	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-31-01	Center Display Control Panel	___ Control Column Position Transducer INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-32-01A	Stall Warning Systems	Y	2	1 C	
27-32-01B	Stick Shakers	Y	2	1 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-32-01A	Center Display Control Panel	___ Stall Warning System INOP
27-32-01B	Center Display Control Panel	___ Stick Shaker INOP

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-27

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-41-01	Control Wheel Pitch Trim Switches	N	2	1	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-41-01	Near Associated Stab Trim Indicator	___ Control Wheel Pitch Trim Switch INOP

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-28

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
27-41-02	Alternate Pitch Trim Position Switches	N	6	5	C	May be inoperative provided both control wheel pitch trim switches operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-41-02	Near Associated Stab Trim Indicator	___ Alternate Pitch Trim Position Switch INOP

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-29

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-41-03	Stabilizer Trim Rate Solenoid Valves	N	2	1 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-41-03	Near Captain's Stab Trim Indicator	___ Stabilizer Trim Rate Solenoid Valve INOP

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-30

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-48-01	STAB Position Indicators	Y	2	1 C	(O) May be inoperative provided it is blanked or covered.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-48-01	Near Affected Stab Trim Indicator	___ STAB Position Indicator INOP

(O) PROCEDURES

1. If the inoperative indicator is blank, no action is required.
2. If the inoperative indicator remains illuminated, cover with tape or other material.

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-31

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-48-02	Stabilizer Position Transducer Modules	N	3	2	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-48-02	Near Captain's Stab Trim Indicator	___ Stabilizer Position Transducer Module INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-48-04	Nose Gear Pressure Transducer	N	1	0	C (O) May be inoperative provided stabilizer trim position is verified to be properly set PRIOR TO EACH DEPARTURE. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-48-04	Near Captain's Stab Trim Indicator	Nose Gear Pressure Transducer INOP

MAINTENANCE NOTE:

If the Nose Gear Pressure Transducer is leaking pneumatically, isolate the transducer as follows:

1. Install Landing Gear downlock pins.
2. Install Landing Gear Door safety pins.
3. Set the nose gear oleo service and pressure switch line shutoff valve to the fully closed position.
4. Acquire a rig pin, J20003-6, and remove the attached flag. (J20003-6 included in J20003-1 rig pin set.)
5. Install the rig pin in the rig pin hole to hold the shutoff valve in the closed position, and lockwire the rig pin to the valve body using the rig pin flag attachment hole.
6. Make a logbook entry stating the rig pin has been installed.
7. Remove Landing Gear Door safety pins.
8. Remove Landing Gear downlock pins.

(O) PROCEDURES

PRIOR TO EACH DEPARTURE - Verify the stabilizer trim position is correct for the takeoff thrust, takeoff flaps, gross weight and center of gravity.

NOTE: The STAB GREENBAND advisory message may be displayed.

1. Confirm the FMC takeoff data has been correctly initialized (takeoff thrust, takeoff flaps, gross weight, center of gravity).
2. Confirm the stabilizer trim is properly set to the FMC computed position.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-51-01	Inboard Flap, Outboard Support Mechanism Springs (No. 3 & No. 6 Supports) "Contact MCC"	N	4	2	A
					(M) One may be broken or missing on each support provided: a) Broken springs are removed, b) Remaining spring on each support is verified in place and not broken PRIOR TO EACH DEPARTURE (Log Book Entry Required), and c) Operations are limited to fifteen departures before repairs are made. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-51-01	Near Flap Handle	___ Inboard Flap, Outboard Support Mechanism Spring(s) Broken/Missing

(M) PROCEDURES

- Prepare for removal of any broken springs or inspection of remaining No. 3 or No. 6 flap support mechanism springs.
 - Supply electrical power.
 - Make sure the thrust reverser cowls are not open farther than the hold-open rod position.
 - Make sure the air-driven pump (ADP) door is fully open or fully closed.
 - Pressurize the center hydraulic system.
 - Extend the trailing edge flaps to the 30-unit position.
 - Remove power from the center hydraulic system.
 - Deactivate the trailing edge flaps.
- Remove any broken No. 3 or No. 6 flap support springs. If a damper is installed on the spring assembly, remove the damper and retain for subsequent repair action.
- PRIOR TO EACH DEPARTURE** - Verify the remaining spring on the associated No. 3 or No. 6 flap support mechanism is in place and not broken.
- Return the airplane to its usual condition.
 - Reactivate the trailing edge flaps.
 - Make sure the air-driven pump (ADP) door is fully open or fully closed.
 - Pressurize the center hydraulic system.
 - Retract the trailing edge flaps.
 - Remove center hydraulic system power.

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-34

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-51-02	ALTN FLAPS ARM Switch ALTN Light	Y	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-51-02	Near Alternate Flaps Panel	ALTN FLAPS ARM Switch ALTN Light INOP

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-35

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-59-01	Flap / Slat Skew Sensors	N	28	14	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-59-01	Near Flap Handle	___ Flap / Slat Skew Sensor(s) INOP

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-36

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
27-61-01	Speedbrake Lever Position Transducers	N	4	3	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-61-01	Near Speedbrake Lever	___ Speedbrake Lever Position Transducer INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-61-03	Spoiler Power Control Units (PCUs) (-200 LR only) "DISP.APPR.REQ'D."	N	14	12	A (O)(M) One symmetrical pair (except 4/11) may be inoperative provided: a) Symmetrical pair is deactivated in the retracted position, b) Remaining spoilers are verified to operate normally, c) Appropriate performance adjustments are applied, and d) Repairs are made within three flight days.

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-61-03	Center Display Control Panel	___ Spoiler Power Control Unit (PCU) INOP

NOTE 1: Dispatch relief does not apply for a fault condition that is reported to cause asymmetric roll input, or for a spoiler panel detached from the actuator, or for a spoiler not in the retracted position.

NOTE 2: The SPOILERS advisory message will be displayed.

(O) PROCEDURES

27-61-03	SPOILER POWER CONTROL UNITS (PCUs)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Minimum takeoff field length 7,600 ft. 2. Minimum landing field length 6,900 ft.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF Reduce RATOW by 11,000 lbs. LANDING Reduce RWY ALLOWABLE LANDING WT by 31,000 lbs.

(M) PROCEDURES

Deactivate the symmetrical spoiler pair in the retracted position and verify remaining spoilers operate normally (AMM 27-00-00/901).

1. Confirm speedbrake lever is in DOWN position.
2. For spoilers 1/14 or 7/8, open the Power Supply Assembly Center (PSA-C) in E2-6 rack ACE PWR circuit breaker.
3. For spoilers 2/13, open the Power Supply Assembly Left (PSA-L) in E1-6 rack ACE PWR circuit breaker.
4. For spoilers 3/12 or 6/9, open the Power Supply Assembly Right (PSA-R) in E5-1 rack ACE PWR circuit breaker.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-38

5. For spoilers 5/10, open P110 panel ACE-L2 PWR circuit breaker.
6. Depressurize all three hydraulic systems.
7. Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to SHUT OFF.
8. Gain access to the spoiler pair PCUs.
9. Disconnect, cap and stow the inoperative PCU electrical connectors.
10. Close the opened access panels.
11. Close the open circuit breakers.
12. Set Maintenance Panel (P61) left, center and right WING FLT CONTROL HYD POWER switches to NORM.
13. Check the operation of the spoilers.
NOTE: Do not do the ACE Monitor Test.
14. Confirm the FLIGHT CONTROL SYS status message is not displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
27-62-01	Automatic Speedbrake Function "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative deactivated provided: a) Landing gear truck tilt pressure is verified to be normal PRIOR TO EACH DEPARTURE (Log Book Entry Required), and b) Appropriate performance adjustments are applied. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
27-62-01	Near Speedbrake Lever	Automatic Speedbrake Function INOP

(O) PROCEDURES

Extend speedbrakes manually for rejected takeoff and landing.

- For rejected takeoff:
 - Simultaneously close the thrust levers, disengage the autothrottles and apply maximum manual wheel brakes or verify operation of RTO autobrakes.
 - Manually raise SPEED BRAKE lever.
 - Apply the maximum amount of reverse thrust consistent with conditions.
- For landing, refer to 777 QRH, Non-Normal Checklist, AUTO SPEEDBRAKE.

27-62-01	AUTOMATIC SPEEDBRAKE FUNCTION
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING Use RWY ALLOWABLE LANDING WT for "MANUAL SPEED BRAKES" in ALM – Airport Section.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 27 Flight Controls	R14 05/09/16 Page 27-40

(M) PROCEDURES

Deactivate the automatic speedbrake.

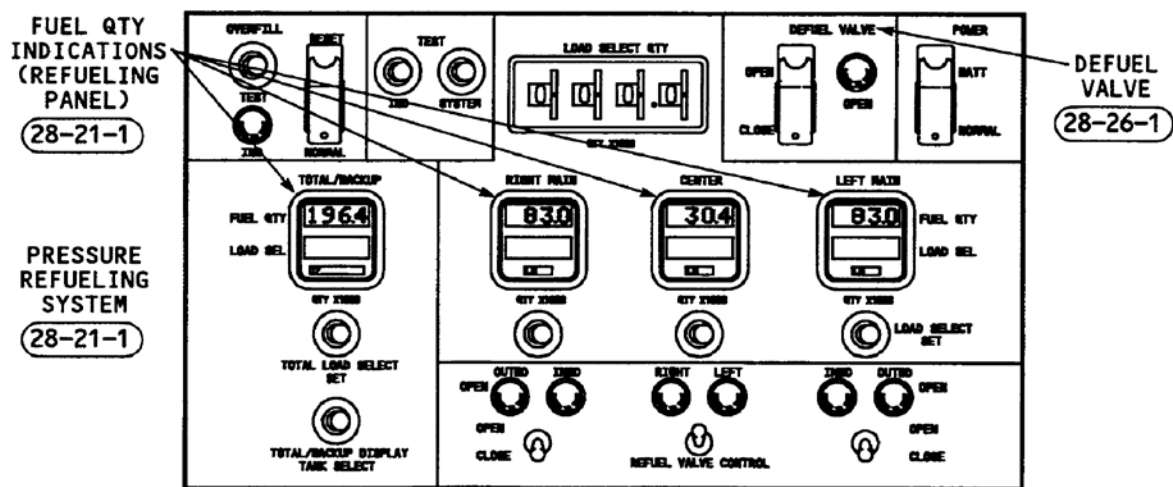
1. Pull and secure left power supply assembly (PSA-L) AUTO SPDBRK (L, R) circuit breaker. The PSA-L is located in the E1-6 rack in the Main Equipment Center.
2. Pull and secure right power supply assembly (PSA-R) AUTO SPDBRK (L, R) circuit breaker. The PSA-R is located in the E5-1 rack aft of the forward cargo door.

PRIOR TO EACH DEPARTURE - Verify truck tilt pressure is normal.

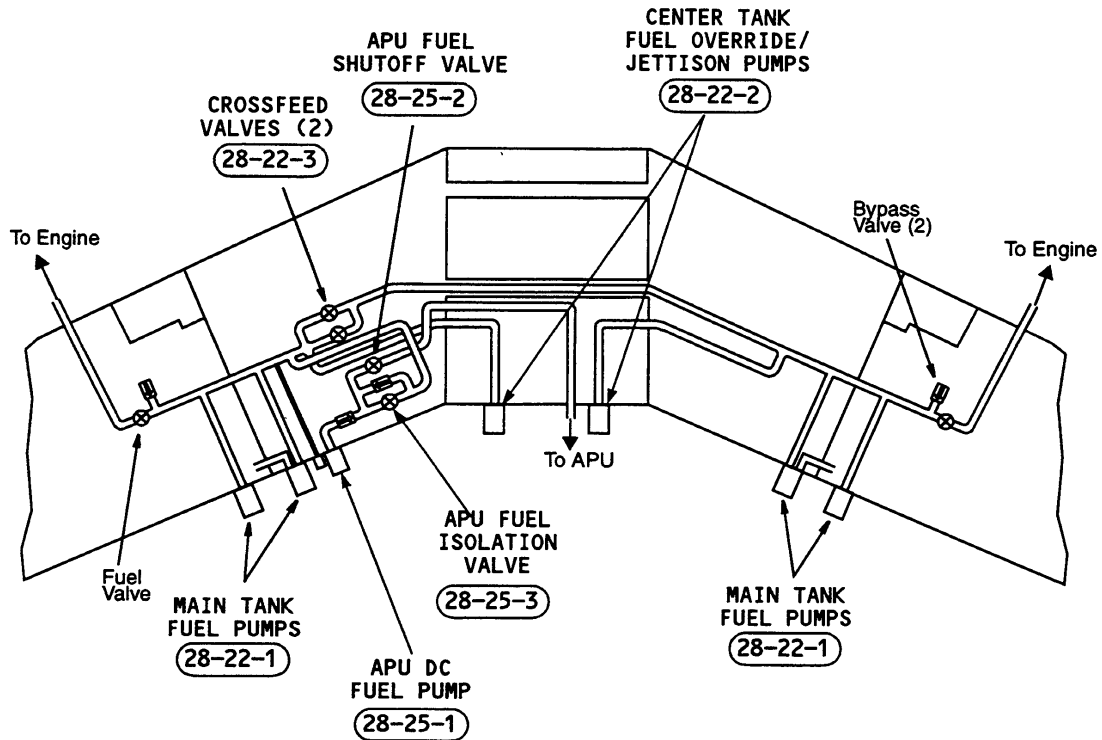
1. Ensure landing gear lever is in the DOWN position.
2. Pressurize the center hydraulic system.
3. After 2 minutes, verify pressure readings for the L TRUCK TILT and R TRUCK TILT hydraulic lines are 2700 to 3200 psi on the LANDING GEAR ACTN/INDN EICAS Maintenance Page.

ATA 28 Contents

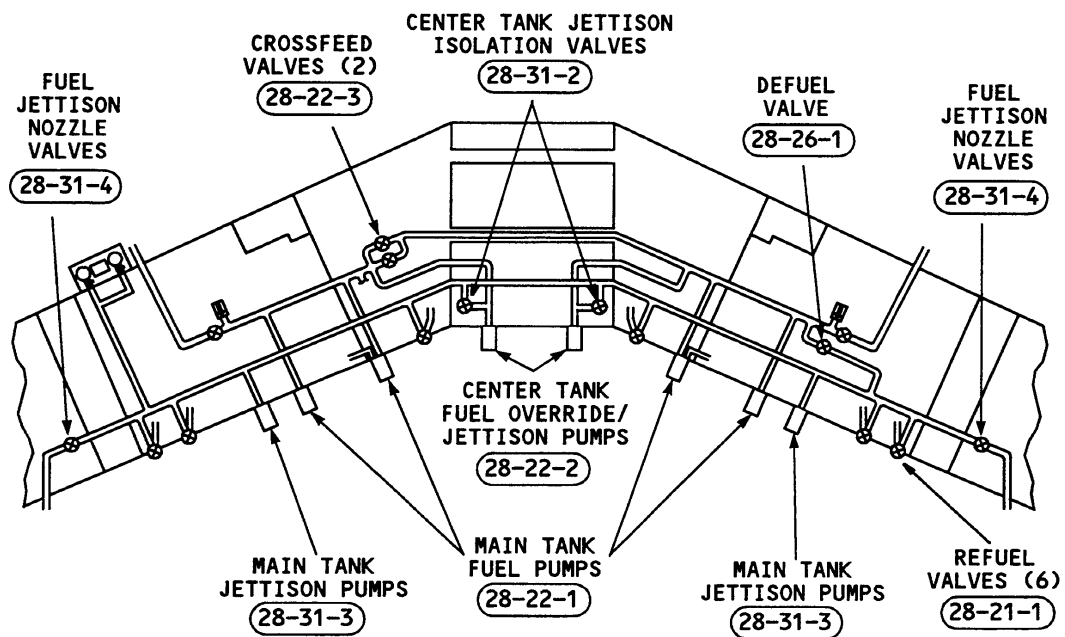
	SUMP DRAIN VALVES	28-6
28-11-01A	Surge Tanks	28-6
28-11-01B	Main and Center Tanks	28-6
	PRESSURE FUELING SYSTEM	28-7
28-21-01A	Refuel Valves	28-7
28-21-01C	Integrated Refuel Panel Fuel Quantity Indicators	28-7
28-21-01D	Integrated Refuel Panel Load Select System	28-7
28-21-01E	Integrated Refuel Panel Refuel Valve Lights	28-7
28-21-01F	Integrated Refuel Panel Overfill Function	28-7
	PRESSURE FUELING SYSTEM	28-8
28-21-01G	Integrated Refuel Panel Defuel Valve Function	28-8
28-21-01H	Integrated Refuel Panel Power Switch.....	28-8
28-21-01I	Integrated Refuel Panel Test Functions.....	28-8
28-21-01J	Integrated Refuel Panel	28-8
28-22-01A	Main Tank Fuel Pumps	28-11
28-22-01B	Main Tank Fuel Pumps (PUMPS Switch PRESS Lights)	28-11
28-22-01C	Main Tank Fuel Pumps (PUMPS Switch ON Light)	28-11
28-22-02A	Center Tank Fuel Override / Jettison Pumps.....	28-12
28-22-03A	Fuel Crossfeed Valves	28-14
28-22-03B	Fuel Crossfeed Valves (CROSSFEED Switch VALVE Lights)	28-14
28-22-04	Fuel Scavenge Systems	28-15
28-22-06	Fuel Shutoff Valve Battery	28-16
28-22-07A	Fuel Scavenge Shutoff Valves	28-17
28-25-01	APU DC Fuel Pump	28-19
28-25-02	APU Fuel Shutoff Valve	28-20
28-25-03	APU Fuel Isolation Valve	28-21
28-26-01	Defuel Valve	28-22
28-31-01A	Fuel Jettison System	28-23
28-31-01B	Fuel Jettison System (ARM Switch FAULT Light)	28-23
28-31-01C	Fuel Jettison System (ARM Switch ARMED Light).....	28-23
28-31-02A	Center Tank Jettison Isolation Valves.....	28-25
28-31-03	Main Tanks Jettison Pumps	28-28
28-31-04A	Fuel Jettison Nozzle Valves	28-30
28-31-04C	Fuel Jettison Nozzle Valves (Switch VALVE Lights).....	28-30
28-31-04D	Fuel Jettison Nozzle Valves (Switch ON Lights).....	28-30
28-40-01	Fuel Synoptic Display.....	28-33
	FUEL QUANTITY INDICATIONS (FLIGHT DECK)	28-34
28-41-01A	Center Tank.....	28-34
28-41-01B	Main Tanks.....	28-34
28-41-02	Fuel Quantity Processor Input / Output (I/O) Channels	28-37
28-41-04	Total Fuel Quantity Indication	28-38
28-43-01	Fuel Temperature Indicating System	28-39
28-44-01	Measuring Sticks.....	28-40

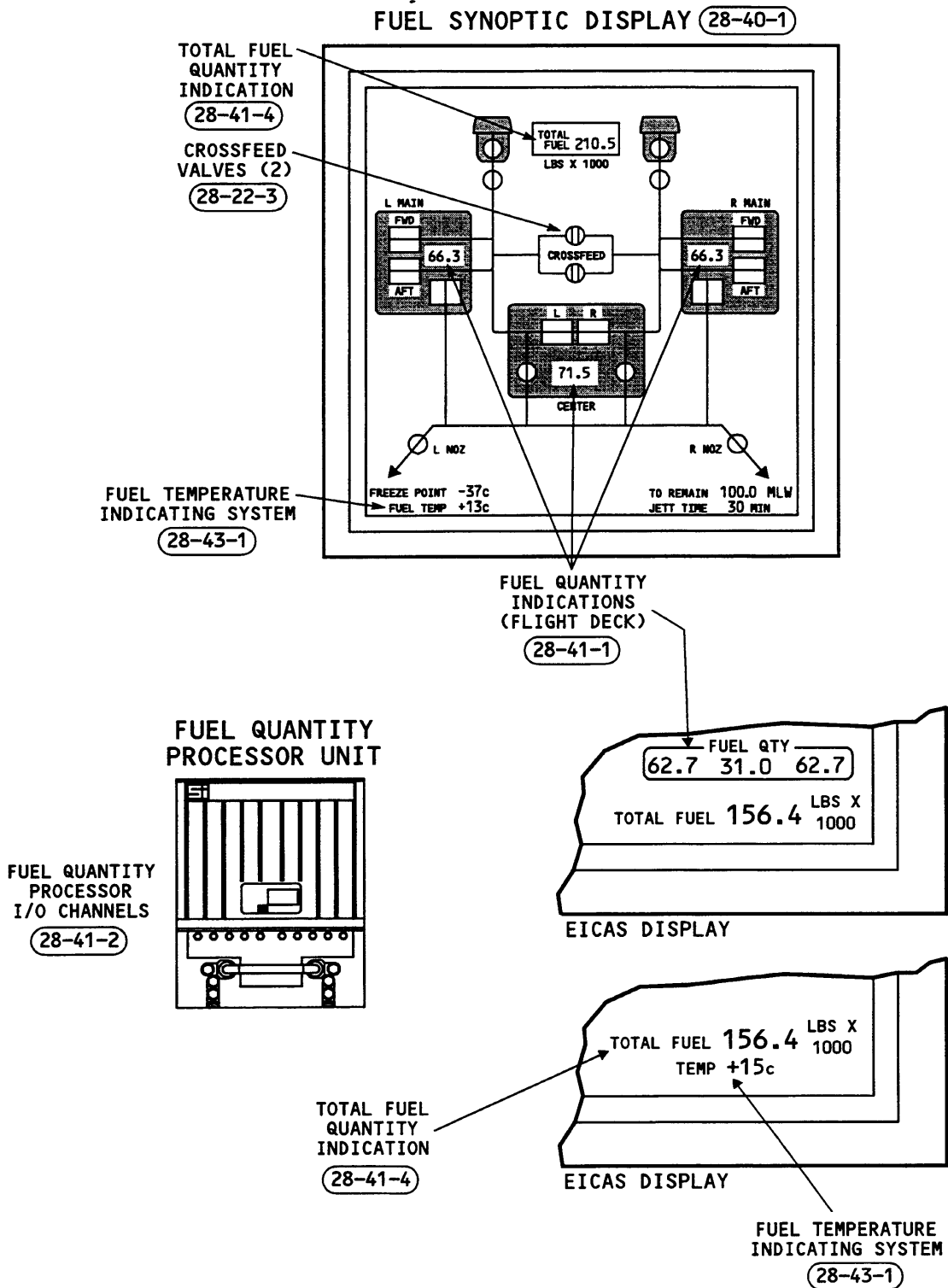


ENGINE & APU FUEL FEED SYSTEMS

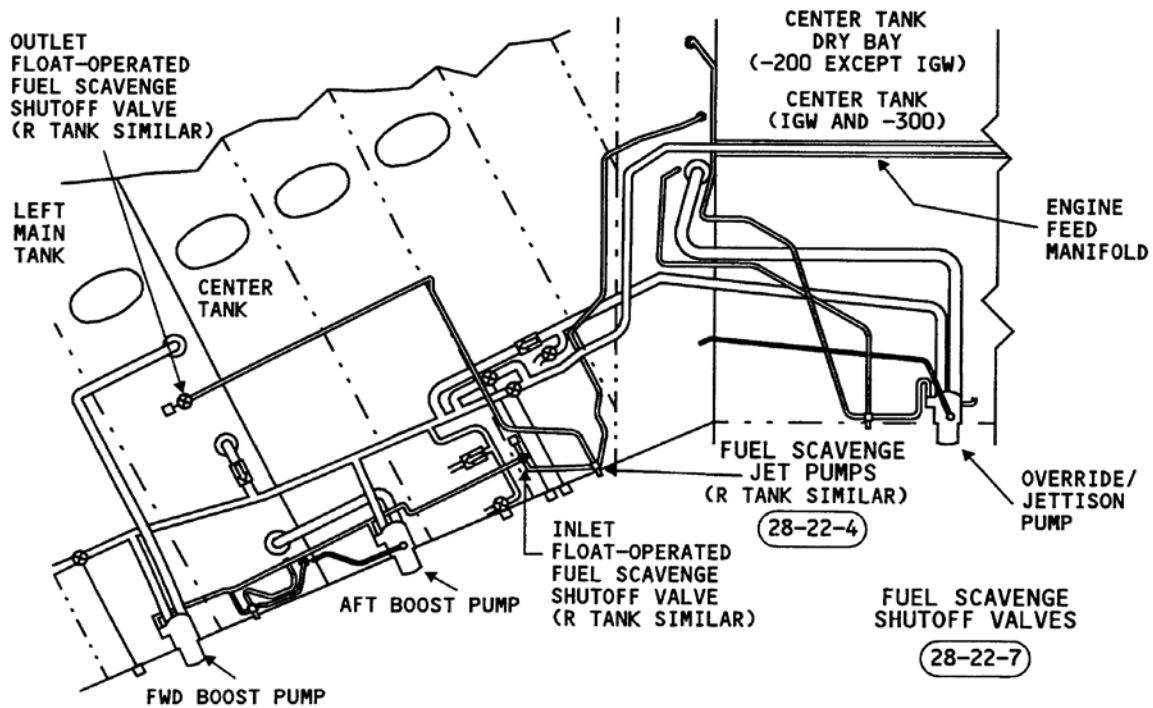
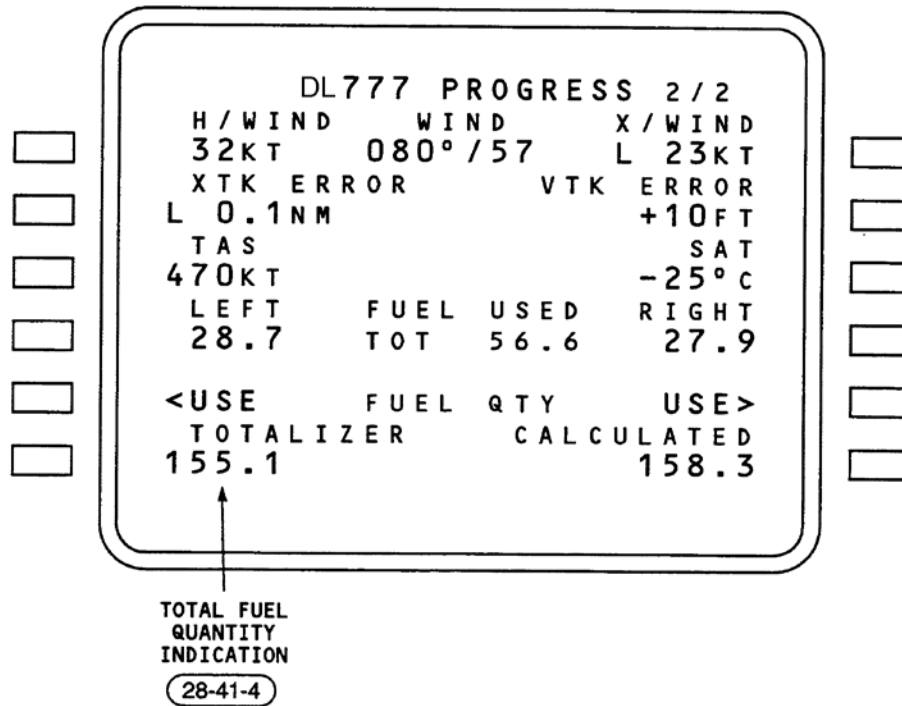


FUEL JETTISON & DEFUEL SYSTEMS





FMC PROGRESS PAGE 2



NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	SUMP DRAIN VALVES				
28-11-01A	Surge Tanks	N	2	0	C (M) May be inoperative provided there is no evidence of leakage.
28-11-01B	Main and Center Tanks	N	4	3	C (M) May be inoperative provided: a) There is no evidence of leakage, b) To prevent water accumulation in associated tank, visually inspect exterior surface location of the inoperative sump drain valve to verify that there is no evidence of fuel leakage, and c) Display Fuel Quantity Maintenance Page on an MFD. Ensure L MAIN WATER, R MAIN WATER or CENTER TANK WATER is not displayed on either Fuel Quantity Maintenance Page. Presence of these messages indicate associated tank water detector has sensed water in the tank.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-11-01A	Fuel System Control Panel	___ Surge Tank Sump Drain Valve(s) INOP
28-11-01B	Fuel System Control Panel	___ Tank Sump Drain Valve INOP

(M) PROCEDURES

28-11-01A

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

28-11-01B

Refer to REMARKS or EXCEPTIONS section above.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PRESSURE FUELING SYSTEM					
28-21-01A	Refuel Valves "DISP.APPR.REQ'D."	N	6	0	C (M) May be inoperative CLOSED provided the procedures contained in the TOHP Fleet Manuals / Fueling Procedures Manual, Fueling Procedures, Document B777.10 – B777.60 are used for refueling.
28-21-01B	Refuel Valves "DISP.APPR.REQ'D."	N	6	5	C (O)(M) One main tank refuel valve may be inoperative OPEN provided: a) Fuel jettison system is considered inoperative and deferred per MEL 28-31-01A , b) The procedures contained in the TOHP Fleet Manuals / Fueling Procedures Manual, Fueling Procedures, Document B777.10 – B777.60 are used for refueling, and c) Appropriate performance adjustments are applied.
28-21-01C	Integrated Refuel Panel Fuel Quantity Indicators "DISP.APPR.REQ'D."	N	-	0	C (M) May be inoperative provided the procedures contained in the TOHP Fleet Manuals / Fueling Procedures Manual, Fueling Procedures, Document B777.10 – B777.60 are used for refueling.
28-21-01D	Integrated Refuel Panel Load Select System "DISP.APPR.REQ'D."	N	-	0	C (M) May be inoperative provided the procedures contained in the TOHP Fleet Manuals / Fueling Procedures Manual, Fueling Procedures, Document B777.10 – B777.60 are used for refueling. NOTE: Any function which operates normally may be used.
28-21-01E	Integrated Refuel Panel Refuel Valve Lights "DISP.APPR.REQ'D."	N	-	0	C (M) May be inoperative provided: a) Overfill function operates normally, and b) Associated refuel valve is verified closed AFTER EACH REFUELING (Logbook Entry Required). Repetitive Check Required (Yellow Placard)
28-21-01F	Integrated Refuel Panel Overfill Function (Normal / Reset Switch, Light, and Test) "DISP.APPR.REQ'D."	N	-	0	C (M) May be inoperative provided: a) Refuel valve lights operate normally, and b) Verify refuel valves close when appropriate during refueling.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD		REPAIR CATEGORY				
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
	PRESSURE FUELING SYSTEM (CONTINUED)					
28-21-01G	Integrated Refuel Panel Defuel Valve Function (Switch and Open Light) “DISP.APPR.REQ'D.”	N	-	0	C	May be inoperative provided defuel valve is considered inoperative and deferred per MEL 28-26-01.
28-21-01H	Integrated Refuel Panel Power Switch – BATT Position “DISP.APPR.REQ'D.”	Y	-	0	C	May be inoperative.
28-21-01I	Integrated Refuel Panel Test Functions (Indication and System) “DISP.APPR.REQ'D.”	Y	-	0	C	May be inoperative.
28-21-01J	Integrated Refuel Panel Refuel Valve Switches “DISP.APPR.REQ'D.”	Y	3	0	C	May be inoperative provided: a) Load select system operates normally, and b) Overfill function operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-21-01A	Fuel System Control Panel and Affected Integrated Refuel Panel	Pressure Fueling System ___Refuel Valve(s) INOP
28-21-01B	Fuel System Control Panel and Affected Integrated Refuel Panel	Pressure Fueling System ___Refuel Valve INOP
28-21-01C	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Fuel Quantity Indicator(s) INOP
28-21-01D	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Load Select INOP
28-21-01E	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Refuel Valve Lights INOP
28-21-01F	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Overfill Function INOP
28-21-01G	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Defuel Valve INOP
28-21-01H	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Power Switch INOP
28-21-01I	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Test Function INOP
28-21-01J	Fuel System Control Panel and Affected Integrated Refuel Panel	Integrated Refuel Panel ___Refuel Valve Switch(s) INOP

CONTINUED NEXT PAGE

(O) PROCEDURES

28-21-01B

NOTE: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

28-21-01B PRESSURE FUELING SYSTEM – REFUEL VALVE OPEN	
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 4,000 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 4,000 lbs. Enter that weight as STWL.

28-21-01B PRESSURE FUELING SYSTEM – REFUEL VALVE OPEN	
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 5,400 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 5,400 lbs. Enter that weight as STWL.

CONTINUED NEXT PAGE

 DELTA	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-10

(M) PROCEDURES

28-21-01A, 28-21-01C, 28-21-01D

Refer to REMARKS or EXCEPTIONS section on Page 28-7 for refueling procedures.

28-21-01B

1. Defer and deactivate the Fuel Jettison System per [MEL 28-31-01A](#).

NOTE: Deactivating the fuel jettison nozzles will result in the FUEL JETT NOZZLE L and R status and alerting EICAS messages being displayed and illumination of the L and R fuel jettison nozzle VALVE lights on the overhead panel. These effects are normal and do not require further maintenance action.

When the fuel jettison system is deactivated, the Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank.

2. Placard the P5 overhead Fuel Jettison Panel - JETTISON SYSTEM DEACTIVATED.
3. Refer to REMARKS or EXCEPTIONS section on Page 28-7 for refueling procedures.

28-21-01E

1. Verify the associated valve is closed AFTER EACH REFUELING (AMM 28-00-00/901).
2. Monitor and ensure associated refuel valve is closed after refueling.

28-21-01F

1. Verify refuel valves close when appropriate during refueling (AMM 28-00-00/901).
2. Monitor and ensure the refuel valves close appropriately during refueling.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-22-01A	Main Tank Fuel Pumps "DISP.APPR.REQ'D."	N	4	3	C (M) May be inoperative deactivated provided: a) Both main tank quantity indications operate normally, and b) Flight remains within 120 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized
28-22-01B	Main Tank Fuel Pumps (PUMPS Switch PRESS Lights)	Y	4	0	C
28-22-01C	Main Tank Fuel Pumps (PUMPS Switch ON Light)	Y	4	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-22-01A	Fuel System Control Panel	___ Main Tank Fuel Pump INOP
28-22-01B	Fuel System Control Panel	___ Main Tank Fuel Pump (PUMPS Switch PRESS Light(s) INOP
28-22-01C	Fuel System Control Panel	___ Main Tank Fuel Pump (PUMPS Switch ON Light(s) INOP

(M) PROCEDURES

28-22-01A

Deactivate the inoperative fuel pump by pulling and securing the applicable circuit breakers:

Inoperative Pump	Circuit Breaker & Location
Left Main Tank Forward Pump	P110 Panel: L FWD FUEL BOOST PUMP P310 Panel: L FWD FUEL BOOST PUMP CTRL P320 Panel: L FWD FUEL BOOST PUMP GND SVCE
Left Main Tank Aft Pump	P110 Panel: L AFT FUEL BOOST PUMP P110 Panel: AFT FUEL BOOST PUMP CTRL
Right Main Tank Forward Pump	P110 Panel: FWD FUEL BOOST PUMP L AC SECT 2 P110 Panel: FWD FUEL BOOST PUMP CTRL P210 Panel: FWD FUEL BOOST PUMP R XFR
Right Main Tank Aft Pump	P210 Panel: AFT FUEL BOOST PUMP P210 Panel: R AFT FUEL BOOST PUMP CTRL



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
28-22-02A	Center Tank Fuel Override / Jettison Pumps “DISP.APPR.REQ'D.”	N	2	1	C (O)(M) One may be inoperative deactivated provided: a) Inoperative pump is deactivated, b) Center tank quantity indication operates normally, c) With center tank fueled, fuel quantity remaining in main wing tanks is adequate to reach a suitable airport if remaining center pump fails at any time, and d) Center tank fuel is accounted for in the airplane weight and balance in the event center tank fuel cannot be used.	
28-22-02B	Center Tank Fuel Override / Jettison Pumps “DISP.APPR.REQ'D.”	N	2	0	C (O)(M) May be inoperative provided: a) Pumps are deactivated. b) Center tank quantity indication operates normally, and c) Center tank fuel is considered unusable and is accounted for in the airplane weight and balance.	
28-22-02C	Center Tank Fuel Override / Jettison Pumps (PUMPS Switch PRESS Lights)	Y	2	0	C	
28-22-02D	Center Tank Fuel Override / Jettison Pumps (PUMPS Switch ON Lights)	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-22-02A	Fuel System Control Panel	___ Center Tank Fuel Override / Jettison Pump INOP
28-22-02B	Fuel System Control Panel	Both Center Tank Fuel Override / Jettison Pumps INOP
28-22-02C	Fuel System Control Panel	___ Center Tank Fuel Override / Jettison Pump (PUMPS Switch PRESS Light(s) INOP
28-22-02D	Fuel System Control Panel	___ Center Tank Fuel Override / Jettison Pump (PUMPS Switch ON Light(s) INOP

CONTINUED NEXT PAGE

(O) PROCEDURES

28-22-02A

1. Verify center tank fuel is 18,600 pounds or less. AWABS (or the Takeoff Performance Worksheet) will ensure that weight and balance limits have been satisfied providing the center tank fuel is 18,600 pounds or less.

NOTE: The aircraft will not balance with ballast/unusable fuel greater than 21,900 pounds.

2. When operative center tank pump switch is ON, set crossfeed switch open.
3. When operative center tank pump switch is OFF, set crossfeed switch closed.

28-22-02B

NOTE 1: Center tank fuel is considered unusable and is accounted for in the airplane weight and balance. FMC fuel prediction for INSUFFICIENT FUEL message on CDU will not be accurate.

NOTE 2: FUEL IN CENTER advisory message may be displayed.

(M) PROCEDURES

28-22-02A, 28-22-02B

Deactivate the inoperative pump(s) by pulling and securing the applicable circuit breakers:

Inoperative Pump	Circuit Breaker & Location
Left Center Tank Pump	P110 Panel: CTR L OVRD FUEL PUMP CTRL
Right Center Tank Pump	P210 Panel: CTR R OVRD FUEL PUMP CTRL

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
28-22-03A	Fuel Crossfeed Valves “DISP.APR.REQ'D”	N	2	1	C	(O)(M) May be inoperative deactivated CLOSED provided remaining valve is verified to operate normally PRIOR TO EACH DEPARTURE. Repetitive Check Required (Yellow Placard)
28-22-03B	Fuel Crossfeed Valves (CROSSFEED Switch VALVE Lights)	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-22-03A	Fuel System Control Panel	___ Fuel Crossfeed Valve INOP
28-22-03B	Fuel System Control Panel	___ Fuel Crossfeed Valve (CROSSFEED Switch VALVE Light(s) INOP

(O) PROCEDURES

28-22-03A

NOTE: The associated EICAS FUEL CROSSFEED AFT or FWD advisory message will be displayed for the crossfeed valve deactivated in the closed position. After the fuel pumps are ON, the fuel synoptic will incorrectly display a green flow line for the associated crossfeed valve. The EICAS display will have expanded fuel indications.

PRIOR TO EACH DEPARTURE, perform the following fuel crossfeed valve check:

1. Position operative crossfeed valve on and verify associated EICAS message FUEL CROSSFEED AFT or FWD advisory message does not remain displayed.
2. Position operative crossfeed valve off and verify associated EICAS message FUEL CROSSFEED AFT or FWD advisory message does not remain displayed.

(M) PROCEDURES

28-22-03A

Deactivate the affected Fuel Crossfeed Valve in the closed position (AMM 28-00-00/901).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-22-04	Fuel Scavenge Systems "DISP.APPR.REQ'D."	N	2	0	C (O) May be inoperative provided: a) Center tank quantity indication operates normally, and b) Appropriate amount of center tank fuel is considered unusable and is accounted for in the airplane weight and balance.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-22-04	Fuel System Control Panel	___ Fuel Scavenge System(s) INOP

NOTE: The fuel scavenge system includes a jet pump and two shutoff valves in each system. If the pump is inoperative or either shutoff valve is inoperative CLOSED, that system will not transfer fuel from the center tank making the system inoperative. See [MEL 28-22-07](#) for fuel scavenge shutoff valve inoperative OPEN.

(O) PROCEDURES

28-22-04	FUEL SCAVENGE SYSTEM
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 2,400 lbs. or the amount of center tank fuel less than 2,400 lbs. 2. 2,400 lbs. of fuel in the center tank, or the amount of center tank fuel less than 2,400 lbs., must be considered UNUSABLE.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

28-22-04	FUEL SCAVENGE SYSTEM
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 2,700 lbs. or the amount of center tank fuel less than 2,700 lbs. 2. 2,700 lbs. of fuel in the center tank, or the amount of center tank fuel less than 2,700 lbs., must be considered UNUSABLE.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-16

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-22-06	Fuel Shutoff Valve Battery	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-22-06	Fuel System Control Panel	Fuel Shutoff Valve Battery INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-22-07A	Fuel Scavenge Shutoff Valves	N	4	3	C (M) May be inoperative OPEN provided: a) Fuel quantity system operates normally, and b) Remaining valve on that side is verified to operate normally.
28-22-07B	Fuel Scavenge Shutoff Valves "DISP.APPR.REQ'D."	N	4	0	C (M) May be inoperative OPEN provided: a) Center tank remains empty, and b) Center tank quantity indication operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-22-07A	Fuel System Control Panel	___ Fuel Scavenge Shutoff Valve INOP
28-22-07B	Fuel System Control Panel	___ Fuel Scavenge Shutoff Valve(s) INOP

(M) PROCEDURES

28-22-07A

Verify the fuel scavenge shutoff valve on the associated side operates normally.

- For an outlet fuel scavenge shutoff valve inoperative open, verify proper operation of the inlet shutoff valve.

NOTE: For an outlet shutoff valve inoperative closed, use [MEL item 28-22-04](#).

- Defuel the main fuel tank on the same side as the inoperative shutoff valve if necessary to achieve the following fuel quantity:
 - (-200ER) Less than 30,200 lbs.
 - (-200LR) Less than 53,900 lbs.
- Refuel the center fuel tank if necessary to achieve the following fuel quantity:
 - (-200ER) More than 49,300 lbs.
 - (-200LR) More than 48,100 lbs.
- For left side shutoff valve inoperative, position Fuel Panel (P5) L PUMPS FWD and AFT switches ON.
 - For APU operating, position Fuel Panel (P5) CENTER PUMPS L switch ON.
- For right side shutoff valve inoperative, position Fuel Panel (P5) R PUMPS FWD and AFT switches ON.
- Allow the pumps to operate for 30 minutes.
 - Verify the main tank fuel quantity on the same side as the failed valve does not increase.
 - Verify the center tank fuel quantity does not increase.
- Position Fuel Panel (P5) Fuel Pump switches off.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-18

2. For an inlet fuel scavenge shutoff valve inoperative open, verify proper operation of the outlet shutoff valve.

NOTE: For an inlet shutoff valve inoperative closed, use [MEL item 28-22-04](#).

- a. Refuel the center fuel tank if necessary to achieve a fuel quantity greater than 1,000 lb.
- b. Refuel the main fuel tank on the same side as the inoperative shutoff valve if necessary to achieve the following fuel quantity:
 - 1) (-200ER) More than 33,200 lbs.
 - 2) (-200LR) More than 56,350 lbs.
- c. For left side shutoff valve inoperative, position Fuel Panel (P5) L PUMPS FWD and AFT switches ON.
 - 1) For APU operating, position Fuel Panel (P5) CENTER PUMPS L switch ON.
- d. For right side shutoff valve inoperative, position Fuel Panel (P5) R PUMPS FWD and AFT switches ON.
- e. Allow the pumps to operate for 30 minutes.
 - 1) Ensure the main tank fuel quantity on the same side as the failed valve does not increase.
 - 2) Ensure the center tank fuel quantity does not increase.
- f. Position Fuel Panel (P5) Fuel Pump switches off.

28-22-07B

For center tank fuel, defuel the center tank.

1. Defuel the center tank to a quantity less than 400 lb by the suction defueling procedure (AMM 28-26-00/201).
2. If required, drain fuel to achieve required fuel amount.

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-19

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			N	1	0	REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION	C				REMARKS OR EXCEPTIONS	
28-25-01	APU DC Fuel Pump					(M) May be inoperative deactivated.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-25-01	Fuel System Control Panel	APU DC Fuel Pump INOP

(M) PROCEDURES

Pull and secure P310 panel DC FUEL PUMP circuit breaker.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-25-02	APU Fuel Shutoff Valve "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) Valve is deactivated closed, b) Other procedures do not require the use of the APU, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-25-02	Fuel System Control Panel	APU Fuel Shutoff Valve INOP

(O) PROCEDURES

- Dispatch is **not** allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability:

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

- For dispatch when the APU is inoperative and its use is not required by other procedures:
 - The flight must remain within 180 minutes of landing at a suitable airport.
 - Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

(M) PROCEDURES

Deactivate the APU fuel shutoff valve in the closed position.

- Open the landing gear doors and install safety pins.
- Pull and secure P11 panel APU FUEL S/O VALVE circuit breaker.
- Gain access to the APU shutoff valve actuator (left main wheel well - rear spar of left center tank).
- Disconnect, cap and stow the electrical connector (DV28023).
- Move the manual override handle to the CLOSED position and lockwire.
- Remove the landing gear door safety pins and close the landing gear doors.

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-21

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-25-03	APU Fuel Isolation Valve	N	1	0	C (M) May be inoperative deactivated closed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-25-03	Fuel System Control Panel	APU Fuel Isolation Valve INOP

(M) PROCEDURES

1. Open the landing gear doors and install safety pins.
2. Pull and secure P310 panel APU FUEL ISLN VLV circuit breaker.
3. Gain access to the APU fuel isolation valve actuator (left main wheel well - rear spar of the left center tank).
4. Disconnect, cap and stow the electrical connector (DV28031).
5. Move the manual override handle to the CLOSED position and lockwire.
6. Remove the landing gear door safety pins and close the landing gear doors.

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-22

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-26-01	Defuel Valve	N	1	0	C (M) May be inoperative secured closed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-26-01	Fuel System Control Panel	Defuel Valve INOP

(M) PROCEDURES

1. Open the landing gear doors and install safety pins.
2. Pull and secure P310 panel DFUEL VLVS circuit breaker.
3. Gain access to the defuel valve actuator (right main wheel well - rear spar of the right center tank).
4. Disconnect, cap and stow the electrical connector (DV28310).
5. Move the manual override handle to the CLOSED position and lockwire.
6. Remove the landing gear door safety pins and close the landing gear doors.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-31-01A	Fuel Jettison System "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) Jettison system is deactivated, b) Jettison nozzle valves are secured closed, and c) Appropriate performance adjustments are applied.
28-31-01B	Fuel Jettison System (ARM Switch FAULT Light)	Y	1	0	C
28-31-01C	Fuel Jettison System (ARM Switch ARMED Light)	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-31-01A	Fuel Jettison System Control Panel	Fuel Jettison System INOP
28-31-01B	Fuel Jettison System Control Panel	Fuel Jettison System (ARM Switch FAULT Light) INOP
28-31-01C	Fuel Jettison System Control Panel	Fuel Jettison System (ARM Switch ARMED Light) INOP

(O) PROCEDURES

28-31-01A

NOTE: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

28-31-01A	FUEL JETTISON SYSTEM
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 4,000 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 4,000 lbs. Enter that weight as STWL.

CONTINUED NEXT PAGE

28-31-01A	FUEL JETTISON SYSTEM
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 5,400 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 5,400 lbs. Enter that weight as STWL.

(M) PROCEDURES

28-31-01A

Deactivate the Fuel Jettison System and secure the Fuel Jettison Nozzle Valves in the closed position (AMM 28-00-00/901).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-31-02A	Center Tank Jettison Isolation Valves "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Inoperative valve is secured CLOSED, b) Fuel jettison system is considered inoperative and deferred per MEL 28-31-01A, and c) Appropriate performance adjustments are applied.
28-31-02B	Center Tank Jettison Isolation Valves "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Inoperative valve is secured CLOSED, and b) Appropriate gross weight and center-of-gravity restrictions are observed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-31-02A	Fuel Jettison System Control Panel	___ Center Tank Jettison Isolation Valve(s) INOP
28-31-02B	Fuel Jettison System Control Panel	___ Center Tank Jettison Isolation Valve(s) INOP

(O) PROCEDURES

28-31-02A

NOTE: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

28-31-02A	CENTER TANK JETTISON ISOLATION VALVES
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 4,000 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 4,000 lbs. Enter that weight as STWL.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-26

28-31-02A	CENTER TANK JETTISON ISOLATION VALVES
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 5,400 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 5,400 lbs. Enter that weight as STWL.

28-31-02B

28-31-02B	CENTER TANK JETTISON ISOLATION VALVES
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	For dispatch with center tank fuel greater than 22,000 lbs. and Takeoff Weight exceeding 460,000 lbs., the Takeoff Weight CG must be AFT of 22% MAC. Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 4,000 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 4,000 lbs. Enter that weight as STWL.

CONTINUED NEXT PAGE

28-31-02B CENTER TANK JETTISON ISOLATION VALVES	
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	For dispatch with center tank fuel and Takeoff Weight exceeding 523,000 lbs., the Takeoff Weight CG must be AFT of 25% MAC. Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 5,400 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 5,400 lbs. Enter that weight as STWL.

(M) PROCEDURES

28-31-02A

Defer and deactivate the Fuel Jettison System per [MEL 28-31-01A](#).

Deactivate and secure the affected inoperative Center Tank Jettison Isolation Valve(s) in the closed position (AMM 28-00-00/901).

28-31-02B

Deactivate and secure the affected inoperative Center Tank Jettison Isolation Valve(s) in the closed position (AMM 28-00-00/901).

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-28

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-31-03	Main Tanks Jettison Pumps "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Inoperative pump is deactivated, and b) Appropriate performance penalties are applied.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-31-03	Fuel Jettison System Control Panel	___ Main Tanks Jettison Pump(s) INOP

(O) PROCEDURES

28-31-03	MAIN TANKS JETTISON PUMPS
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	For no center tank fuel, limit the takeoff weight to the maximum climb limited landing weight at the departure airport plus 4,000 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) In the absence of center tank fuel, determine Landing Climb Limit at departure airport plus 4,000 lbs. Enter that weight as STWL.

28-31-03	MAIN TANKS JETTISON PUMPS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	For no center tank fuel, limit the takeoff weight to the maximum climb limited landing weight at the departure airport plus 5,400 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) In the absence of center tank fuel determine Landing Climb Limit at departure airport plus 5,400 lbs. Enter that weight as STWL.

CONTINUED NEXT PAGE

(M) PROCEDURES

Deactivate the inoperative main tank jettison pump by pulling and securing the applicable circuit breakers:

Inoperative Pump	Circuit Breaker & Location
Left Main Tank Jettison Pump	P110 Panel: L FUEL JETT PUMP CTRL
Right Main Tank Jettison Pump	P210 Panel: R FUEL JETT PUMP CTRL

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-30

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-31-04A	Fuel Jettison Nozzle Valves	N	2	1	C (M) May be inoperative secured CLOSED.
28-31-04B	Fuel Jettison Nozzle Valves "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Both jettison nozzle valves are secured CLOSED, b) Fuel jettison system is considered inoperative and deferred per MEL 28-31-01A, and c) Appropriate performance penalties are applied.
28-31-04C	Fuel Jettison Nozzle Valves (Switch VALVE Lights)	Y	2	0	C
28-31-04D	Fuel Jettison Nozzle Valves (Switch ON Lights)	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-31-04A	Fuel Jettison System Control Panel	___ Fuel Jettison Nozzle Valve INOP
28-31-04B	Fuel Jettison System Control Panel	Both Fuel Jettison Nozzle Valves INOP
28-31-04C	Fuel Jettison System Control Panel	___ Fuel Jettison Nozzle Valve (Switch VALVE Light(s) INOP
28-31-04D	Fuel Jettison System Control Panel	___ Fuel Jettison Nozzle Valve (Switch ON Light(s) INOP

(O) PROCEDURES

28-31-04B

NOTE: The Fuel Synoptic will incorrectly indicate jettison flow from the center tank when the center tank override pumps are on with fuel in the center tank. The FUEL JETT NOZZLE L and R advisory messages will be displayed and overhead panel L and R fuel jettison nozzle VALVE lights will be illuminated.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-31

28-31-04B	FUEL JETTISON NOZZLE VALVES – BOTH INOP
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 4,000 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 4,000 lbs. Enter that weight as STWL.

28-31-04B	FUEL JETTISON NOZZLE VALVES – BOTH INOP
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	Limit the takeoff weight to the maximum landing climb limited weight at the departure airport plus 5,400 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Determine Landing Climb Limit at departure airport plus 5,400 lbs. Enter that weight as STWL.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-32

(M) PROCEDURES

28-31-04A

Secure the affected inoperative Fuel Jettison Nozzle Valve in the closed position (AMM 28-00-00/901).

28-31-04B

Secure the inoperative Fuel Jettison Nozzle Valves in the closed position (AMM 28-00-00/901).
Defer and deactivate the Fuel Jettison System per [MEL 28-31-01A](#).

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-33

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-40-01	Fuel Synoptic Display	Y	1	0 C	May be inoperative provided individual fuel quantity indications required for dispatch operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-40-01	Center Display Control Panel	Fuel Synoptic Display INOP

OPERATIONS NOTE:

If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) may restore the missing data. Synoptic Displays containing missing data may continue to be used to the extent remaining data is useful.

NOTE: Airplane system faults will be annunciated by EICAS alerting and status messages.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	FUEL QUANTITY INDICATIONS (FLIGHT DECK)				
28-41-01A	Center Tank "DISP.APPR.REQ'D."	N	1	0	B (O)(M) May be inoperative provided: a) Main tank fuel quantity indications operate normally, b) Fuel quantity in center tank is verified by an alternate procedure, c) All pumps for the center tank operate normally, d) Fuel flow indications operate normally, e) FMC FUEL is initialized with the known total fuel quantity, f) Flight remains within 180 minutes of landing at a suitable airport, g) Appropriate gross weight and center-of-gravity restrictions are applied, and h) The total fuel quantity indication will also be inoperative and must be deferred per MEL 28-41-04. <u>Polar Operations</u> Not Authorized
28-41-01B	Main Tanks "DISP.APPR.REQ'D."	N	2	1	B (O)(M) One may be inoperative provided: a) Center tank fuel quantity indication operates normally, b) Fuel quantity in associated tank is verified by an alternate procedure, c) All pumps for the associated tank operate normally, d) Fuel flow indications operate normally, e) FMC FUEL is initialized with the known total fuel quantity, f) Flight remains within 180 minutes of landing at a suitable airport, g) Appropriate gross weight and center-of-gravity restrictions are appliedand h) The total fuel quantity indication will also be inoperative and must be deferred per MEL 28-41-04. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-41-01A	1. Below EICAS Display 2. Refuel Panel Fuel Qty Display	Center Tank Flight Deck Fuel Quantity Indication INOP
28-41-01B	1. Below EICAS Display 2. Refuel Panel Fuel Qty Display	___ Flight Deck Fuel Quantity Indication INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-35

(O) PROCEDURES

28-41-01A, 28-41-01B

NOTE: FUEL IMBALANCE or FUEL IN CENTER and FUEL LOW CENTER advisory messages may not be displayed when appropriate.

1. Total fuel quantity must be calculated and manually initialized on the FMC Performance Initialization page.

NOTE: The FMC CALCULATED fuel quantity will be blank prior to manual initialization.

- a. Manually enter the total fuel quantity on the PERF INIT page of the CDU. MANUAL will be displayed next to the entered fuel quantity.
 - b. Verify the fuel quantity entered is displayed under the CALCULATED fuel quantity display on the Progress Page 2/3.
2. Flight crew should monitor FMC Calculated fuel and the operative fuel tank quantity indications to ensure usages are normal and to derive the amount of fuel in the tank with the inoperative quantity indication when necessary.
 3. The flight must remain within 180 minutes of landing at a suitable airport.
 4. For center tank indication inoperative, the FUEL LOW CENTER advisory message will not operate. When FUEL PUMP CENTER L or R advisory messages are displayed, perform the associated Delta 777 QRH Non-Normal procedure.
 5. If it is necessary to jettison fuel enroute:

NOTE: Selection of fuel jettison with a fuel quantity indication inoperative causes all FMC performance and VNAV data to become invalid. If VNAV is the current active pitch mode of the Autopilot Flight Director System (AFDS), the AFDS pitch mode will fail with a resulting master caution light illumination, AUTOPILOT caution message and amber bar through the pitch annunciation on the Primary Flight Display (PFD).

- a. Fuel jettison system maximum landing weight and fuel to remain automatic shutoff functions will be inoperative.
- b. FUEL AUTO JETTISON caution message will be displayed. Perform the associated Delta 777 QRH Non-Normal procedure.

28-41-01A 28-41-01B	FUEL QUANTITY INDICATIONS (FLIGHT DECK)
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	If the Takeoff Weight exceeds 495,000 lbs., the Takeoff Weight CG must be AFT of 20% MAC.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

CONTINUED NEXT PAGE

28-41-01A 28-41-01B	FUEL QUANTITY INDICATIONS (FLIGHT DECK)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	If the Takeoff Weight exceeds 563,000 lbs., the Takeoff Weight CG must be AFT of 22.2% MAC.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

(M) PROCEDURES

28-41-01A, 28-41-01B

NOTE 1: The total fuel quantity indication will also be inoperative and must also be [deferred per MEL 28-41-04](#).

NOTE 2: For refueling procedures with inoperative fuel quantity indications, refer to [TOHP Fleet Manuals / Fueling Procedures Manual, Fueling Procedures, Document B777.10 – B777.60](#).

Verify the fuel quantity in the tank associated with the inoperative quantity indication using one of the following methods:

1. Use the associated tank's Integrated Refuel Panel (IRP) (P28) quantity indication (if operating).
2. Refuel using the FMC Calculated Fuel on CDU Progress Page 2/3 from previous flight and operating fuel quantity indications to determine the associated tank quantity. Then refuel the associated tank with a known quantity of fuel. A fuel tanker's fuel indication may be used if verified by the associated tank's fuel measuring sticks.
3. Defuel the associated tank (AMM 28-26-00/201) and service with a known quantity of fuel (AMM 12-11-01/301).
4. Determine the fuel quantity using the associated tank's measuring sticks.

NOTE: The fuel quantity measuring sticks may not give accurate results until 5 to 15 minutes after refueling operations are complete.

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-37

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-41-02	Fuel Quantity Processor Input / Output (I/O) Channels "Contact MCC"	Y	2	1 B	(O) May be inoperative provided: a) All flight deck fuel indications operate normally, b) Fuel flow indications operate normally, and c) FMC TOTALIZER FUEL quantity agrees with fuel quantity indications.

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-41-02	Below EICAS Display	Fuel Quantity Processor Input / Output Channel INOP

(O) PROCEDURES

Flight deck fuel indications operate normally if the EICAS status message FUEL QTY INDICATION is not displayed. Verify that the fuel quantities loaded agree with the quantity indications on Fuel Synoptic, FMC and EICAS display.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-41-04	Total Fuel Quantity Indication "DISP.APPR.REQ'D."	Y	1	0	C
					(O) May be inoperative provided: a) Fuel flow indications operate normally b) FMC FUEL is initialized with the known total fuel quantity, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-41-04	Below EICAS Display	Total Fuel Quantity Indication INOP

(O) PROCEDURES

- Total fuel quantity must be calculated and manually initialized on the FMC Performance Initialization page.

NOTE: The FMC CALCULATED fuel quantity will be blank prior to manual initialization.

- Manually enter the total fuel quantity on the PERF INIT page of the CDU. MANUAL will be displayed next to the entered fuel quantity.
 - Verify the fuel quantity entered is displayed under the CALCULATED fuel quantity display on the Progress Page 2/3.
- Flight crew should monitor FMC Calculated fuel and the operative fuel tank quantity indications to ensure usages are normal.
 - The flight must remain within 180 minutes of landing at a suitable airport.
 - If it is necessary to jettison fuel enroute:

NOTE: Selection of fuel jettison with Total Fuel Quantity Indication inoperative causes all FMC performance and VNAV data to become invalid. If VNAV is the current active pitch mode of the Autopilot Flight Director System (AFDS), the AFDS will mode fail with a resulting master caution, AUTOPILOT caution message and amber bar through the pitch annunciation on the Primary Flight Display (PFD).

- Fuel jettison system maximum landing weight and fuel to remain automatic shutoff functions will be inoperative.
- FUEL AUTO JETTISON caution message will be displayed. Perform the associated Delta 777 QRH Non-Normal procedure.

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-39

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
28-43-01	Fuel Temperature Indicating System "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided Total Air Temperature (TAT) is used as an indication of fuel temperature. <u>Polar Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
28-43-01	Below EICAS Display	Fuel Temperature Indicating System INOP

(O) PROCEDURES

Monitor fuel temperature using TAT.

NOTE: FUEL TEMP LOW advisory message will not be displayed with Fuel Temperature Indicating System inoperative.

	B777 Minimum Equipment List	ATA 28 Fuel	R14 05/09/16 Page 28-40

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
28-44-01	Measuring Sticks	N	16	0	C	May be inoperative provided fuel quantity is determined by other acceptable means.

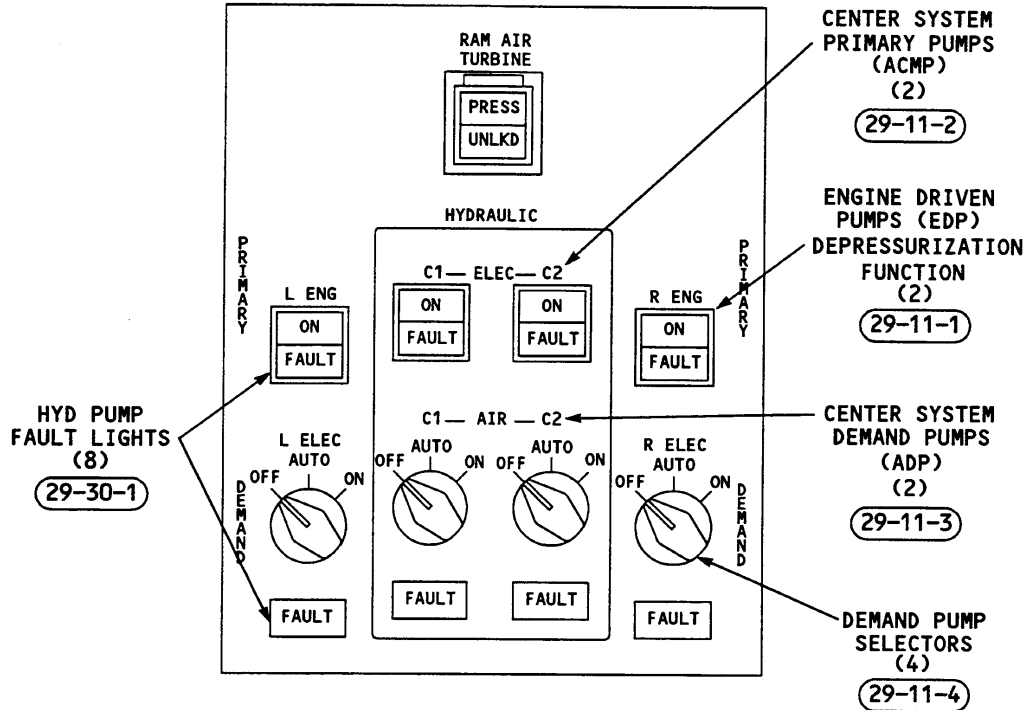
MEL ITEM	TAB LOCATION	PLACARD TEXT
28-44-01	Fuel System Control Panel	___ Measuring Stick(s) INOP

NOTE: Use fuel quantity indicating system to fuel airplane. If fuel quantity indications are inoperative, refer to [MEL item 28-41-01](#).

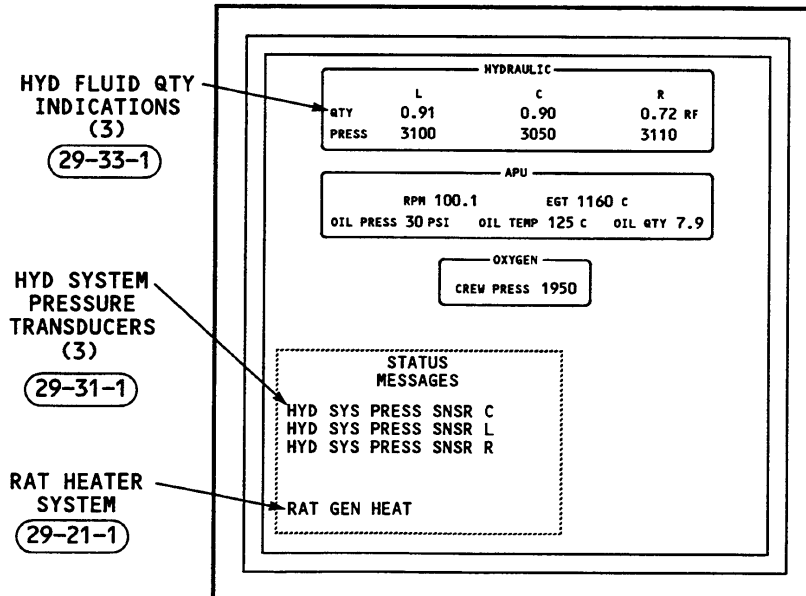
ATA 29 Contents

29-11-01	Engine Driven Pumps (EDP) Depressurization Function.....	29-5
29-11-02	Center System Primary Alternating Current Motor Pumps (ACMP)	29-6
29-11-03A	Center System Demand Air Driven Pumps (ADP)	29-7
29-11-03C	ADP Auto/Heater Function	29-7
	DEMAND PUMP SELECTORS.....	29-16
29-11-04A	Center System AUTO Position.....	29-16
29-11-04B	Left & Right System AUTO Position.....	29-16
29-11-04C	ON Position	29-16
29-11-05	Hydraulic Interface Module (HYDIM) Cards.....	29-17
29-11-06	Center Hydraulic Isolation System	29-19
29-18-01	Reservoir Quantity Gage (Remote).....	29-20
29-18-02A	Hydraulic System Accumulators	29-21
29-18-02B	Charging Valves	29-21
29-18-02C	Charging Gages	29-21
29-21-01	RAT Heater System	29-22
29-21-02A	RAM AIR TURBINE Switch Lights (UNLKD Light).....	29-23
29-21-02B	RAM AIR TURBINE Switch Lights (PRESS Light).....	29-23
29-30-01A	Hydraulic Pump Lights (FAULT Lights).....	29-24
29-30-01B	Hydraulic Pump Lights (ON Lights).....	29-24
29-30-02	Hydraulic Synoptic Display.....	29-25
29-31-01	Hydraulic System Pressure Transducers.....	29-26
	PUMP PRESSURE INDICATION SYSTEMS	29-27
29-31-02A	Left & Right Systems.....	29-27
29-31-02B	Center System.....	29-27
	PUMP TEMPERATURE INDICATIONS.....	29-30
29-32-01A	Left & Right Systems.....	29-30
29-32-01B	Center System.....	29-30
29-33-01	Hydraulic Fluid Quantity Indications (Flight Deck)	29-32

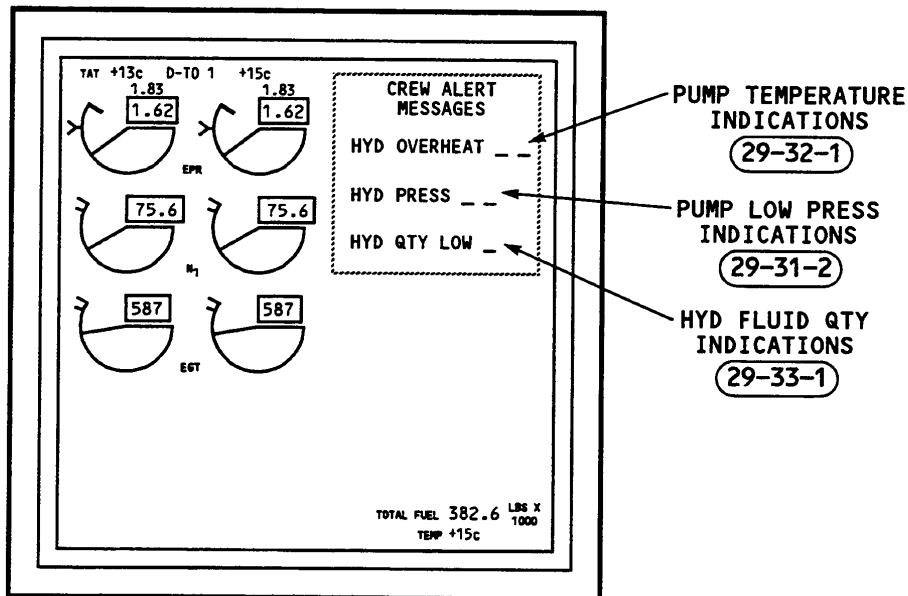
HYDRAULIC PANEL (P5)



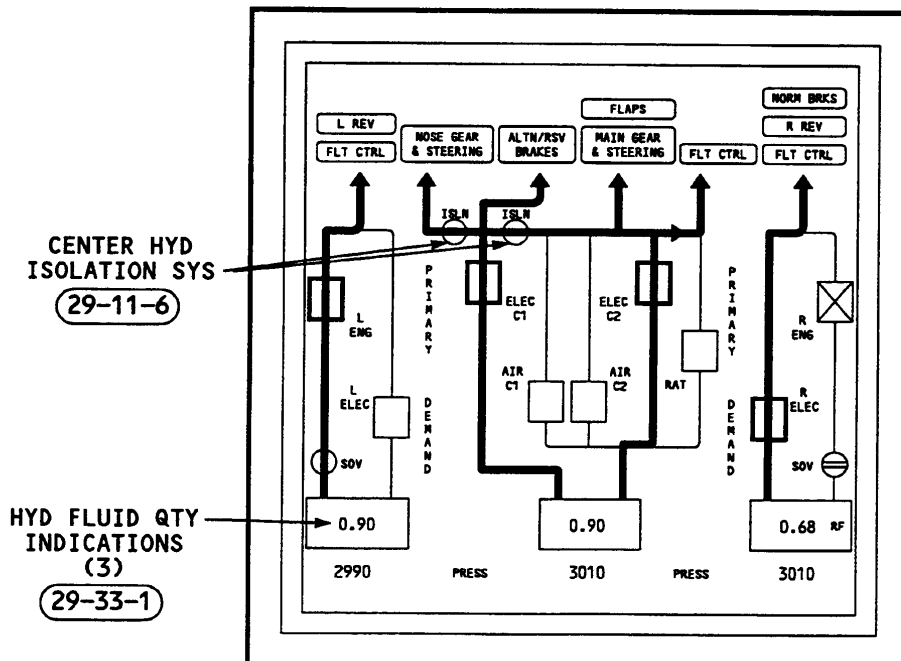
MFD - EICAS STATUS PAGE



EICAS DISPLAY

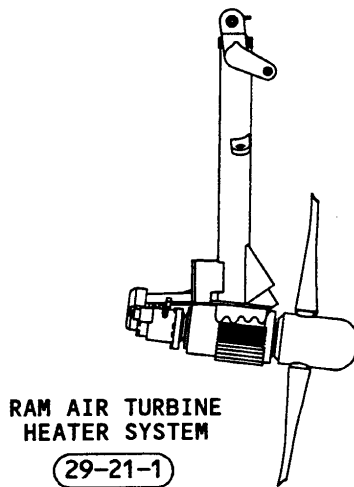
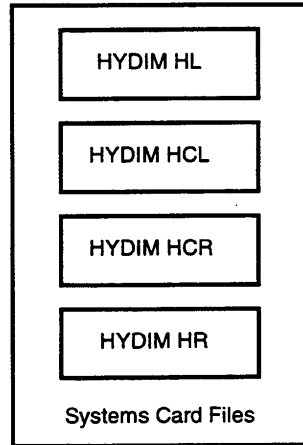


HYDRAULIC SYNOPTIC DISPLAY (29-30-2)

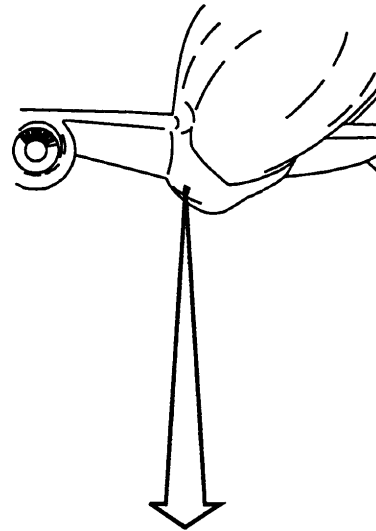


P84 & P85 CARDFILES

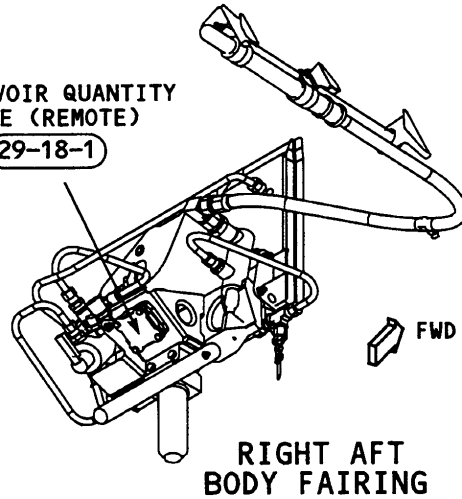
HYDRAULIC
INTERFACE
MODULE
(HYDIM) CARDS
(29-11-5)



SECTION 48 HYDRAULIC SYSTEM ACCUMULATORS (29-18-2)



RESERVOIR QUANTITY
GAGE (REMOTE)
(29-18-1)



	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-5

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
29-11-01	Engine Driven Pumps (EDP) Depressurization Function	Y	2	1	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-11-01	Hydraulic System Control Panel	___ Engine Hydraulic Pump Depressurization Function INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
29-11-02	Center System Primary Alternating Current Motor Pumps (ACMP)	N	2	1	C	(O)(M) May be inoperative provided: a) Inoperative center ACMP is deactivated, and b) Both center ADPs operate normally.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-11-02	Hydraulic System Control Panel	___ ACMP INOP

(O) PROCEDURES

NOTE: During an engine start, turning the nose wheel more than 13 degrees by tiller input or towing, or moving a flight control surface, may cause a low center system hydraulic pressure condition resulting in the display of EICAS messages.

1. For center system PRIMARY C1 ELEC pump inoperative, position PRIMARY C1 ELEC switch off.
2. For center system PRIMARY C2 ELEC pump inoperative, position PRIMARY C2 ELEC switch off.

(M) PROCEDURES

Deactivate the inoperative center system primary pump.

1. For center system PRIMARY ELEC C1 inoperative:

- a. Position Hydraulic Panel (P5) PRIMARY ELEC C1 switch off.
- b. Open P110 panel C1 HYD PUMP CTRL circuit breaker.

NOTE: Opening the C1 HYD PUMP CTRL circuit breaker results in EICAS status message HYD ISLN VALVE. Message clears when breaker is closed in step 1d.

- c. Disconnect, cap and stow electrical connector D10008P on P100 panel and cap the P100 panel jack (J8).
- d. Close P110 C1 HYD PUMP CTRL circuit breaker.

2. For center system PRIMARY ELEC C2 inoperative:

- a. Position Hydraulic Panel (P5) PRIMARY ELEC C2 switch off.
- b. Pull and secure P210 panel C2 HYD PUMP CTRL circuit breaker.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-11-03A	Center System Demand Air Driven Pumps (ADP) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative selected OFF provided: a) Both center system ACMPs operate normally, b) Remaining ADP heater operates normally, c) Remaining ADP AUTO function operates normally, d) Associated pump is verified not running when selected OFF, e) APU is used as ADP air source during takeoff, and f) Appropriate performance adjustments are applied.
29-11-03B	Center System Demand Air Driven Pumps (ADP) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative selected OFF provided: a) Both center system ACMPs operate normally, b) Associated pump is verified not running when selected OFF, c) Remaining ADP is selected ON for the entire flight, d) APU is used as ADP air source during takeoff, and e) Appropriate performance adjustments are applied.
29-11-03C	ADP Auto/Heater Function	N	2	1	C (O)(M) May be inoperative provided: a) Remaining ADP operates normally, b) Associated ADP ON and OFF selector positions are verified to operate normally, and c) Associated ADP is selected ON for the entire flight.
29-11-03D	ADP Auto/Heater Function "DISP.APPR.REQ'D"	N	2	1	C (O)(M) May be inoperative provided: a) Both center system ACMPs operate normally, b) Associated ADP ON and OFF selector positions are verified to operate normally, c) Associated ADP is selected ON for the entire flight, d) APU is used as ADP air source during takeoff, and e) Appropriate performance adjustments are applied.
29-11-03E	ADP Auto/Heater Function "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Both center system ACMPs operate normally, b) ADP ON and OFF selector positions are verified to operate normally for both pumps, c) One ADP is selected ON for the entire flight, d) APU is used as ADP air source during takeoff, and e) Appropriate performance adjustments are applied.

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-11-03A	Hydraulic System Control Panel	___ ADP INOP
29-11-03B	Hydraulic System Control Panel	___ ADP INOP
29-11-03C	Hydraulic System Control Panel	___ ADP Auto/Heater Function INOP
29-11-03D	Hydraulic System Control Panel	___ ADP Auto/Heater Function INOP
29-11-03E	Hydraulic System Control Panel	Both ADP Auto/Heater Functions INOP

NOTE: MEL relief for ADP heater failures is addressed by this item. Since an ADP heater failure may result in ADP icing which may prevent the associated pump from operating in AUTO, the heater faults are linked to the ADP Auto Function item. An ADP heater failure results in a HYD PUMP DEM C1 or C2 status message. This ADP status message is inhibited (not displayed) if the ADP heater fault (overcurrent or control power interface faults) is set and the associated ADP is selected ON and the pump is pressurized.

(O) PROCEDURES

29-11-03A

NOTE 1: Failure of the remaining center system Demand pump prior to gear retraction would result in slow gear retraction. The EICAS GEAR DISAGREE and GEAR DOOR messages will appear.

NOTE 2: (-200LR) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position the inoperative center system Demand pump selector OFF for the entire flight.
2. For takeoff, configure the pneumatic system with the APU supplying air for the operative center system Demand pump:
 - a. Position BLEED AIR panel APU switch to AUTO.
 - b. Start the APU, if it is not operating.
 - c. Position BLEED AIR panel L ISLN and R ISLN switches CLOSED. The EICAS advisory messages BLEED ISLN CLOSED L and BLEED ISLN CLOSED R will be displayed.
 - d. After takeoff is completed, position BLEED AIR panel L ISLN and R ISLN switches AUTO and configure the APU as required (may be off if not required by other dispatch items).

CONTINUED NEXT PAGE

29-11-03A	CENTER SYSTEM DEMAND AIR DRIVEN PUMPS (ADP) / AUTO FUNCTION
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACKS ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,400 lbs. TAKEOFF – PACKS OFF None LANDING None

29-11-03A	CENTER SYSTEM DEMAND AIR DRIVEN PUMPS (ADP) / AUTO FUNCTION
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF- PACKS ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,700 lbs. TAKEOFF – PACKS OFF None LANDING None

29-11-03B

NOTE 1: Failure of the remaining center system Demand pump prior to gear retraction would result in slow gear retraction. The EICAS GEAR DISAGREE and GEAR DOOR messages will appear.

NOTE 2: (-200LR) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position the inoperative center system DEMAND pump selector OFF for the entire flight.
2. Position remaining operative DEMAND Pump (C1 or C2) selector ON prior to takeoff and leave ON for the entire flight.

NOTE: Do not position center system DEMAND pump selector to ON before engine start.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R11 10/18/12 Page 29-10

3. For takeoff, configure the pneumatic system with the APU supplying air for the remaining operative center system Demand pump:
 - a. Position BLEED AIR panel APU switch to AUTO.
 - b. Start the APU, if it is not operating.
 - c. Position BLEED AIR panel L ISLN and R ISLN switches CLOSED. The EICAS advisory messages BLEED ISLN CLOSED L and BLEED ISLN CLOSED R will be displayed.
 - d. After takeoff is completed, position BLEED AIR panel L ISLN and R ISLN switches AUTO and configure the APU as required (may be off if not required by other dispatch items).

29-11-03B	CENTER SYSTEM DEMAND AIR DRIVEN PUMPS (ADP) / AUTO FUNCTION
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF- PACKS ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,400 lbs. TAKEOFF – PACKS OFF None LANDING None

29-11-03B	CENTER SYSTEM DEMAND AIR DRIVEN PUMPS (ADP) / AUTO FUNCTION
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF- PACKS ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,700 lbs. TAKEOFF – PACKS OFF None LANDING None

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29-11-03C

1. Position affected DEMAND Pump (C1 or C2) selector ON prior to takeoff and leave ON for the entire flight.

NOTE 1: Do not position center system DEMAND pump selector to ON before engine start.

NOTE 2: Position remaining DEMAND Pump (C1 or C2) selector AUTO per normal procedures.

NOTE 3: If operation of the pump with an inoperative auto function throughout the flight is unacceptable, the pump may be considered inoperative. Request dispatch per MEL 29-11-03A. Performance penalties would then apply.

29-11-03D

NOTE: (-200LR) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position one center system DEMAND pump selector ON prior to takeoff and leave ON for the entire flight.

NOTE: Do not position center system DEMAND pump selector ON before engine start.

2. Position remaining center system DEMAND pump selector AUTO.
3. For takeoff, configure the pneumatic system with the APU supplying air for the remaining operative center system demand pump
 - a. Position APU Bleed air switch AUTO.
 - b. Start the APU if it is not operating.
 - c. Position Bleed Isolation L ISLN and R ISLN switches CLOSED.

NOTE: The BLEED ISLN CLOSED L and BLEED ISLN CLOSED R advisory messages will be displayed.

- d. After takeoff is compiled, position Bleed Isolation L ISLN and R ISLN switches AUTO and configure APU as required.

29-11-03D	ADP AUTO/HEATER FUNCTION
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,400 lbs. TAKEOFF – PACKS OFF None LANDING None

CONTINUED NEXT PAGE

29-11-03D ADP AUTO/HEATER FUNCTION	
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,700 lbs. TAKEOFF – PACKS OFF None LANDING None

29-11-03E

NOTE: (-200LR) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position one DEMAND Pump (C1 or C2) selector ON prior to takeoff and leave ON for the entire flight.

NOTE 1: Do not position center system DEMAND pump selector to ON before engine start.

NOTE 2: Position remaining DEMAND Pump (C1 or C2) selector AUTO per normal procedures. This pump may operate normally, but must be considered inoperative as it may not start when required depending upon temperature.

2. For takeoff, configure the pneumatic system with the APU supplying air for the center system Demand pumps:
 - a. Position BLEED AIR panel APU switch to AUTO.
 - b. Start the APU, if it is not operating.
 - c. Position BLEED AIR panel L ISLN and R ISLN switches CLOSED. The EICAS advisory messages BLEED ISLN CLOSED L and BLEED ISLN CLOSED R will be displayed.
 - d. After takeoff is completed, position BLEED AIR panel L ISLN and R ISLN switches AUTO and configure the APU as required (may be off if not required by other dispatch items).

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29-11-03E	ADP AUTO/HEATER FUNCTION
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,400 lbs. TAKEOFF – PACKS OFF None LANDING None

29-11-03E	ADP AUTO/HEATER FUNCTION
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON Reduce RATOW by 9,600 lbs. Reduce T/O CLIMB LIMIT by 1,700 lbs. TAKEOFF – PACKS OFF None LANDING None

(M) PROCEDURES

29-11-03A

1. Supply electrical power on the airplane.
2. Verify the remaining center system demand ADP heater operates normally:
 - a. Verify that EICAS status message HYD PUMP DEM C1 or C2 is NOT displayed for the remaining operative pump.
3. Verify that the inoperative center system demand is not running when selected OFF.
 - a. Position all (4) Hydraulic Panel (P5) center system hydraulic pumps OFF.
 - b. Depressurize the center hydraulic system.

NOTE: It is not necessary to depressurize the reservoir.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R11 10/18/12 Page 29-14

- c. Pressurize the pneumatic system.
 - d. Verify the inoperative ADP is not running.
 - 1) Use a CDU to select the Hydraulic maintenance page on a multi-function display.
 - 2) Verify that the associated center system hydraulic demand pump is not running by observing that the associated DEMAND PUMP PRESS is less than 100 psig and the associated DEMAND PUMP RUN = NO.
 - 3) If ADP is not running, no further action required.
 - 4) Put the airplane back to its usual condition with regard to pneumatic pressure.
4. If the inoperative ADP was running in Step 3.d.2), it must be disconnected as follows:
- a. Open the P310 panel circuit breaker for the inoperative ADP, C HYD AIR PUMP 1 for ADP C1 or C HYD AIR PUMP 2 for ADP C2.
 - b. Gain access to the left or right systems card file in the main equipment center.
 - 1) For the C1 ADP inoperative, position the power switch for the HYDIM CR OFF on the front of the right systems card file (P84).
 - 2) For the C2 ADP inoperative, position the power switch for the HYDIM CL OFF on the front of the left systems card file (P85).
 - c. Open the air driven pump access door, 197JL.
 - d. Locate the Logic Speed Control Unit (LSCU) for the inoperative ADP.
 - 1) For the C1 ADP inoperative, disconnect connector DM29306A from the LSCU, cap and stow. Also, cap the LSCU receptacle.
 - 2) For the C2 ADP inoperative, disconnect connector DM29321A from the LSCU, cap and stow. Also, cap the LSCU receptacle.
 - e. Position associated systems card file HYDIM card power switch ON, which was previously selected OFF in Step 4.b.1) or 4.b.2).
 - f. Close associated P310 panel circuit breaker, which was previously opened in Step 4.a. above.
 - g. Verify the inoperative ADP is not running by using the procedure in Step 3.a through 3.d. above. If the pump continues to run, do not dispatch the airplane.
 - h. Close the air driven pump access door, 197JL.
 - i. Remove electrical power and pneumatic pressure from the airplane if no longer required.

29-11-03B

1. Verify that the inoperative center system demand is not running when selected OFF.
 - a. Supply electrical power on the airplane.
 - b. Position all (4) Hydraulic Panel (P5) center system hydraulic pumps OFF.
 - c. Depressurize the center hydraulic system.

NOTE: It is not necessary to depressurize the reservoir.

 - d. Pressurize the pneumatic system.
 - e. Verify the inoperative ADP is not running.
 - 1) Use a CDU to select the Hydraulic maintenance page on a multi-function display.
 - 2) Verify that the associated center system hydraulic demand pump is not running by observing that the associated DEMAND PUMP PRESS is less than 100 psig and the associated DEMAND PUMP RUN = NO.
 - 3) If ADP is not running, no further action required.
 - 4) Put the airplane back to its usual condition with regard to pneumatic pressure.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-15

2. If the inoperative ADP was running in Step 1.e.2), it must be disconnected as follows:
 - a. Open the P310 panel circuit breaker for the inoperative ADP, C HYD AIR PUMP 1 for ADP C1 or C HYD AIR PUMP 2 for ADP C2.
 - b. Gain access to the left or right systems card file in the main equipment center.
 - 1) For the C1 ADP inoperative, position the power switch for the HYDIM CR OFF on the front of the right systems card file (P84).
 - 2) For the C2 ADP inoperative, position the power switch for the HYDIM CL OFF on the front of the left systems card file (P85).
 - c. Open the air driven pump access door, 197JL.
 - d. Locate the Logic Speed Control Unit (LSCU) for the inoperative ADP.
 - 1) For the C1 ADP inoperative, disconnect connector DM29306A from the LSCU, cap and stow. Also, cap the LSCU receptacle.
 - 2) For the C2 ADP inoperative, disconnect connector DM29321A from the LSCU, cap and stow. Also, cap the LSCU receptacle.
 - e. Position associated systems card file HYDIM card power switch ON, which was previously selected OFF in Step 2.b.1) or 2) above.
 - f. Close associated P310 panel circuit breaker, which was previously opened in Step 2.a. above.
 - g. Verify the inoperative ADP is not running by using the procedure in Step 1.a. through 1.e. above. If the pump continues to run, do not dispatch the airplane.
 - h. Close the air driven pump access door, 197JL.
 - i. Remove electrical power and pneumatic pressure from the airplane if no longer required.

29-11-03C, 29-11-03D, 29-11-03E

For inoperative ADP Auto Function (one or both), verify affected ADP(s) ON and OFF selector positions operate normally:

NOTE: If HYD PUMP DEM C1 **and** C2 messages are displayed, perform the following test for each pump system separately.

1. Supply electrical power on the airplane.
2. Pressurize the pneumatic system.
3. Position the associated Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector ON.
4. Verify that the associated EICAS status message HYD PUMP DEM C1 or C2 clears. If the message clears, proceed to Step 6 below.
5. If the associated EICAS message does not clear, the pump is inoperative. See MEL 29-11-03A or 29-11-03B.
6. Position the associated Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector OFF.
7. Verify that the associated EICAS status message HYD PUMP DEM C1 or C2 is displayed.
8. Depressurize the pneumatic system.
9. Remove electrical power from the airplane if no longer required.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
DEMAND PUMP SELECTORS						
29-11-04A	Center System AUTO Position “DISP.APPR.REQ’D”	Y	2	0	C	May be inoperative provided provided associated demand ADP auto function is considered inoperative and deferred per MEL 29-11-03.
29-11-04B	Left & Right System AUTO Position	Y	2	0	C	(O) May be inoperative provided: a) ON and OFF positions operate normally, and b) Associated pump selector is ON for takeoff and landing.
29-11-04C	ON Position	Y	4	0	C	May be inoperative provided the AUTO and OFF positions for associated pump operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-11-04A	Hydraulic System Control Panel	___ Hydraulic Demand Pump Selector INOP
29-11-04B	Hydraulic System Control Panel	___ Hydraulic Demand Pump Selector INOP
29-11-04C	Hydraulic System Control Panel	___ Hydraulic Demand Pump Selector ON Position INOP

MAINTENANCE NOTE

The pump EICAS alerting message HYD PRESS DEM L, R, C1 or C2 and status message HYD PUMP DEM L, R, C1 or C2 may be displayed when the demand pump selector is placed in an inoperative position. In order to dispatch under this item, these messages must not be displayed when the pump selector is placed in the remaining operative position (for the ON position inoperative and AUTO operative, the pump must also be commanded ON to clear the message(s)).

(O) PROCEDURES

29-11-04B

- For AUTO position inoperative, position the affected selector to ON for takeoff and landing (selector may be left in ON position for the entire flight if desired).
- Do not position center system Demand pump selector to ON before engine start.
- To reduce noise, center system Demand pump may be positioned to OFF for the other phases of flight.

NOTE: If the pump selector is placed in an inoperative position, the EICAS alerting message HYD PRESSURE DEM L, R, C1 or C2 will be displayed. For the AUTO position inoperative, this message will not be displayed until the pump is commanded on.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-11-05	Hydraulic Interface Module (HYDIM) Cards "DISP.APPR.REQ'D"	N	4	3	C (M) May be inoperative provided: a) Inoperative card is in the HYDIM center right (HCR) card position, b) Individual center system pump pressure indications operate normally, and c) Center system Demand ADP C1 auto function is considered inoperative and deferred per MEL 29-11-03

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-11-05	Hydraulic System Control Panel	___ HYDIM Card INOP

NOTE: The Hydraulic Synoptic Display may have incomplete or missing information.

(M) PROCEDURES

Access the right system cardfile, P84, and locate HYDIM CARD HCR, position A4. Place the power switch for that card OFF for dispatch. Use the power control decal on the front of the cardfile to find the appropriate switch.

The following procedures only apply if the failed HYDIM card is in the Left, Right or Center Left position. If failed card is in the Center Right position no further maintenance action is required. If the failed card is in other than the Center Right position, the following gives instructions to reposition the cards for dispatch.

Inoperative HYDIM card must be in the HYDIM Center Right (HCR) card position (for center system DEMAND AIR C1 operative or inoperative). Configure HYDIM cards if required as follows:

- Gain access to HYDIM cards in the right systems cardfile (P84) and left systems cardfile (P85) in the main equipment center.
- Set the power switches for the inoperative HYDIM card and the HYDIM HCR card off. Use the power control decal on the front of the cardfile to find the appropriate switch.
- Open the circuit breakers for the two HYDIM cards to be exchanged as outlined in the table below:

HYDIM L	HYDIM CL	HYDIM CR	HYDIM R
P11 / L ENG EDP SUPPLY VALVE	P110 / C1 HYD PUMP CTRL	P11 / RAT AUTO CTRL	P11 / R ENG EDP SUPPLY VALVE
P11 / LDG GEAR RETR AUTO OFF	P310 / C HYD AIR PUMP 2	P310 / C HYD AIR PUMP 1	P11 / LDG GEAR RETR AUTO OFF
P110 / L D-PRESS VLV SPLY	P310 / RAT MAN/AUTO CTRL		P210 / R D-PRESS VLV SPLY
	P310 / NOSE GEAR ISLN VALVE		

- Loosen the 12 captive screws to open the front panel for the applicable systems cardfile.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-18

5. Exchange the inoperative HYDIM card with the serviceable HYDIM HCR card. (Refer to AMM regarding handling of printed circuit boards, if unfamiliar.) HYDIM card locations are as follows:
 - a. HYDIM CARD HCR, right systems cardfile P84 position A4.
 - b. HYDIM CARD HR, right systems cardfile P84 position A17.
 - c. HYDIM CARD HCL, left systems cardfile P85 position A4.
 - d. HYDIM CARD HL, left systems cardfile P85 position A17.
6. Set the power switches for HYDIM cards HR, HCL and HL to on (HCR power switch is to remain off).
7. Close the front panel and close the circuit breakers opened in step 3 above.
8. Use the maintenance access terminal (MAT) to do an LRU replacement test of the serviceable HYDIM card which was exchanged. Following this test, only the HYDIM CARD HCR status message should be displayed.

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-19

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-11-06	Center Hydraulic Isolation System	N	1	0	C (M) May be inoperative deactivated open.

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-11-06	Hydraulic System Control Panel	Center Hydraulic Isolation System INOP

OPERATIONS NOTE:

The RESERVE BRAKES/STRG advisory message will be displayed. Do not accomplish the RESERVE BRAKES / STRG Non-Normal Checklist.

For failures resulting in HYD PRESS SYS C caution message being displayed, accomplish the HYD PRESS SYS C and the RESERVE BRAKES / STRG Non-Normal Checklists.

(M) PROCEDURES

Deactivate center hydraulic isolation system with reserve isolation valve and nose gear isolation valve in the open positions.

1. Open the landing gear doors and install safety pins.
2. Open P110 panel C1 HYD PUMP CTRL circuit breaker.
3. Pull and secure P310 panel NOSE GEAR ISLN VALVE circuit breaker (CB stays open for dispatch).
4. Gain access to the reserve isolation valve and the nose gear isolation valve (right wheel well).
 - a. Deactivate the reserve isolation valve in the open position:
 - 1) Disconnect, cap and stow electrical connector (DV29302).
 - 2) Move the manual override handle to the OPEN position and lockwire.
 - b. Deactivate the nose gear isolation valve in the open position:
 - 1) Disconnect, cap and stow electrical connector (DV29303).
 - 2) Move the manual override handle to the OPEN position and lockwire.
5. Close P110 panel C1 HYD PUMP CTRL circuit breaker.
6. Remove the landing gear door safety pins and close the landing gear doors.

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-20

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
29-18-01	Reservoir Quantity Gage (Remote)	N	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-18-01	Hydraulic System Control Panel	Remote Reservoir Quantity Gage INOP

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-21

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-18-02A	Hydraulic System Accumulators	Y	4	0	C
29-18-02B	Charging Valves	Y	3	0	C
29-18-02C	Charging Gages	Y	3	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-18-02A	Hydraulic System Control Panel	___ Hydraulic System Accumulator(s) INOP
29-18-02B	Hydraulic System Control Panel	___ Accumulator Charging Valve(s) INOP
29-18-02C	Hydraulic System Control Panel	___ Accumulator Charging Gage(s) INOP

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-22

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-21-01	RAT Heater System "Contact MCC"	N	1	0	A May be inoperative provided repairs are made within three flight days.

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-21-01	Hydraulic System Control Panel	RAT Heater System INOP

NOTE: The RAT heater system is considered to be operating normally when the current heater switch (E6 bay) position is set to the other position (HEATER 1 or HEATER 2) and the EICAS status message RAT GEN HEAT is cleared when the RAT heater is tested using MAT/PMAT.

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-23

NUMBER INSTALLED					NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				0	REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION		Y	1		C	REMARKS OR EXCEPTIONS	
29-21-02A	RAM AIR TURBINE Switch Lights (UNLKD Light)	Y	1	0	C		
29-21-02B	RAM AIR TURBINE Switch Lights (PRESS Light)	Y	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-21-02A	Hydraulic System Control Panel	RAM AIR TURBINE Switch UNLKD Light INOP
29-21-02B	Hydraulic System Control Panel	RAM AIR TURBINE Switch PRESS Light INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
29-30-01A	Hydraulic Pump Lights (FAULT Lights)	Y	8	5	C	One in each system may be inoperative.
29-30-01B	Hydraulic Pump Lights (ON Lights)	Y	4	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-30-01A	Hydraulic System Control Panel	___ Hydraulic Pump FAULT Light(s) INOP
29-30-01B	Hydraulic System Control Panel	___ Hydraulic Pump ON Light(s) INOP

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-25

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-30-02	Hydraulic Synoptic Display	Y	1	0 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-30-02	Center Display Control Panel	Hydraulic Synoptic Display INOP

OPERATIONS NOTE:

If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) may restore the missing data. Synoptic Displays containing missing data may continue to be used to the extent remaining data is useful.

NOTE: Airplane system faults will be annunciated by EICAS alerting and status messages.

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-26

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-31-01	Hydraulic System Pressure Transducers	Y	3	0 C	May be inoperative provided all associated system pump pressure indications operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-31-01	Hydraulic System Control Panel	___ Hydraulic System Pressure Transducer(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	PUMP PRESSURE INDICATION SYSTEMS				
29-31-02A	Left & Right Systems	N	4	2	C (O)(M) One in each system may be inoperative provided: a) Associated system pressure transducer operates normally, and b) Associated pump operation is verified normal PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)
29-31-02B	Center System	N	4	3	C (M) One may be inoperative provided: a) Associated system pressure transducer operates normally, and b) Associated pump operation is verified normal PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)
29-31-02C	Center System	N	4	3	C One may be inoperative for an associated inoperative pump.

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-31-02A	Hydraulic System Control Panel	___ Hydraulic Pump Pressure Indication System(s) INOP
29-31-02B	Hydraulic System Control Panel	___ Hydraulic Pump Pressure Indication System INOP
29-31-02C	Hydraulic System Control Panel	___ Hydraulic Pump Pressure Indication System INOP

NOTE: For Left & Right Systems, the pump transducer may fail such that the associated pump status message is displayed rather than the pump pressure indication status message.

(O) PROCEDURES

29-31-02A

For a pump pressure transducer disconnected per the above (M) PROCEDURE, the associated pump pressure advisory message will be displayed and the hydraulic synoptic flow bars may not indicate correctly.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-28

(M) PROCEDURES

29-31-02A

PRIOR TO EACH DEPARTURE - Verify the associated pump is operating normally. For pump status message displayed, verify the associated pump pressure indication transducer is the malfunction and disconnect the transducer.

1. Verify that the associated pump is operating normally.
 - a. Supply electrical power on the airplane.
 - b. Pressurize the associated hydraulic system with the associated pump.
 - 1) For an Alternating Current Motor Pump (ACMP), position the associated Hydraulic Panel (P5) DEMAND pump selector ON.
 - 2) For an Engine Driven Pump (EDP):
 - a) Dry motor the associated engine, or start the associated engine.
 - b) Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.
 - c. On Hydraulic Maintenance page, confirm the associated system pressure is normal after the pump has been operated for at least 60 seconds.
 - 1) For ACMP: 2700 to 3200 psi.
 - 2) For EDP: 2900 to 3200 psi.
 - d. Position the associated Hydraulic Panel (P5) pump selector or switch OFF.
 - e. If an engine was started, shutdown the engine.
2. For pump status message displayed instead of pump pressure indication status message, verify the associated pump pressure indication transducer is the malfunction and disconnect the transducer. (This is a one-time requirement and does not have to be performed prior to each departure.)
 - a. Supply electrical power on the airplane.
 - b. Pressurize the associated hydraulic system with the associated pump.
 - 1) For an Alternating Current Motor Pump (ACMP), position the associated Hydraulic Panel (P5) DEMAND pump selector ON.
 - 2) For an Engine Driven Pump (EDP):
 - a) Dry motor the associated engine, or start the associated engine.
 - b) Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.
 - c. On Hydraulic Maintenance page, confirm the following pump pressure values are displayed:
NOTE: Intermittent readings or a blank pump pressure indication also indicate a malfunctioning transducer.
 - 1) For ACMP, 0 to 2600 psi, or 3250 to 4000 psi.
 - 2) For EDP, 0 to 2800 psi, or 3250 to 4000 psi.
 - d. Position the associated Hydraulic Panel (P5) pump selector or switch OFF.
 - e. If an engine was started, shutdown the engine.
 - f. If the pneumatic system was pressurized, depressurize the pneumatic system.
 - g. Disconnect, cap and stow the applicable pump pressure transducer connector and associated wiring, and install a cap on the transducer electrical receptacle.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-29

NOTE: The hydraulic pump status message will continue to be displayed, the pump pressure on the Hydraulic maintenance page will be blank and the pump pressure indication status message will be displayed. The hydraulic synoptic flow bars may not indicate correctly.

- 1) For an ACMP, refer to AMM 29-11-41/401 pressure transducer removal procedure.
- 2) For an EDP, refer to AMM 29-11-42/401 pressure transducer removal procedure.

29-31-02B

PRIOR TO EACH DEPARTURE - Verify the associated pump is operating normally.

1. Supply electrical power on the airplane.
2. Pressurize the associated hydraulic system with the associated pump.
 - a. For an Alternating Current Motor Pump (ACMP), position the associated Hydraulic Panel (P5) PRIMARY pump switch ON.
 - b. For an Air Driven Pump (ADP):
 - 1) Pressurize the pneumatic system.
 - 2) Position the associated Hydraulic Panel (P5) DEMAND pump selector ON.
3. On Hydraulic Maintenance page, confirm the associated system pressure is normal after the pump has been operated for at least 60 seconds.
 - a. For ACMP: 2700 to 3200 psi.
 - b. For ADP: 2900 to 3200 psi.
4. Position the associated Hydraulic Panel (P5) pump switch or selector OFF.
5. If the pneumatic system was pressurized, depressurize the pneumatic system.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	PUMP TEMPERATURE INDICATIONS				
29-32-01A	Left & Right Systems	N	4	2	C (M) One in each system may be inoperative provided: a) Associated pump pressure indications operate normally, and b) Associated pump operation is verified normal PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)
29-32-01B	Center System	N	4	3	C (M) One may be inoperative provided: a) Associated pump pressure indications operate normally, and b) Associated pump operation is verified normal PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)
29-32-01C	Center System	N	4	3	C One may be inoperative for an associated inoperative pump.

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-32-01A	Hydraulic System Control Panel	___ Hydraulic Pump Temperature Indication(s) INOP
29-32-01B	Hydraulic System Control Panel	___ Hydraulic Pump Temperature Indication INOP
29-32-01C	Hydraulic System Control Panel	___ Hydraulic Pump Temperature Indication INOP

(M) PROCEDURES

29-32-01A, 29-32-01B

PRIOR TO EACH DEPARTURE - Verify the associated pump is operating normally by verifying the pump pressure is normal.

- Supply electrical power on the airplane.
- For an Alternating Current Motor Pump (ACMP) temperature indication inoperative, position the associated Hydraulic Panel (P5) pump switch or selector ON.
- For an Engine Driven Pump (EDP) temperature indication inoperative:
 - Dry motor the associated engine, or start the associated engine.
 - Position the associated Hydraulic Panel (P5) PRIMARY pump switch ON
- For an Air Driven Pump (ADP) temperature indication inoperative:
 - Pressurize the pneumatic system.
 - Position the associated Hydraulic Panel (P5) DEMAND pump selector ON.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-31

5. On Hydraulic Maintenance page, confirm the associated system pressure is normal after the pump has been operated for at least 60 seconds.
 - a. For ACMP, 2700 to 3200 psi.
 - b. For EDP or ADP, 2900 to 3200 psi.
6. Position the associated pump Hydraulic Panel (P5) switch or selector off.
7. If an engine was started, shutdown the engine.
8. If the pneumatic system was pressurized, depressurize the pneumatic system.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
29-33-01	Hydraulic Fluid Quantity Indications (Flight Deck)	N	3	1 C	(O)(M) May be inoperative provided: a) Reservoir level is verified normal PRIOR TO EACH DEPARTURE (Log Book Entry Required), b) Associated system pressure indication operates normally, and c) For the center system indication inoperative, center hydraulic isolation system is deactivated. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
29-33-01	Center Display Control Panel	___ Cockpit Hydraulic Fluid Quantity Indication(s) INOP

(O) PROCEDURES

1. If the Center Hydraulic Quantity is inoperative, the EICAS advisory message RESERVE BRAKES/STRG will be displayed, because the Center Hydraulic System isolation valves are electrically disconnected.
2. Should the Center Hydraulic System subsequently fail (EICAS caution level message HYD PRESS SYS C displayed), expect the Nose Gear Steering and Alternate/Reserve Brake System to also be inoperative.

(M) PROCEDURES

Verify associated system reservoir quantity level is normal prior to each departure, and if the center quantity indication is inoperative deactivate Center Hydraulic Isolation System.

PRIOR TO EACH DEPARTURE - Verify associated reservoir quantity level is normal using one of the following:

1. Reservoir quantity gage (if operating):
 - a. Supply electrical power on the airplane.
 - b. Open the Hydraulic Ground Service Bay Access Door (198DR).
 - c. Position the handle of the reservoir fill selector valve to the associated system.
 - d. Verify that the Reservoir Quantity Gage shows in the green band.
 - e. Close the Hydraulic Ground Service Bay Access Door.
2. Hydraulic Reservoir Sight Glass:
 - a. For left or right hydraulic quantity indications inoperative, deactivate the associated engine thrust reverser for ground maintenance.
 - b. For center hydraulic quantity indication inoperative, open the landing gear doors and install safety pins.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-33

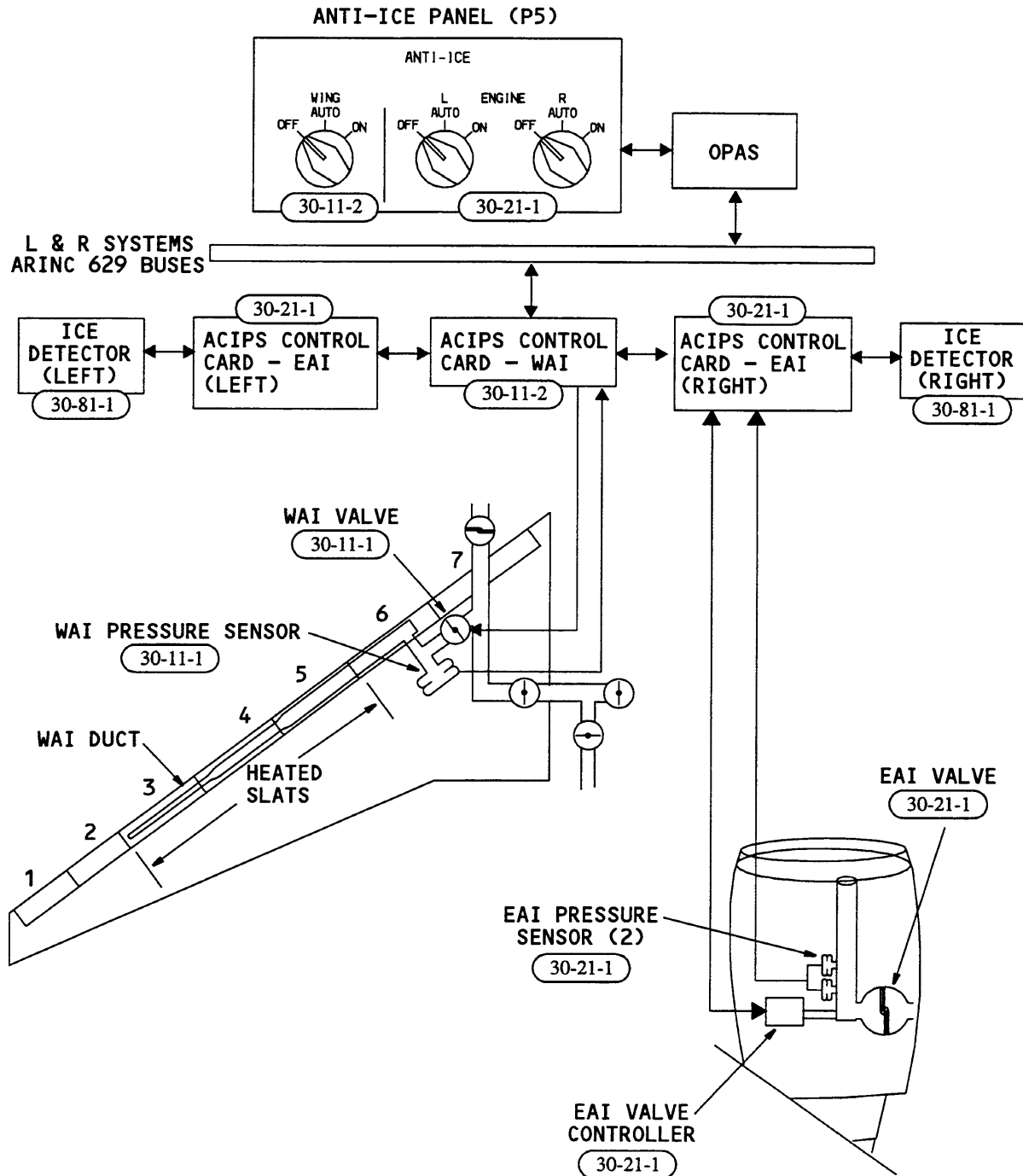
- c. Gain access to the associated reservoir:
 - 1) For left system, open the aft strut Fairing Doors (434CL and 434CR).
 - 2) For right system, open the aft strut Fairing Doors (444CL and 444CR).
 - 3) For center system, right wheel well.
 - d. Verify that the lower sight glass (refill level) is dark (red indicates fluid is below the sight glass level).
 - e. For left system close the aft strut Fairing Doors (434CL and 434CR).
 - f. For right system close the aft strut Fairing Doors (444CL and 444CR).
 - g. For center hydraulic quantity indication inoperative, remove the landing gear door safety pins and close the landing gear doors.
 - h. For left or right hydraulic quantity indications inoperative, activate the associated engine thrust reverser.
3. Deactivate center hydraulic isolation system with reserve isolation valve and nose gear isolation valve in the open positions.
- a. Open the landing gear doors and install safety pins.
 - b. Open P110 panel C1 HYD PUMP CTRL circuit breaker.
 - c. Pull and secure P310 panel NOSE GEAR ISLN VALVE circuit breaker (CB stays open for dispatch).
 - d. Gain access to the reserve isolation valve and the nose gear isolation valve (right wheel well).
 - 1) Deactivate the reserve isolation valve in the open position:
 - a) Disconnect, cap and stow electrical connector (DK29002).
 - b) Move the manual override handle to the OPEN position and lockwire.
 - 2) Deactivate the nose gear isolation valve in the open position:
 - a) Disconnect, cap and stow electrical connector (DK29003).
 - b) Move the manual override handle to the OPEN position and lockwire.
 - e. Close P110 panel C1 HYD PUMP CTRL circuit breaker.
 - f. Remove the landing gear door safety pins and close the landing gear doors.

 DELTA	B777 Minimum Equipment List	ATA 29 Hydraulic Power	R14 05/09/16 Page 29-34

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ATA 30 Contents

30-11-01	Wing Anti-Ice Systems	30-5
30-11-02	Wing Anti-Ice Control (Card and Switch)	30-6
30-11-03	Wing Anti-Ice Indications (WAI)	30-7
30-21-01A	Engine Anti-Ice Systems	30-8
30-21-02	Engine Anti-Ice Indications (EAI)	30-14
	PITOT PROBE HEATER SYSTEMS	30-15
30-31-01A	Right Pitot Heater	30-15
30-31-01B	Left Pitot Heater	30-15
30-31-01C	Center Pitot Heater	30-16
30-33-01	Total Air Temperature (TAT) Probe Heater System	30-19
30-34-01	Engine PT2/TT2 Probe Heater Systems (-200ER)	30-20
30-41-01	Flight Deck Forward Window Primary Heater Systems	30-21
30-41-02	Flight Deck Side (No. 2) Window Heater Systems	30-22
30-41-03	Flight Deck Aft (No. 3) Window Heater Systems	30-23
30-41-04A	WINDOW HEAT Switch Lights (INOP Lights)	30-24
30-41-04B	WINDOW HEAT Switch Lights (ON Lights)	30-24
	WINDSHIELD WIPERS	30-25
30-42-01A	Windshield Wipers	30-25
30-42-01B	Low Speed Functions	30-25
30-42-01C	High Speed Functions	30-25
30-42-01E	Intermittent Functions	30-25
30-71-01	Drain Mast Heaters	30-26
30-81-01	Ice Detectors	30-27



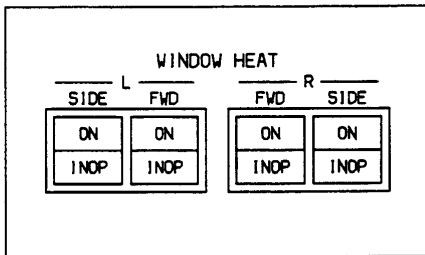
WINDOW HEAT PANEL (P5)

FWD (NO. 1) WINDOW
PRIMARY HEAT

30-41-1

SIDE (NO. 2)
WINDOW HEAT

30-41-2



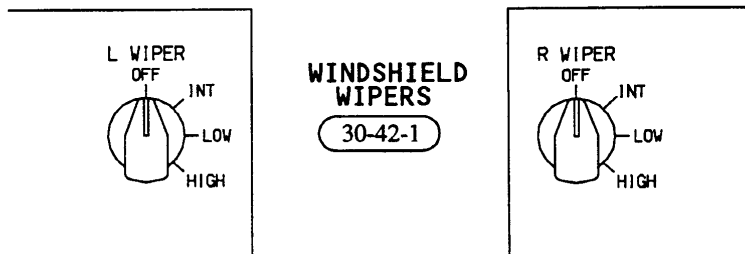
AFT (NO. 3)
WINDOW HEAT

30-41-3

WINDOW HEAT
INOP LIGHTS

30-41-4

WIPER SELECTORS (P5)



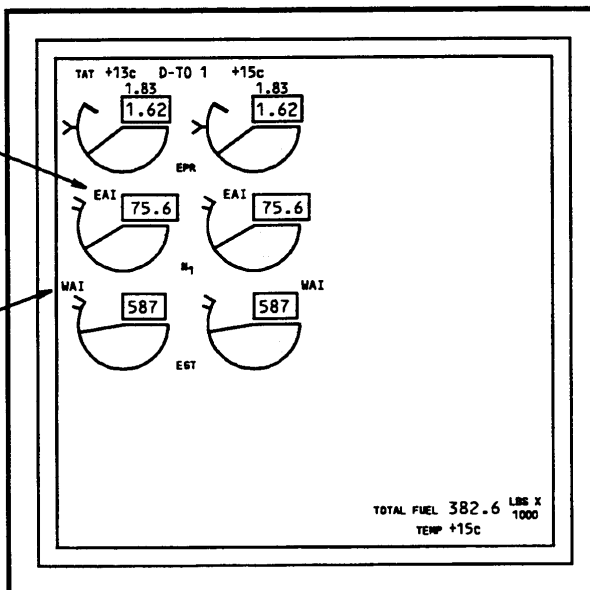
EICAS DISPLAY

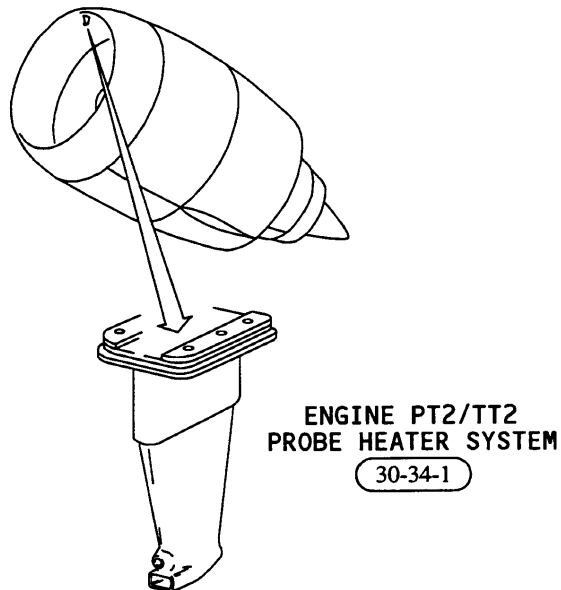
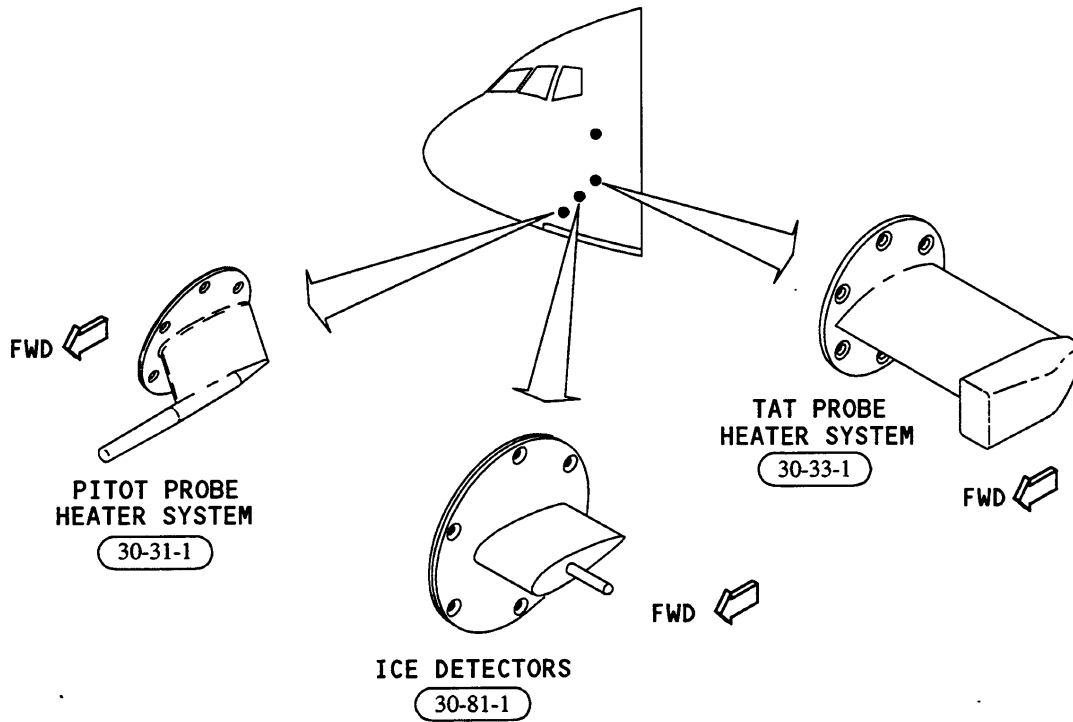
ENGINE ANTI-ICE
INDICATIONS (EAI)

30-21-2

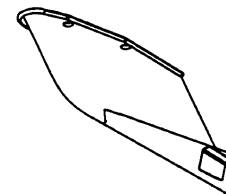
WING ANTI-ICE
INDICATIONS (WAI)

30-11-3





**LEFT WING
BODY FAIRING**



**DRAIN MAST
HEATERS
(30-71-1)**



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-11-01	Wing Anti-Ice Systems "DISP.APPR.REQ'D."	N	2	0	C (M) May be inoperative provided: a) Associated valve is locked CLOSED, b) Wing anti-ice control switch remains OFF, and c) Airplane is not operated in known or forecast icing conditions. Theater Restrictions May Apply

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-11-01	Wing / Engine Anti-Ice Control Panel	___ Wing Anti-Ice System(s) INOP

(M) PROCEDURES

Lock the inoperative Wing Anti-Ice (WAI) valve(s) or the WAI valve(s) associated with the inoperative sensor(s) in the closed position.

- Open P210 panel WAI CTRL circuit breaker.
- Deactivate the leading edge slats.
- Gain access to the appropriate WAI valve:
 - For left WAI valve, open Access Panel 521AB.
 - For right WAI valve, open Access Panel 621AB.
- Lock the WAI valve in the CLOSED position:
 - Remove the locking screw from the normal position.
 - Set the crank to the locked (CL) position.
 - Install the locking screw through the crank into the locked position. The usual running torque for the locking screw [2] is 10-15 pound-inches (1.1-1.7 newton-meters).
- Close the opened Access Panel(s).
- Activate the leading edge slats.
- Position the ANTI-ICE Panel (P5) Wing Anti-Ice selector OFF.
- Close P210 panel WAI CTRL circuit breaker.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-11-02	Wing Anti-Ice Control (Card and Switch) "DISP.APPR.REQ'D."	N	1	0	C (M) May be inoperative provided: a) Both wing anti-ice valves are locked CLOSED, b) Wing anti-ice control switch remains OFF, and c) Airplane is not operated in known or forecast icing conditions.

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-11-02	Wing / Engine Anti-Ice Control Panel	Wing Anti-Ice Control INOP

(M) PROCEDURES

Lock both Wing Anti-Ice (WAI) valves in the closed position.

- Open P210 panel WAI CTRL circuit breaker.
- Deactivate the leading edge slats.
- Gain access to both WAI valves:
 - For left WAI valve, open Access Panel 521AB.
 - For right WAI valve, open Access Panel 621AB.
- Lock the WAI valves in the closed position:
 - Remove the locking screw from the normal position.
 - Set the crank to the locked (CL) position.
 - Install the locking screw through the crank into the locked position. The usual running torque for the locking screw [2] is 10-15 pound-inches (1.1-1.7 newton-meters).
- Close Access Panels 521AB and 621AB.
- Activate the leading edge slats.
- Position the ANTI-ICE Panel (P5) Wing Anti-Ice selector OFF.
- Close P210 panel WAI CTRL circuit breaker.

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-11-03	Wing Anti-Ice Indications (WAI)	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-11-03	Below EICAS Display	___ Wing Anti-Ice Indication(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-21-01A	Engine Anti-Ice Systems "DISP.APPR.REQ'D."	N	2	1	C (M) May be inoperative provided: a) Valve is locked CLOSED, b) Associated engine anti-ice control switch remains OFF, c) Airplane is not operated in known or forecast icing conditions, and d) Flight remains within 120 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized NOTE: If an EAI card is inoperative, the EICAS alerting message ANTI-ICE ENG L or R will be displayed.
30-21-01B	Engine Anti-Ice Systems (-200ER) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) For operations at ambient temperature 100 degrees F (38 degrees C) or below, one may be inoperative provided: a) Valve is electrically disconnected and verified open PRIOR TO EACH DEPARTURE (Log Book Entry Required), b) Engine fan case overheat detection system operates normally, c) Associated EAI pressure sensor system operates normally, d) Associated EAI card operates normally, and e) Appropriate performance adjustments are applied. Repetitive Check Required (Yellow Placard)
30-21-01C	Engine Anti-Ice Systems (-200ER) "DISP.APPR.REQ'D."	N	2	1	A (O)(M) For operations at ambient temperature above 100 degrees F (38 degrees C), one may be inoperative provided: a) Valve is electrically disconnected and verified open PRIOR TO EACH DEPARTURE (Log Book Entry Required), b) Engine fan case overheat detection system operates normally, c) Associated EAI pressure sensor system operates normally, d) Associated EAI card operates normally, e) Appropriate performance adjustments are applied, and f) Repairs are made within three flight days. Repetitive Check Required (Yellow Placard)

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	Engine Anti-Ice Systems (Continued)				
30-21-01D	Engine Anti-Ice Systems (-200LR) "DISP.APPR.REQ'D."	N	2	1	C
					(O)(M) For operations at ambient temperature 100 degrees F (38 degrees C) or below, one may be inoperative provided: a) Valve is electrically disconnected and verified open PRIOR TO EACH DEPARTURE (Log Book Entry Required), b) Engine fan case overheat detection system operates normally, c) Associated EAI pressure sensor system operates normally, d) Associated EAI card operates normally, e) Turbine case cooling air flow systems operate normally, and f) Appropriate performance adjustments are applied. Repetitive Check Required (Yellow Placard)
30-21-01E	Engine Anti-Ice Systems (-200LR) "DISP.APPR.REQ'D."	N	2	1	A
					(O)(M) For operations at ambient temperature above 100 degrees F (38 degrees C), one may be inoperative provided: a) Valve is electrically disconnected and verified open PRIOR TO EACH DEPARTURE (Log Book Entry Required), b) Engine fan case overheat detection system operates normally, c) Associated EAI pressure sensor system operates normally, d) Associated EAI card operates normally, e) Turbine case cooling air flow systems operate normally, f) Appropriate performance adjustments are applied, and g) Repairs are made within three flight days. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-21-01A	Wing / Engine Anti-Ice Control Panel	___ Engine Anti-Ice System INOP
30-21-01B	Wing / Engine Anti-Ice Control Panel	___ Engine Anti-Ice System INOP
30-21-01C	Wing / Engine Anti-Ice Control Panel	___ Engine Anti-Ice System INOP
30-21-01D	Wing / Engine Anti-Ice Control Panel	___ Engine Anti-Ice System INOP
30-21-01E	Wing / Engine Anti-Ice Control Panel	___ Engine Anti-Ice System INOP

CONTINUED NEXT PAGE

(O) PROCEDURES

30-21-01B, 30-21-01C, 30-21-01D, 30-21-01E

PRIOR TO EACH DEPARTURE:

1. Verify the EAI valve is open when the associated engine is running.
 - a. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
 - b. After the associated engine has been started, confirm the associated EAI indication (green EAI) is displayed above the N1 indication.

NOTE 1: If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.

NOTE 2: On the Air synoptic, the EAI valve will indicate failed open because the EAI selector is OFF and the green flow bar will be displayed.

2. Position associated ENGINE ANTI-ICE selector ON.

NOTE 1: When an EAI selector is positioned to ON and the temperature is greater than 10 degrees C, the ANTI-ICE ON advisory message will be displayed. Do not accomplish the ANTI-ICE ON Non-Normal Checklist.

NOTE 2: Inflight, the ENG IDLE DISAGREE advisory message may be displayed when engine thrust is reduced to idle.

3. If the ANTI-ICE LEAK ENG L or R caution message is subsequently displayed, do not accomplish the one minute delay (two minute for -200LR) associated with the ANTI-ICE LEAK ENG L or R Non-Normal Checklist. Complete the remainder of the checklist as soon as practical.

30-21-01B 30-21-01C	ENGINE ANTI-ICE SYSTEM
EFFECTIVITY FLIGHT PLANNING REQUIREMENTS NOTES	-200ER with -895 Engines 1. Reduce ENROUTE LIMIT WT by 23,000 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%. Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 21,700 lbs. 2. Reduce T/O CLIMB LIMIT by 21,700 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 21,700 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 21,700 lbs.

CONTINUED NEXT PAGE

30-21-01B 30-21-01C	ENGINE ANTI-ICE SYSTEM
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 21,600 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 26,500 lbs. 2. Reduce T/O CLIMB LIMIT by 26,500 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 26,500 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 26,500 lbs.

30-21-01D 30-21-01E	ENGINE ANTI-ICE SYSTEM
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 12,100 lbs. 2. Increase BLOCK FUEL by 1.0%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.8%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 13,300 lbs. 2. Reduce T/O CLIMB LIMIT by 13,300 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 13,300 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 13,300 lbs.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-12

(M) PROCEDURES

30-21-01A

1. Deactivate the associated EAI valve controller:
 - a. For the right EAI valve, open P210 panel EAI CTRL R circuit breaker.
 - b. For the left EAI valve, open P310 panel EAI CTRL L circuit breaker.
2. (-200LR only) Deactivate the leading edge slats in the retracted position.
3. Deactivate the associated thrust reverser for ground maintenance.
4. For locking the EAI valve in the CLOSED position:
 - a. Remove the locking screw from the normal position.
 - b. Set the crank to the locked (closed) position.
 - c. Install the locking screw through the crank into the locked position.
 - d. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
5. Activate the thrust reverser.
6. (-200LR only) Activate the leading edge slats.
7. Activate the associated EAI valve controller by closing the associated circuit breaker.
8. Position the associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.

30-21-01B, 30-21-01C

For EAI VALVE L or R status message displayed, deactivate the EAI valve by disconnecting the electrical connector and verify EAI valve is open when the associated engine is running (AMM 30-00-00/901).

1. Deactivate the associated EAI valve controller:
 - a. For the right EAI valve, open P210 panel EAI CTRL R circuit breaker.
 - b. For the left EAI valve, open P310 panel EAI CTRL L circuit breaker.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Deactivate the EAI valve in the open position.
 - a. Disconnect, cap and stow the torque motor electrical connector DM30211 or DM30211A from the EAI valve controller, M30211, on the associated engine.
 - b. Install a protective cover over the electrical connector on the valve controller.
4. Activate the thrust reverser.
5. Activate the associated EAI valve controller by closing the associated circuit breaker.
6. Verify the EAI valve is open when the associated engine is running.
 - a. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
 - b. Start the associated engine.
 - c. Confirm the EAI indication (green EAI) is displayed above the N1 indication on the EICAS display for the associated engine (indicates the EAI valve is open).

NOTE: If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.
 - d. Shutdown the associated engine (unless verification was performed by flight crew at dispatch).

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-13

30-21-01D, 30-21-01E

For EAI VALVE L or R status message displayed, deactivate the EAI valve by disconnecting the electrical connector and verify EAI valve is open when the associated engine is running (AMM 30-00-00/901).

1. Deactivate the associated EAI valve controller:
 - a. For the right EAI valve, open P210 panel EAI CTRL R circuit breaker.
 - b. For the left EAI valve, open P310 panel EAI CTRL L circuit breaker.
2. Deactivate the leading edge slats in the retracted position (AMM 27-81-00/201).
3. Deactivate the associated thrust reverser for ground maintenance.
4. Deactivate the EAI valve in the open position.
 - a. Disconnect, cap and stow the torque motor electrical connector DM30211 or DM30211A from the EAI valve controller, M30211, on the associated engine.
 - b. Install a protective cover over the electrical connector on the valve controller.
 - c. Visually inspect the area near the Cowl Thermal Anti-Ice duct for signs of leaks and the fan cowl in general for flammable fluid leaks. Dispatch is not allowed if any of the duct clamps or supports are not secure or any air leaks from the EAI duct are present, or if significant flammable fluid leakage is present.
5. Activate the thrust reverser.
6. Activate the leading edge slats (AMM 27-81-00/201).
7. Activate the associated EAI valve controller by closing the associated circuit breaker.
8. Verify the EAI valve is open when the associated engine is running.
 - a. Position associated ANTI-ICE Panel (P5) Engine Anti-Ice selector OFF.
 - b. Start the associated engine.
 - c. Confirm the EAI indication (green EAI) is displayed above the N1 indication on the EICAS display for the associated engine (indicates the EAI valve is open).

NOTE: If the EAI indication is not displayed, the valve may be stuck closed and a thrust setting slightly above minimum idle may open the valve.
 - d. Shutdown the associated engine (unless verification was performed by flight crew at dispatch).

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-14

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
30-21-02	Engine Anti-Ice Indications (EAI)	Y	2	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-21-02	Below EICAS Display	___ Engine Anti-Ice Indication(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PITOT PROBE HEATER SYSTEMS					
30-31-01A	Right Pitot Heater "DISP.APPR.REQ'D."	N	1	0	B
(O)(M) May be inoperative provided: a) Right pitot air data module is deactivated, b) Left and center pitot air data modules operate normally, c) Left and center pitot probe heater systems operate normally, d) Left static air data module operates normally, e) Standby airspeed indication operates normally, f) Right AIR DATA / ATT instrument source switch operates normally, g) Approach minimums do not require its use, h) SAARU data is verified to be available to the right PFD PRIOR TO EACH DEPARTURE (Log Book Entry Required), and i) Left and center pitot probes are inspected PRIOR TO EACH DEPARTURE (Log Book Entry Required). <u>CAT III</u> Not Authorized NOTE: If Left or Center Pitot Heater is also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)					
30-31-01B	Left Pitot Heater "DISP.APPR.REQ'D."	N	1	0	B
(O)(M) May be inoperative provided: a) Left pitot air data module is deactivated, b) Right and center pitot air data modules operate normally, c) Right and center pitot probe heater systems operate normally, d) Right static air data module operates normally, e) Standby airspeed indication operates normally, f) Left AIR DATA / ATT instrument source switch operates normally, g) Approach minimums do not require its use, h) SAARU data is verified to be available to the left PFD PRIOR TO EACH DEPARTURE (Log Book Entry Required), and i) Right and center pitot probes are inspected PRIOR TO EACH DEPARTURE (Log Book Entry Required). <u>CAT III</u> Not Authorized NOTE: If Right or Center Pitot Heater is also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)					

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PITOT PROBE HEATER SYSTEMS (CONTINUED)					
30-31-01C	Center Pitot Heater "DISP.APPR.REQ'D."	N	1	0	B
					(O)(M) May be inoperative provided: a) Left and right pitot air data modules operate normally, b) Left and right pitot probe heater systems operate normally, c) Standby airspeed indication operates normally, d) Approach minimums do not require its use, e) Airplane is not operated in known or forecast icing conditions or visible moisture, f) Left and right pitot probes are inspected PRIOR TO EACH DEPARTURE (Log Book Entry Required), and g) Flight remains within 120 minutes of landing at suitable airport. <u>CAT III</u> Not Authorized NOTE: If Right or Left Pitot Heater is also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-31-01A	Center Display Control Panel	Right Pitot Heater INOP
30-31-01B	Center Display Control Panel	Left Pitot Heater INOP
30-31-01C	Center Display Control Panel	Center Pitot Heater INOP

(O) PROCEDURES

30-31-01A, 30-31-01B, 30-31-01C

- When a pitot heat is inoperative or an ADM is deactivated, the autoland system is not fail-operational and the advisory message NO LAND 3 will be displayed.

NOTE: If the right Pitot ADM is deactivated and the Captain selects ALTN AIR DATA / ATT, the Captain's PFD airspeed will be flagged. If the left Pitot ADM is deactivated and the First Officer selects ALTN AIR DATA / ATT, the First Officer's PFD airspeed will be flagged. These effects are normal for these dispatch conditions.

CONTINUED NEXT PAGE

- An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid (if the center Pitot Heat is inoperative, data from the center Pitot ADM is not used in the voted airspeed determination). Lack of valid voted airspeed will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs. Additionally, the left or right PFD airspeed will be flagged if dispatch was made with the left or right pitot ADM deactivated respectively.

NOTE: If the left or right PFD airspeed is flagged, selection of ALTN ATT / AIR DATA will display the opposite PFD airspeed. This condition may make it appear that the airspeed on the PFDs are correct since they agree. In fact, they are from the same source which may be in error due to probe damage or plugging.

- If the EICAS alerting message NAV AIR DATA SYS is displayed, airspeed must be crosschecked on both PFDs and the Standby Airspeed Indicator, and the correct airspeed identified and verified with attitude and thrust setting. If abnormal airspeed is recognized, immediately return the airplane to the target attitude and thrust setting for the flight regime. Identify the correct airspeed or if continued flight is necessary without valid airspeed, consult the Operations Manual for correct attitude and thrust settings.
- If voted air data is lost due to a subsequent failure such as a birdstrike, or damaged or plugged probe, the following display effects with regard to airspeed (A/S) are likely:

Pitot Heat Inop / Pitot ADM Deact. At Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Left	Center	Flag (ADM deact.)	In Error (plugged)	Correct
Left	Right	Flag (ADM deact.)	Correct	In Error (plugged)
Center*	Left	In Error (plugged)	Unheated*	Correct
Center*	Right	Correct	Unheated*	In Error (plugged)
Right	Left	In Error (plugged)	Correct	Flag (ADM deact.)
Right	Center	Correct	In Error (plugged)	Flag (ADM deact.)

* Restricted to non-icing conditions

(M) PROCEDURES

NOTE: Deactivation of the left or right Pitot ADM associated with the inoperative left or right Pitot Heat will result in the following effects:

- The associated PITOT ADM L or R status message will be displayed. The airplane must be dispatched using [MEL item 34-21-04](#). However, this action is simplified because the MEL provisos for item 34-21-04 are the same as this item, except for deactivating the ADM.
- The associated AOA VANE L or R status message will be displayed, because the associated Pitot ADM monitors and reports AOA vane heat status, and cannot do so when unpowered. The airplane must also be dispatched using [MEL item 34-21-06](#).
- The loss of AOA vane heat resulting from a deactivated L or R Pitot ADM may result in the WINDSHEAR REAC status message and WINDSHEAR SYS alert message being displayed. The airplane must also be dispatched using [MEL item 34-46-01E or 34-46-01F](#).
- The HEAT PITOT L or R advisory and status messages will blank 30-60 seconds after the Pitot ADM circuit breaker is pulled. This condition occurs because the Pitot ADM monitors and reports pitot heat status, and cannot do so when unpowered. Additionally, the CMC maintenance messages will also blank.
- The Satcom EICAS messages SATCOM SYSTEM and SATCOM HI GAIN may be displayed for dispatch with a Left Pitot ADM deactivated. The airplane must also be dispatched using [MEL item 23-15-01](#).

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-18

30-31-01A

1. Gain access to the right Power Supply Assembly (PSA) in the Forward Cargo Door, Equipment Rack E5-2.
2. Pull and secure the Pitot ADM (C7) circuit breaker on the front panel of the right PSA.
3. **PRIOR TO EACH DEPARTURE** - Visually examine the left and center Pitot Probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe - Inspection /Check per the AMM.
4. Verify that SAARU data is available to the right Primary Flight Display (PFD). With the airplane powered the Standby Attitude indicator should display sky / ground (blue over brown) shading.
 - a. Position the right AIR DATA / ATT switch to ALTN (non-normal position - switch in).
 - b. Verify that the Attitude Indication on the right PFD displays the sky/ground (blue over brown) shading and pitch scale.
 - c. Position the right AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

30-31-01B

1. Gain access to the left Power Supply Assembly (PSA) in the Main Equipment Center, Electronic Equipment Rack E1-6.
2. Pull and secure the Pitot ADM (C7) circuit breaker on the front panel of the left PSA.
3. **PRIOR TO EACH DEPARTURE** - Visually examine the right and center Pitot Probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe - Inspection /Check per the AMM.
4. Verify that SAARU data is available to the left Primary Flight Display (PFD). With the airplane powered the Standby Attitude indicator should display sky / ground (blue over brown) shading.
 - a. Position the left AIR DATA / ATT switch to ALTN (non-normal position - switch in).
 - b. Verify that the Attitude Indication on the left PFD displays the sky/ground (blue over brown) shading and pitch scale.
 - c. Position the left AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

30-31-01C

PRIOR TO EACH DEPARTURE - Visually examine the left and right Pitot Probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe - Inspection /Check per the AMM.

 DELTA	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-19

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-33-01	Total Air Temperature (TAT) Probe Heater System "DISP.APPR.REQ'D."	Y	1	0	C May be inoperative provided: a) Airplane is not operated in known or forecast icing conditions, and b) Flight remains within 120 minutes of landing at a suitable airport.

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-33-01	Center Display Control Panel	TAT Probe Heater INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-34-01	Engine PT2/TT2 Probe Heater Systems (-200ER) "DISP.APPR.REQ'D."	Y	2	0	C (O) May be inoperative provided: a) Both engines are operated in the alternate (ALTN) mode, b) N2 indication on affected engine operates normally, and c) Appropriate performance adjustments are applied.

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-34-01	Center Display Control Panel	___ Engine PT2/TT2 Probe Heater(s) INOP

(O) PROCEDURES

NOTE 1: Thrust rating protection is not provided in alternate mode (for manual thrust settings) and maximum rated thrust is reached at a thrust lever position less than full forward. Derated and/or reduced thrust takeoffs, and takeoff thrust bumps are not allowed.

NOTE 2: Use of autothrottles when dispatching with EECs in alternate mode makes it easier to maintain thrust at the reference limit.

1. Position both EEC Mode switches to ALTN.
2. For THRUST ASYM COMP advisory and status messages displayed, position the THRUST ASYM COMP switch to OFF then to AUTO to restore Thrust Asymmetry Compensation functionality.
3. Prior to autothrottle engagement for takeoff, advance thrust levers to approximately 50% N1.

30-34-01	ENGINE PT2/TT2 PROBE HEATER SYSTEMS
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	Reduce ENROUTE LIMIT WT by 55,300 lbs.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance weight corrections have been applied. Refer to ODM – Abnormal section for N1 settings and V-speed corrections.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF Reduce RATOW by 50,800 lbs. Reduce T/O CLIMB LIMIT by 51,400 lbs. LANDING Reduce LANDING CLIMB LIMIT WT by 58,000 lbs. OTHER CORRECTIONS Refer to ODM – Abnormal section for N1 settings and V-speed corrections.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-41-01	Flight Deck Forward Window Primary Heater Systems "DISP.APPR.REQ'D."	Y	2	1 C	(O) May be inoperative provided: a) Associated window backup heater operates normally, b) Both left and right side (No. 2) window heaters operate normally, c) Airplane is not operated in known or forecast icing conditions, d) Associated switch remains OFF, and e) Flight remains within 120 minutes of landing at a suitable airport.

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-41-01	Window Heat Control Panel	___ Forward Window Primary Heater System INOP

(O) PROCEDURES

- Backup heater is operating normally if EICAS status message WINDOW HEAT BACKUP L/R is not displayed.
- If cracks are observed in the associated window notify maintenance to inspect the window per AMM 56-00-00/901.
- If crack exists and is confirmed to be only in the outer ply, limit airspeed to 280 KIAS or less when below 10,000 feet MSL.

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-22

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-41-02	Flight Deck Side (No. 2) Window Heater Systems	Y	2	1 C	One may be inoperative provided: a) Both forward window primary heaters operate normally, and b) Associated switch remains OFF.

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-41-02	Window Heat Control Panel	No. 2 Side Window Heater System INOP

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-23

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-41-03	Flight Deck Aft (No. 3) Window Heater Systems	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-41-03	Window Heat Control Panel	___ No. 3 Aft Window Heater System(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
30-41-04A	WINDOW HEAT Switch Lights (INOP Lights)	Y	4	0	C	
30-41-04B	WINDOW HEAT Switch Lights (ON Lights)	Y	4	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-41-04A	Window Heat Control Panel	___ WINDOW HEAT Switch Lights INOP Light(s) INOP
30-41-04B	Window Heat Control Panel	___ WINDOW HEAT Switch Lights ON Light(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
WINDSHIELD WIPERS						
30-42-01A	Windshield Wipers “DISP.APPR.REQ’D.”	Y	2	0	C	May be inoperative provided: a) The airplane is not operated in known or forecast precipitation within 5 nautical miles of the airport of departure or intended landing, and b) Approach minimums do not require their use. <u>CAT II/III</u> Not Authorized
30-42-01B	Low Speed Functions	Y	2	0	C	May be inoperative provided associated high speed function operates normally.
30-42-01C	High Speed Functions “DISP.APPR.REQ’D.”	Y	2	1	C	May be inoperative provided: a) Associated low speed function operates normally, and b) Approach minimums do not require its use. <u>CAT II/III</u> Not Authorized
30-42-01D	High Speed Functions “DISP.APPR.REQ’D.”	Y	2	0	C	May be inoperative provided: a) Both low speed function operates normally, b) Approach minimums do not require their use, and c) Airplane is not operated known or forecast precipitation of moderate or greater intensity within 5 statute miles of the airport of departure or intended landing. <u>CAT II/III</u> Not Authorized
30-42-01E	Intermittent Functions	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-42-01A	Associated Winshield Wiper Switch(es)	___ Windshield Wiper(s) INOP
30-42-01B	Associated Winshield Wiper Switch	___ Windshield Wiper Low Speed Function INOP
30-42-01C	Associated Winshield Wiper Switch	___ Windshield Wiper High Speed Function INOP
30-42-01D	Associated Winshield Wiper Switch	Both Windshield Wiper High Speed Functions INOP
30-42-01E	Associated Winshield Wiper Switch(es)	___ Windshield Wiper(s) Intermittent Function INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			N	2	0	REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS					
30-71-01	Drain Mast Heaters “DISP.APPR.REQ’D.”						
					C	(M) May be inoperative provided: a) Associated galley service and lavatory sinks are not used, and b) Associated galley and lavatory sink water supply shutoff valves are secured CLOSED.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-71-01	Logbook	___ Drain Mast Heater(s) INOP

(M) PROCEDURES

Shut off the water supplies associated with the inoperative drain mast.

1. For the forward drain mast heater inoperative:
 - a. Close each individual water supply shut off valve at each galley, lavatory and drinking fountain (if installed) located forward of door 3.
2. For the aft drain mast heater inoperative:
 - a. Close each individual water supply shut off valve at each galley, lavatory and drinking fountain (if installed) located aft of door 3.

	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-27

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
30-81-01	Ice Detectors	Y	2	0	C (O) May be inoperative provided engine and wing anti-ice systems are operated manually.

MEL ITEM	TAB LOCATION	PLACARD TEXT
30-81-01	Wing / Engine Anti-Ice Control Panel	___ Ice Detector(s) INOP

(O) PROCEDURES

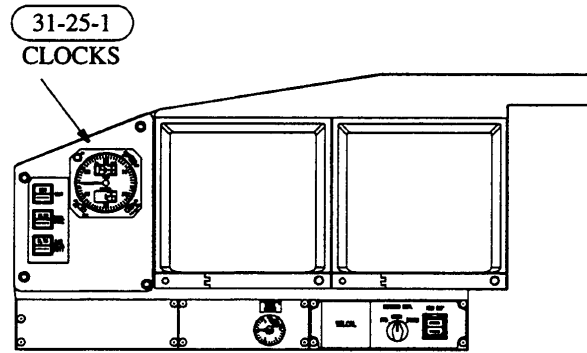
If one or both ice detectors are inoperative, operate the Wing and Engine Anti-Ice systems manually.

 DELTA	B777 Minimum Equipment List	ATA 30 Ice & Rain Protection	R14 05/09/16 Page 30-28

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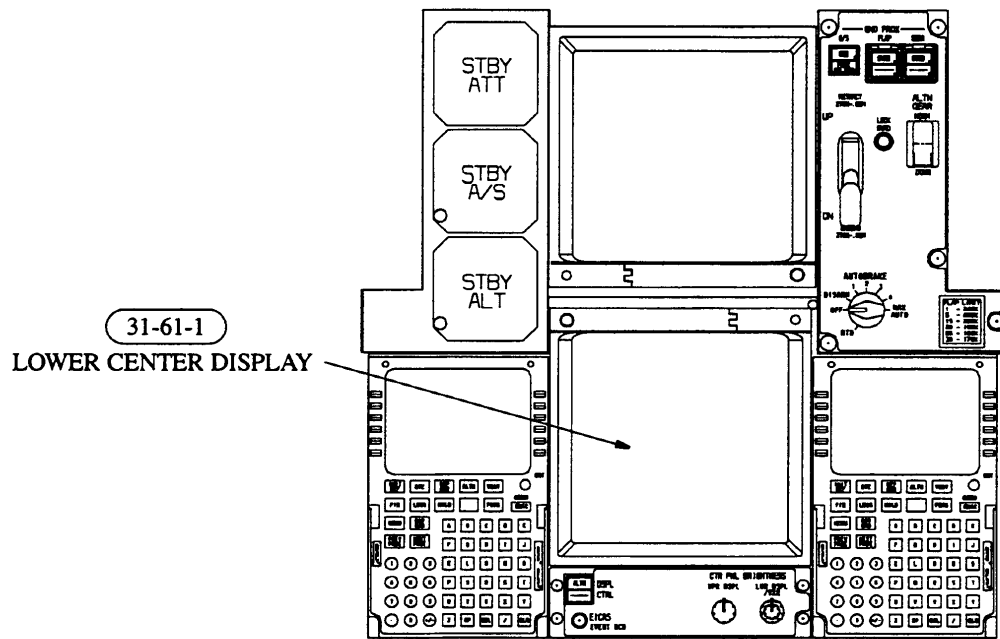
ATA 31 Contents

31-09-01A	Systems Cardfile ARINC Signal Gateway (ASG) Cards.....	31-4
31-09-01B	Left Systems Cardfile ASG Cards.....	31-4
31-09-01C	Right Systems Cardfile ASG Cards	31-4
	SYSTEMS CARDFILE POWER SUPPLIES	31-6
31-09-02A	Left Systems Cardfile (LSCF) Power Supplies	31-6
31-09-02B	Right Systems Cardfile (RSCF) Power Supplies	31-6
31-25-01	Clocks.....	31-7
31-25-02	Clock Switches	31-8
31-31-01A	Flight Data Recorder (FDR) System	31-9
31-31-01B	DFDR Recording Parameters Required By 14 CFR.....	31-9
31-31-01C	DFDR Recording Parameters Not Required By 14 CFR	31-9
31-33-01A	Airborne Printer (Flight Deck).....	31-10
31-33-01B	Miscellaneous Features	31-10
31-35-01	Quick Access Recorder.....	31-11
31-35-02	Airplane Condition Monitoring Function (ACMF)	31-12
31-41-03	AIMS-II Cabinet Bus (-200LR)	31-13
31-51-01	Master Warning Lights (Glareshield).....	31-14
31-51-02	Master Caution Lights (Glareshield).....	31-15
31-51-03	Aural Warning Speaker Systems	31-16
31-51-04A	Warning Electronics System (WES) Channels	31-17
31-51-05A	Warning Electronic System (WES) Autopilot Disconnect Warning Function	31-18
31-51-05B	WES Autopilot Interfaces	31-18
31-61-01	Display Units (DU).....	31-19
31-61-02A	Cursor Control Devices (CCD).....	31-20
31-61-02C	Cursor Control Devices (Cursor Location Lights)	31-20
31-61-02D	Cursor Control Devices (Cursor Location Switch Lights).....	31-20
31-61-03	Remote Light Sensor (RLS) System	31-21
31-61-04A	Display Select Panel (DSP)	31-22
31-61-04B	Display Select Panel (Multifunction Display Lights)	31-22
31-61-04C	Display Select Panel (Illuminated Switch Lights)	31-22
31-61-05A	EICAS Status Messages	31-23
31-61-06	Inboard Display Selector Positions	31-24
31-61-07A	Electronic Checklist (ECL) System	31-26
31-61-07B	ECL Closed Loop Switch Indications	31-26
31-61-08A	EFIS Control Panels.....	31-27
31-61-08B	EFIS Control Panels (Map Switch Lights).....	31-27
	INSTRUMENT SOURCE SWITCHES	31-28
31-61-09A	NAV and DSPL CTRL Switches.....	31-28
31-61-09B	AIR DATA / ATT Switches	31-28
31-61-11A	Heading Reference (HDG REF) Switch (TRUE Function).....	31-29
31-61-11B	Heading Reference Switch Lights (TRUE Light).....	31-29
31-61-11C	Heading Reference Switch Lights (NORM Light).....	31-29

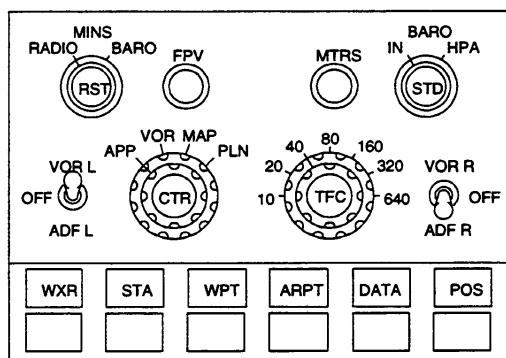


CAPTAINS MAIN
INSTRUMENT PANEL (P1)

CENTER INSTRUMENT PANEL (P2)

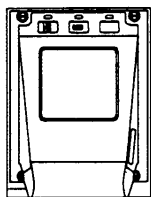


FORWARD ELECTRONICS PANEL (P9)



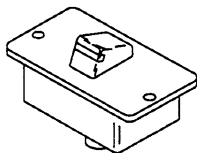
EFIS CONTROL PANEL

31-61-8



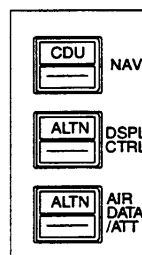
CURSOR CONTROL
DEVICE

31-61-2



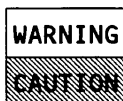
REMOTE LIGHT SENSOR

31-61-3



INSTRUMENT SOURCE
SELECT PANEL

31-61-9



31-51-2

MASTER CAUTION
LIGHT

31-51-1

MASTER WARNING
LIGHT

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
31-09-01A	Systems Cardfile ARINC Signal Gateway (ASG) Cards	N	4	2	C	(O) Two ASG cards and / or the associated ARINC 629 couplers may be inoperative provided: a) One inoperative ASG card and / or associated ARINC 629 coupler is in the left systems cardfile, b) One inoperative ASG card and / or associated ARINC 629 coupler is in the right systems cardfile, c) Left and right hydraulic demand pump ON and OFF selectors operate normally, d) Left and right hydraulic demand pump selectors are ON for takeoff and landing, and e) Center system hydraulic demand pump C1 or C2 is ON for takeoff and landing.
31-09-01B	Left Systems Cardfile ASG Cards	N	2	1	C	(O) One ASG card and / or the associated ARINC 629 coupler may be inoperative in the left systems cardfile provided: a) Left hydraulic demand pump ON and OFF selector operates normally, b) Left hydraulic demand pump selector is ON for takeoff and landing, and c) Both right systems cardfile ASG cards operate normally.
31-09-01C	Right Systems Cardfile ASG Cards	N	2	1	C	(O) One ASG card and / or the associated ARINC 629 coupler may be inoperative in the right systems cardfile provided: a) Right hydraulic demand pump ON and OFF selector operates normally, b) Right hydraulic demand pump selector is ON for takeoff and landing, and c) Both left systems cardfile ASG cards operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-09-01A	Center Display Control Panel	___ Systems Cardfile ARINC Signal Gateway (ASG) Card(s) INOP
31-09-01B	Center Display Control Panel	Left Systems Cardfile ASG Card __ INOP
31-09-01C	Center Display Control Panel	Right Systems Cardfile ASG Card __ INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-5

(O) PROCEDURES

31-09-01A

NOTE 1: Do **not** position center system Demand pump selector to ON before engine start.

NOTE 2: The EICAS alerting message ENG IDLE DISAGREE may be displayed due to an inoperative ASG card. Additionally, when LSCF ASG CARD L and RSCF ASG CARD R status message are displayed, both engines will operate at approach idle in the air whenever idle thrust is selected.

1. Position Hydraulic Panel (P5) DEMAND L and R ELEC selectors ON for takeoff and landing.
2. Position Hydraulic Panel (P5) DEMAND AIR C1 or C2 selector ON for takeoff and landing.

31-09-01B

NOTE: For LSCF ASG CARD L status message displayed, the ENG IDLE DISAGREE advisory message may be displayed.

1. Position Hydraulic Panel (P5) DEMAND L ELEC selector ON for takeoff and landing.

31-09-01C

NOTE: For RSCF ASG CARD R status message displayed, the ENG IDLE DISAGREE advisory message may be displayed.

1. Position Hydraulic Panel (P5) DEMAND R ELEC selector ON for takeoff and landing.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	SYSTEMS CARDFILE POWER SUPPLIES				
31-09-02A	Left Systems Cardfile (LSCF) Power Supplies	N	2	1	C (O)(M) May be inoperative deactivated.
31-09-02B	Right Systems Cardfile (RSCF) Power Supplies	N	2	1	C (M) Power supply 2 may be inoperative deactivated.
31-09-02C	Right Systems Cardfile (RSCF) Power Supplies	N	2	1	C (M) Power supply 1 may be inoperative deactivated provided left air / ground system operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-09-02A	Center Display Control Panel	Left Systems Cardfile Power Supply __ INOP
31-09-02B	Center Display Control Panel	Right Systems Cardfile Power Supply __ INOP
31-09-02C	Center Display Control Panel	Right Systems Cardfile Power Supply __ INOP

(O) PROCEDURES

31-09-02A

When the LSCF power supply 2 is inoperative, do not turn the Battery switch OFF until the APU has spooled down. After initiating normal APU shutdown wait two minutes before switching the Battery switch OFF.

(M) PROCEDURES

31-09-02A, 31-09-02B, 31-09-02C

Pull and secure the circuit breaker associated with the inoperative power supply:

Status message	Panel	Circuit Breaker	Bus
LSCF PWR SUPPLY 1	P310	LSCF PS 1	Hot Battery Bus
LSCF PWR SUPPLY 2	P310	LSCF PS 2	Battery Bus Section II
RSCF PWR SUPPLY 1	P310	RSCF PS 1	Hot Battery Bus
RSCF PWR SUPPLY 2	P210	RSCF PS 2	28V DC Right Main Bus

NOTE: The power supply preregulator cards are interchangeable and the linear monitor cards are interchangeable.

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-25-01	Clocks	Y	2	1 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-25-01	Affected Clock	___ Clock INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
31-25-02	Clock Switches	Y	2	1	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-25-02	Affected Clock Switch	___ Clock Switch INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-31-01A	Flight Data Recorder (FDR) System "Contact MCC"	Y	1	0	A May be inoperative provided: a) Cockpit Voice Recorder (CVR) operates normally, b) Airplane may not depart from ATL, JFK, or LAX unless: 1. 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 but shall not continue beyond ATL, JFK or LAX where repair must be accomplished prior to dispatch, d) It is required that MCC initiate a Corrective Action Required (CAR) for next designated airport (ATL, JFK or LAX), and e) Repairs are made within three flight days.
31-31-01B	DFDR Recording Parameters Required By 14 CFR "Contact MCC"	N	-	0	A May be inoperative provided: a) Cockpit Voice Recorder (CVR) operates normally, and b) Repairs are made within 20 calendar days. NOTE: Refer to TOPP 40-20-40 for a listing of DFDR parameters required by 14 CFR.
31-31-01C	DFDR Recording Parameters Not Required By 14 CFR "Contact MCC"	N	-	0	A May be inoperative provided repairs are made prior to the completion of the next heavy maintenance visit (PSV or higher). NOTE: Refer to TOPP 40-20-40 for a listing of DFDR parameters required by 14 CFR.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-31-01A	Center Display Control Panel	Flight Data Recorder INOP
31-31-01B	Center Display Control Panel	___ DFDR Recording Parameters Required By FAR INOP
31-31-01C	Center Display Control Panel	___ DFDR Recording Parameters Not Required By FAR INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-33-01A	Airborne Printer (Flight Deck)	Y	1	0	C (O) May be inoperative provided: a) If the Flight Deck printer is not functioning, the pilots should obtain the hard copy WDR from the ACS agent prior to closing the cabin door. b) Depending upon ACARS screen readability the crew may, at the Captain's discretion, dispatch without a paper copy of the WDR as long as all data can be accurately interpreted.
31-33-01B	Miscellaneous Features	Y	-	-	D May be inoperative provided procedures do not require its use.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-33-01A	Printer	Cockpit Printer INOP
31-33-01B	Printer	Cockpit Printer ____ Feature(s) INOP

MAINTENANCE NOTES:

- If desired, the Airborne Printer can be deactivated by pulling and securing the P210 panel FLT DECK PRINTER circuit breaker. If Airborne Printed is to be deactivated, Maintenance is Required and Flight Crew May **Not** Placard.
- Miscellaneous Features refers to those features, which when inoperative, do not affect the printer's primary functions.

(O) PROCEDURES

31-33-01A

Refer to REMARKS or EXCEPTIONS sections above.

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-11

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD					REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION						REMARKS OR EXCEPTIONS
31-35-01	Quick Access Recorder	N	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-35-01	Center Display Control Panel	QAR INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
31-35-02	Airplane Condition Monitoring Function (ACMF)	Y	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-35-02	Center Display Control Panel	ACMF INOP

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-13

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-41-03	AIMS-II Cabinet Bus (-200LR)	Y	1	0	C May be dispatched with AIMS CABINET BUS faults.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-41-03	Near DSPL CTRL Switch	AIMS-II Cabinet Bus Fault(s)

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-14

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-51-01	Master Warning Lights (Glareshield)	Y	2	1 C	May be inoperative provided the aural for the master warning system operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-51-01	Near Affected Master Warning Light	___ Master Warning Light INOP

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-15

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
31-51-02	Master Caution Lights (Glareshield)	Y	2	1	C	May be inoperative provided the aural for the master caution system operates normally.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-51-02	Near Affected Master Caution Light	___ Master Caution Light INOP

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-16

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-51-03	Aural Warning Speaker Systems	Y	2	1 C	May be inoperative provided master warning and master caution lights operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-51-03	Near Captain's Master Warning Light	___ Aural Warning Speaker System INOP

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
31-51-04A	Warning Electronics System (WES) Channels	Y	4	3	C	May be inoperative provided: a) Both stabilizer position indicators operate normally, and b) SPEED LIM flag is not displayed adjacent to the airspeed indication on either PFD.
31-51-04B	Warning Electronics System (WES) Channels	N	4	3	C	(M) May be inoperative deactivated.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-51-04A	Near Captain's Master Warning Light	___ Warning Electronics System (WES) Channel INOP
31-51-04B	Near Captain's Master Warning Light	___ Warning Electronics System (WES) Channel INOP

(M) PROCEDURES

31-51-04B

The warning electronic system (WES) consists of four warning electronic unit (WEU) channels. Pull and secure the circuit breaker associated with the inoperative WEU channel:

NOTE: When a WEU channel is deactivated (CB pulled), additional status messages will be displayed. The MEL item listed with the associated Status Message must also be deferred.

Status Message	ELMS Panel	Circuit Breaker Label	Resulting Status Message(s)	MEL Item
WEU CHANNEL L1	P310	WARNING ELECTRONIC - L1	STALL WARNING SYS L WARNING SPEAKER L	27-32-01 31-51-03
WEU CHANNEL L2	P310	WARNING ELECTRONIC - L2	STALL WARNING SYS L	27-32-01
WEU CHANNEL R1	P210	WARNING ELECTRONIC - R1	STALL WARNING SYS R WARNING SPEAKER R	27-32-01 31-51-03
WEU CHANNEL R2	P210	WARNING ELECTRONIC - R2	STALL WARNING SYS R	27-32-01

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-51-05A	Warning Electronic System (WES) Autopilot Disconnect Warning Function "DISP.APPR.REQ'D."	Y	1	0	B (O) May be inoperative provided: a) Autopilots are not used, b) Approach minimums do require use of the autopilots, c) Number of flight segments and segment duration is acceptable to flight crew, d) Enroute operations do not require use of the autopilots, and e) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III - RVSM - Polar Operations</u> Not Authorized
31-51-05B	WES Autopilot Interfaces	Y	3	2	C (O) May be inoperative provided the WES autopilot disconnect warning function is verified to operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-51-05A	Near Autopilot Disengage Switch	Warning Electronic System Autopilot Disconnect Warning Function INOP
31-51-05B	Near Autopilot Disengage Switch	___ Warning Electronic System Autopilot Interface INOP

(O) PROCEDURES

31-51-05A

For the WES - Autopilot disconnect warning function inoperative, do not use the autopilots and observe the following restrictions:

1. Approach minimums must not require autopilot use.
2. Enroute operations must not require autopilot use.

31-51-05B

1. Verification that the WES - autopilot disconnect warning function is operational can be accomplished by engaging, then manually disengaging the autopilots.
2. Activation of the master warning lights and aural will indicate the WES - autopilot disconnect warning function is operational.

NOTE: An autopilot disconnect warning is annunciated by illumination of the master warning lights, activation of an aural indication and display of an EICAS message(s). Discrete signals are sent from each of the three autopilots to WES, which controls the master warning lights and aural indications. The EICAS status message A/P DISC WARN SYS is displayed when two or more WES channels indicate that one of the autopilot / WES interface discretes is different from the other two. The autopilot disconnect warning function may still be operative if this message is displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-01	Display Units (DU)	Y	6	5	C May be inoperative in the lower center DU position.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-01	Lower Center DU	Lower Center DU INOP

MAINTENANCE NOTE:

The six display units are interchangeable. If the inoperative display unit is in a location other than the lower center position, it can be replaced with the operative unit from the lower center position. The following table lists the circuit breaker label and associated DU. The circuit breakers are in the P11 panel:

Circuit Breaker label	Associated Display Unit
CAPT DSPL - OUTBD	Captain's outboard
CAPT DSPL - INBD	Captain's inboard
C DSPL UPR	Upper center
F/O DSPL - OUTBD	First Officer's outboard
F/O DSPL - INBD	First Officer's inboard
C DSPL LWR	Lower center

(Ref. AMM 31-61-01/401 for DU removal / installation.)

If inoperative display must be interchanged for dispatch, Maintenance is Required and Flight Crew May **Not** Placard.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
31-61-02A	Cursor Control Devices (CCD)	Y	2	1	C	
31-61-02B	Cursor Control Devices (CCD)	Y	2	0	C	(O) May be inoperative provided paper checklist procedures are used. NOTE: Data communications functions such as ACARS are not accessible on an MFD.
31-61-02C	Cursor Control Devices (Cursor Location Lights)	Y	6	0	C	
31-61-02D	Cursor Control Devices (Cursor Location Switch Lights)	Y	6	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-02A	Affected Cursor Control Device	___ Cursor Control Device INOP
31-61-02B	Affected Cursor Control Device(s)	Both Cursor Control Devices INOP
31-61-02C	Affected Cursor Control Device	Cursor Control Device ___ Cursor Location Light(s) INOP
31-61-02D	Affected Cursor Control Device(s)	Cursor Control Device ___ Cursor Location Switch Light(s) INOP

(O) PROCEDURES

31-61-02B

Refer to REMARKS or EXCEPTIONS sections above.

	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-21

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-03	Remote Light Sensor (RLS) System "Contact MCC"	Y	1	0	B May be inoperative provided all manual display brightness controls operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-03	Center Display Control Panel	Remote Light Sensor System INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-04A	Display Select Panel (DSP)	Y	1	0	C (O)(M) May be inoperative provided the left and right CDU DSP backup features are verified to operate normally.
31-61-04B	Display Select Panel (Multifunction Display Lights)	Y	3	0	C
31-61-04C	Display Select Panel (Illuminated Switch Lights)	Y	15	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-04A	Display Select Panel	Display Select Panel INOP
31-61-04B	Display Select Panel	Display Select Panel ____ Multifunction Display Light(s) INOP
31-61-04C	Display Select Panel	Display Select Panel ____ Illuminated Switch Light(s) INOP

(O) PROCEDURES

31-61-04A

Use CDU DSP backup feature in lieu of DSP.

(M) PROCEDURES

31-61-04A

The CDU provides an alternate way to control the functions of the display select panel. When the display control select key on the CDU is ON display select control is transferred from the display select panel to the CDU. Perform the following to verify that the left and right CDU DSP backup features operate normally.

1. Press DSP CTL (Display Select Panel Control select key) on the main menu of the CDU to ON.
2. Confirm that the DSP prompt is displayed on the main menu of the CDU beside the Display Select Panel page select key. This indicates display select control is available through the CDU.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-05A	EICAS Status Messages	N	-	0	C (O)(M) May be inoperative provided an acceptable procedure is used PRIOR TO EACH DEPARTURE (Log Book Entry Required) to verify that associated equipment operates normally. Repetitive Check Required (Yellow Placard)
31-61-05B	EICAS Status Messages	N	-	0	C (M) May be inoperative provided associated equipment is considered inoperative and deferred per applicable MEL relief.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-05A	Center Display Control Panel	___ EICAS Status Message(s) INOP
31-61-05B	Center Display Control Panel	___ EICAS Status Message(s) INOP

(O) PROCEDURES

31-61-05A

PRIOR TO EACH DEPARTURE:

1. An inoperative (nuisance) status message is one which is displayed when there is no actual equipment fault.
2. If such an EICAS message is suspected, the airplane may be dispatched provided an acceptable procedure is used to verify that associated equipment operates normally.
3. The EICAS Cross Reference List can be used to locate the appropriate MEL item for possible dispatch if it is determined the status message is not inoperative (not a nuisance message).

(M) PROCEDURES

31-61-05A

Verify that associated equipment operates normally.

NOTE: There is no acceptable procedure available for verifying the Flight Control System operates normally when the FLIGHT CONTROL SYS status message is displayed.

31-61-05B

Defer associated equipment inoperative per applicable MEL relief.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-06	Inboard Display Selector Positions "Contact MCC"	Y	8	7 B	(O)(M) May be inoperative provided: a) Lower center display unit operates normally, b) Remaining positions are verified to operate normally on associated selector, c) For an inoperative INBOARD DSPL selector in the NAV position, select the MFD position and select the desired MFD format on the associated inboard display unit using the DSP, and d) For an inoperative INBOARD DSPL selector in the MFD position, select the NAV position and use lower center display and opposite-side inboard display units for displaying required MFD formats.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-06	Near Affected Inboard Display Selector	___ Inboard Display Selector Position INOP

(O) PROCEDURES

NOTE: AIMS display redundancy management will automatically provide PFD or EICAS formats to the proper display units when an associated outboard display unit failure or an upper center display unit failure is detected. Since the PFD and EICAS positions are not normally used, no alternate procedures are required when either or both positions are inoperative.

Refer to REMARKS or EXCEPTIONS sections above.

(M) PROCEDURES

Verify that the inboard display (INBOARD DSPL) selector with the inoperative position operates normally in the remaining positions (AMM 31-00-00/901).

1. For verifying that the PFD position operates normally:
 - a. Position the INBOARD DSPL selector with the inoperative position to PFD.
 - b. Verify the associated side's inboard displays the PFD and the outboard display blanks.
 - c. On the glareshield panel (P55), use the Display Select Panel (DSP) to select the inboard display unit associated with the inoperative INBOARD DSPL selector (L INBD or R INBD).
 - d. On the DSP, verify that no other DSP selections will overwrite the PFD displayed on the inboard display.

CONTINUED NEXT PAGE

 DELTA	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-25

2. To verify that the MFD position operates normally:
 - a. Position INBOARD DSPL selector with the inoperative position to MFD.
 - b. On the glareshield panel (P55), use the Display Select Panel (DSP) to select the inboard display unit associated with the inoperative INBOARD DSPL selector (L INBD or R INBD).
 - c. On the DSP, select the NAV position.
 - 1) Ensure the navigation display (ND) format appears on the associated inboard display unit.
 - 2) Use the EFIS Control Panel to adjust the range and modes on the ND to confirm the associated inboard display unit is properly responding to the EFIS CONTROL PANEL.
 - d. Using the DSP, one at a time, select the COMMANd CHKL, and at least two synoptic formats. As each DSP selection is made, ensure the selected format appears on the associated inboard display unit.
3. To verify that the NAV position operates normally:
 - a. Position INBOARD DSPL selector with the inoperative position to NAV.
 - b. Ensure the ND format appears on the associated inboard display unit.
 - c. Use the EFIS Control Panel to adjust the range and modes on the ND to confirm the associated inboard display unit is properly responding to the EFIS CONTROL PANEL.
 - d. On the DSP, select any format other than NAV and ensure that the associated inboard display unit remains in the ND format.
4. To verify that the EICAS position operates normally:
 - a. Position the INBOARD DSPL selector with the inoperative position to EICAS.
 - b. Verify the associated side's inboard displays EICAS and the upper center display blanks.
 - c. On the glareshield panel (P55), use the Display Select Panel (DSP) to select the inboard display unit associated with the inoperative INBOARD DSPL selector (L INBD or R INBD).
 - d. Verify that display selections made from the DSP do not overwrite the EICAS, except ENG, FUEL and AIR displays.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-07A	Electronic Checklist (ECL) System	Y	1	0	C (O)(M) May be inoperative provided electronic checklist is deactivated and established paper checklist procedures are used.
31-61-07B	ECL Closed Loop Switch Indications	Y	-	0	C (O) May be inoperative provided ECL line item override procedures are used when required to complete checklists.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-07A	Center Display Control Panel	Electronic Checklist (ECL) System INOP
31-61-07B	Center Display Control Panel	___ Electronic Checklist Closed Loop Switch Indication(s) INOP

(O) PROCEDURES

31-61-07A

1. Use established paper checklists.
2. With the checklist icon inoperative, paper checklists must be consulted to determine if checklist steps exist for the annunciated condition.

NOTE: When the electronic checklist system is failed or disabled, the checklist icon will not be displayed.

31-61-07B

For inoperative ECL Closed Loop Switch Indications, use the ECL item override (ITEM OVRD) feature to complete the checklist as outlined in the Boeing Operations Manual.

NOTE: ECL Closed Loop Switch Indications rely on ARINC-629 signals transmitted from the Overhead Panel ARINC System (OPAS) to AIMS for use in the ECL system. These signals originate from a separate set of switch contacts that can be inoperative while the remainder of the affected switch operates normally. If the affected switch is not operating normally, its condition will be reported by additional status and/or alerting messages.

(M) PROCEDURES

31-61-07A

NOTE: No maintenance action is required if the CHECKLIST DISABLED or the CHECKLIST NOT AVAILABLE message is displayed on the MFD.

Deactivate the electronic checklist by selecting the Checklist Function DISABLE button on the primary display system Maintenance Task maintenance page.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-08A	EFIS Control Panels	Y	2	1	C (O)(M) May be inoperative provided the associated CDU EFIS control panel backup feature is verified to operate normally.
31-61-08B	EFIS Control Panels (Map Switch Lights)	Y	14	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-08A	Affected EFIS Control Panel	___ EFIS Control Panel INOP
31-61-08B	Affected EFIS Control Panel	EFIS Control Panel ___ Map Switch Light(s) INOP

(O) PROCEDURES

31-61-08A

Use associated (same side) CDU to control the functions of the inoperative EFIS control panel.

(M) PROCEDURES

31-61-08A

Verify the associated (same side) CDU EFIS control backup feature operates normally.

1. Press the associated CDU Menu key.
2. Press EFIS Control Select key to ON.
3. Press the EFIS Page Select key to ON.
4. Verify the EFIS Control page is displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
INSTRUMENT SOURCE SWITCHES						
31-61-09A	NAV and DSPL CTRL Switches	Y	4	0	C	May be inoperative provided associated switches are not moved in flight.
31-61-09B	AIR DATA / ATT Switches	Y	2	1	C	May be inoperative provided the associated switch is not moved in flight.
31-61-09C	AIR DATA / ATT Switches	N	2	0	C	(M) May be inoperative provided: a) One AIR DATA / ATT switch is in the normal position, b) Associated display units are verified to operate from selected sources, and c) Associated switches are not moved in flight.

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-09A	Near Affected NAV / DSPL CTRL Switch(es)	___ Instrument Source Switch(es) INOP
31-61-09B	Near Affected AIR DATA / ATT Switch	___ Instrument Source Switch INOP
31-61-09C	Near Affected AIR DATA / ATT Switch(es)	___ Instrument Source Switches INOP

(M) PROCEDURES

31-61-09C

NOTE: If AIMS Input / Output Module (IOM) #4 in the left AIMS cabinet is inoperative, selecting the left AIR DATA / ATT switch to the ALTN position will display failure flags on the left PFD for attitude, airspeed and altitude. If IOM #2 in the right AIMS cabinet is inoperative, selecting the right AIR DATA / ATT switch to the ALTN position will display an attitude fail flag on the right PFD.

Verify that display units operate from selected sources.

1. Position both AIR DATA/ATT switches to off (normal position - switch out).
2. Verify that the EICAS advisory message ALTN ATTITUDE is not displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
31-61-11A	Heading Reference (HDG REF) Switch (TRUE Function) "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided enroute procedures do not require its use. <u>Polar Operations</u> Not Authorized
31-61-11B	Heading Reference Switch Lights (TRUE Light)	Y	1	0	C
31-61-11C	Heading Reference Switch Lights (NORM Light)	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
31-61-11A	Near Affected HDG REF Switch	___ Heading Reference (HDG REF) Switch INOP
31-61-11B	Near Affected HDG REF Switch	Heading Reference Switch Lights ___ TRUE Light INOP
31-61-11C	Near Affected HDG REF Switch	Heading Reference Switch Lights ___ NORM Light INOP

(O) PROCEDURES

31-61-11A

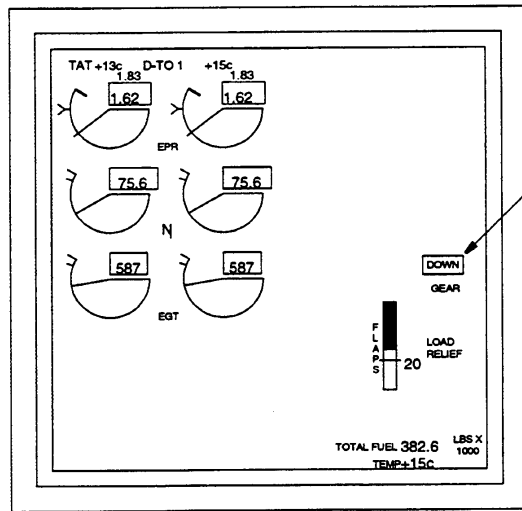
Operation is not allowed in routes where True North referencing is required.

 DELTA	B777 Minimum Equipment List	ATA 31 Indicating / Recording Systems	R14 05/09/16 Page 31-30

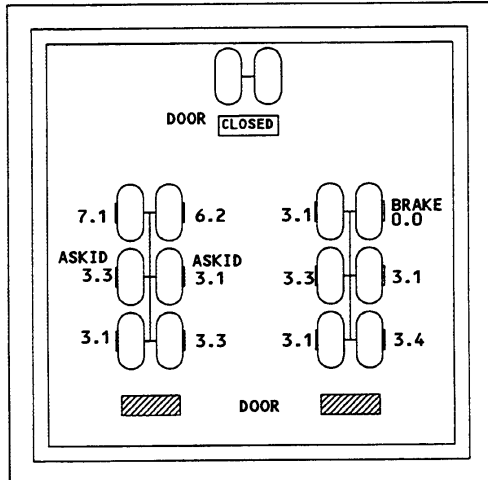
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ATA 32 Contents

32-00-01	Landing Gear Synoptic Display	32-3
32-08-01A	Proximity Sensor Electronic Unit (PSEU) Channels	32-4
32-09-01A	Air / Ground System - Weight on Wheels (Left System)	32-6
32-31-01	Landing Gear Lever Lock Solenoid	32-8
32-31-02	Landing Gear Selector Valve Electrical Control Circuits	32-9
32-32-01	Main Gear Door Uplock Spring Assemblies	32-10
32-32-02	Main Gear Uplock Springs	32-11
32-35-01	Landing Gear Alternate Extend Hydraulic Pressure Switch	32-12
32-35-02	Ground Door Release Control System	32-13
32-41-01	Brake Accumulator Pressure Indicator (Wheel Well)	32-14
32-41-02	Brake Accumulator Pressure Indicator (Flight Deck)	32-15
32-41-03A	BRAKE SOURCE Indication System	32-16
32-41-03B	BRAKE SOURCE Light	32-16
32-42-01A	Normal Antiskid Valves	32-19
32-42-02	Antiskid Wheelspeed Transducers	32-22
32-42-03	Alternate Antiskid Valves	32-23
32-42-04A	Autobrake System (Including Autobrake Solenoid Valve)	32-24
32-44-01	Brake Status Lights (On Nose Gear)	32-26
32-44-02	Gear Retraction Braking System	32-27
32-44-03	Parking Brake Set Indication System (Flight Deck)	32-28
32-45-01A	Wheel Brakes	32-30
32-45-02	Wheel Tie Bolts	32-34
32-45-03	Integral Tire Pressure Indicators (Wheel Mounted)	32-35
32-45-04	Nose Gear Spin Brakes	32-36
32-46-01	Brake Temperature Monitor System (BTMS)	32-37
32-49-01	Tire Pressure Indication System (TPIS) (-200LR)	32-38
32-53-01	Main Gear Steering System (Including Indication)	32-39
32-61-01A	Truck Tilt Sensors	32-43
32-61-01C	Nose Gear Not-Compressed Sensors (PSEU 2)	32-43
32-61-02	Landing Gear Door Position Sensors	32-45
32-61-03	Landing Gear Uplock Position Sensors	32-46
32-71-01	Tail Strike Detector Channels	32-47



EICAS DISPLAY (P2)



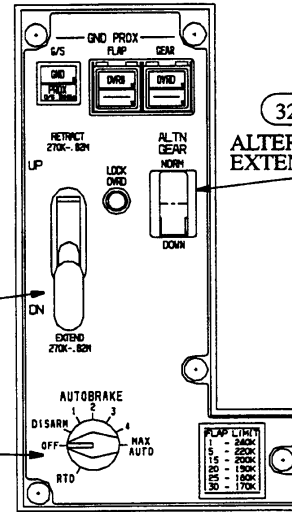
LANDING GEAR SYNOPTIC DISPLAY

32-00-1

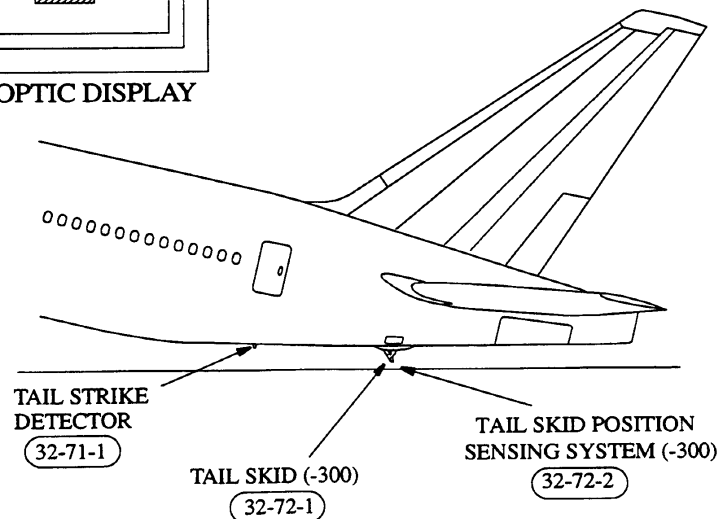
32-61-1
LANDING GEAR
POSITION
INDICATION

32-30-1
LANDING GEAR
CONTROL LEVER

32-42-4
AUTOBRAKE
SELECTOR SWITCH



LANDING GEAR CONTROL
MODULE (P2)



	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-3

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
32-00-01	Landing Gear Synoptic Display	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-00-01	Center Display Control Panel	Landing Gear Synoptic Display INOP

OPERATIONS NOTE:

If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) may restore the missing data. Synoptic Displays containing missing data may continue to be used to the extent remaining data is useful.

NOTE: Airplane system faults will be annunciated by EICAS alerting and status messages.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
32-08-01A	Proximity Sensor Electronic Unit (PSEU) Channels	N	4	3	C	
32-08-01B	Proximity Sensor Electronic Unit (PSEU) Channels	N	4	2	C	(O)(M) One may be inoperative in each PSEU provided: a) PSEU 1 transmission is verified on the left ARINC 629 systems bus, and b) PSEU 2 transmission is verified on the right ARINC 629 systems bus.
32-08-01C	Proximity Sensor Electronic Unit (PSEU) Channels “DISP.APPR.REQ'D.”	N	4	2	C	(O)(M) One may be inoperative in each PSEU provided: a) PSEU 1 transmission is verified on the right ARINC 629 systems bus, b) PSEU 2 transmission is verified on the left ARINC 629 systems bus, c) After takeoff, gear remains down for two minutes before retraction, and d) Takeoff performance is based on landing gear extended.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-08-01A	Center Display Control Panel	___ PSEU Channel INOP
32-08-01B	Center Display Control Panel	___ PSEU Channel(s) INOP
32-08-01C	Center Display Control Panel	___ PSEU Channel(s) INOP

(O) PROCEDURES

32-08-01B

The autobrake selector may not automatically move from RTO to OFF after takeoff. If autobrake selector remains in RTO, manually move to OFF.

32-08-01C

1. The autobrake selector may not automatically move from RTO to OFF after takeoff. If autobrake selector remains in RTO, manually move to OFF.

CONTINUED NEXT PAGE

2. For dispatch with landing gear extended for two minutes:
 - a. After takeoff, leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.

32-08-01C	PROXIMITY SENSOR ELECTRONIC UNIT (PSEU) CHANNELS
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 1,900 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-08-01C.

(M) PROCEDURES

32-08-01B

To verify PSEU 1 transmission is on the left ARINC 629 systems bus and PSEU 2 transmission is on the right ARINC 629 systems bus:

1. Verify PSEU 1 and PSEU 2 data is displayed on the Landing Gear ACTN/INDN maintenance page.
2. Open P110 panel PSEU 1 PRI PWR circuit breaker.
3. Verify PSEU 1 data is removed from the Landing Gear ACTN / INDN display. PSEU 1 is transmitting on the left ARINC 629 systems bus.
4. Open P310 panel PSEU 2 ALTN PWR circuit breaker.
5. Verify PSEU 2 data is removed from the Landing Gear ACTN/INDN display. PSEU 2 is transmitting on the right ARINC 629 systems bus.
6. Close the PSEU 1 PRI PWR and the PSEU 2 ALTN PWR circuit breakers.

32-08-01C

To verify PSEU 1 transmission is on the right ARINC 629 systems bus and PSEU 2 transmission is on the left ARINC 629 systems bus:

1. Verify PSEU 1 and PSEU 2 data is displayed on the Landing Gear ACTN / INDN maintenance page.
2. Open P310 panel PSEU 1 ALTN PWR circuit breaker.
3. Verify PSEU 1 data is removed from the Landing Gear ACTN/INDN display. PSEU 1 is transmitting on the right ARINC 629 bus.
4. Open P210 panel PSEU 2 PRI PWR circuit breaker.
5. Verify PSEU 2 data is removed from the Landing Gear ACTN/INDN display. PSEU 2 is transmitting on the left ARINC 629 systems bus.
6. Close the PSEU 1 ALTN PWR and PSEU 2 PRI PWR circuit breakers.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-09-01A	Air / Ground System - Weight on Wheels (Left System)	N	1	0	C (O)(M) May be inoperative provided: a) Associated system is deactivated, b) Right air/ground system operates normally, and c) Right system cardfile power supply 1 operates normally.
32-09-01B	Air / Ground System - Weight on Wheels (Right System) "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) Associated system is deactivated, b) Left air/ground system operates normally, and c) All galley/lavatory water supply shutoff valves are closed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-09-01A	Center Display Control Panel	Left Weight on Wheels Air / Ground System INOP
32-09-01B	Center Display Control Panel	Right Weight on Wheels Air / Ground System INOP

(O) PROCEDURES

32-09-01A, 32-09-01B

1. If available, select the ATC transponder opposite the inoperative air/ground system.

NOTE: When on the ground, if the ATC transponder is selected on the same side as the inoperative air/ground system and it is not selected to STBY, the ATC transponder will transmit. The same side ATC transponder will operate normally in the air.

2. For right system inoperative; water for the galley sinks, lavatory sinks and drinking fountains (if installed) will not be available.

(M) PROCEDURES

32-09-01A

Deactivate the left Air/Ground System (AMM 32-00-00/901).

1. Pull and secure the P11 panel AIR/GND 1 circuit breaker.
2. Gain access to the P85 Left System Cardfile in the Main Equipment Center.
3. Set the power switch for the L Weight on Wheels card (P85 position A16) to the OFF position.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-7

32-09-01B

NOTE: If the right Air / Ground System is inoperative, the forward and aft drain mast heaters and the gray water drain line heaters default to low heat. Low heat inflight is likely to result in ice plugging drain masts or lines which can cause overflowing sinks. The left and right WOW cards are interchangeable (AMM 20-10-01/401).

Deactivate the right Air/Ground System and shutoff the water supply to the galley sinks, lavatory sinks and if installed drinking fountains (AMM 32-00-00/901).

1. Pull and secure the P11 panel AIR / GND 2 and AIR / GND 3 circuit breakers.
2. Gain access to the P84 Right System Cardfile in the Main Equipment Center.
3. Set the power switch for the R Weight-On-Wheels card (P84 position A16) to the OFF position.
4. Close the water supply shut off valves to the galley sinks, lavatory sinks and drinking fountains (if installed).

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-8

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-31-01	Landing Gear Lever Lock Solenoid	N	1	0	C (O) May be inoperative provided solenoid is in the locked position.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-31-01	Near Landing Gear Handle	Landing Gear Lever Lock Solenoid INOP

(O) PROCEDURES

For gear retraction use the following procedure:

1. Push landing gear Lever Lock Override switch.
2. Position Landing Gear Lever to UP.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-31-02	Landing Gear Selector Valve Electrical Control Circuits	N	2	1 C	(O)(M) One UP/DOWN electrical control circuit may be inoperative provided the remaining UP/DOWN circuit is verified to operate normally ONCE EACH FLIGHT DAY. (Log Book Entry Required) Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-31-02	Near Landing Gear Handle	___ Landing Gear Selector Valve Electrical Control Circuit INOP

(O) PROCEDURES

- False TOO LOW GEAR aural alerts may occur. Confirm landing gear configuration.
- Inhibit the aural caution by positioning the Ground Proximity GEAR Override switch to OVRD.

(M) PROCEDURES

ONCE EACH FLIGHT DAY - Verify that one of the electrical control circuits operates normally.

NOTE: During this test GEAR DOOR and GEAR DISAGREE EICAS messages may appear. You do not have to perform the maintenance actions associated with these message. The messages will go away when this test is complete.

- Install the landing gear downlock pins.
- Ensure the landing gear lever is in the DN position.
- Supply electrical power.
- Ensure the following circuit breakers are closed.

NOTE: If one of the following circuit breakers cannot be closed, isolate the circuit fault. It may be necessary to disconnect the affected circuit at the selector/bypass valve to allow the circuit breaker to be reset. If a disconnect of the affected selector/bypass valve is performed, ensure connector is capped and stowed.

- P11 panel LDG GEAR EXTD/RETR 1
- P11 panel LDG GEAR EXTD/RETR 2

- Pressurize the center hydraulic system.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED IN ALL THE LANDING GEAR BEFORE YOU MOVE THE CONTROL LEVER. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- Push and hold the landing gear lever lock override switch and simultaneously move the landing gear control lever to UP.
- Ensure all landing gear doors open.
- Move the landing gear lever to DN.
- Ensure all landing gear doors close.
- Remove center hydraulic system power.
- Remove the landing gear downlock pins.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-32-01	Main Gear Door Uplock Spring Assemblies "DISP.APPR.REQ'D."	N	4	2	B (O)(M) One spring on each door uplock mechanism may be missing and gear retraction allowed provided 270 KIAS/.82 Mach is not exceeded during flight.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-32-01	Near Landing Gear Handle	___ Main Gear Door Uplock Spring INOP

(O) PROCEDURES

Observe the landing gear EXTEND placard (270K - .82M) speed limit.

(M) PROCEDURES

Remove any pieces of broken spring.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-11

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-32-02	Main Gear Uplock Springs "DISP.APPR.REQ'D."	N	4	3	B (O)(M) One spring on one main gear uplock mechanism may be missing and gear retraction allowed provided 270 KIAS/.82 Mach is not exceeded during flight.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-32-02	Near Landing Gear Handle	___ Main Gear Uplock Spring INOP

(O) PROCEDURES

Observe the landing gear EXTEND placard (270K - .82M) speed limit.

(M) PROCEDURES

Remove any pieces of broken spring

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-35-01	Landing Gear Alternate Extend Hydraulic Pressure Switch "Contact MCC"	N	1	0	B (M) May be inoperative provided landing gear doors are verified to open using the alternate extend system.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-35-01	Near Landing Gear Handle	Landing Gear Alternate Extend Hydraulic Pressure Switch INOP

OPERATIONS NOTE:

For Non-Normal Checklists that use the alternate gear extend system, the gear should indicate in-transit within approximately 16 seconds.

(M) PROCEDURES

Verify the landing gear doors open using the alternate extend system.

1. Install landing gear downlock pins (AMM 32-00-30/201).
2. Make sure the following P11 panel circuit breakers are closed:
 - a. LDG GEAR ALTN EXT MOTOR
 - b. LDG GEAR ALTN EXT CTRL
3. On the flight deck, use the Glareshield panel (P55) Display Select Panel (DSP) to select the Landing Gear (GEAR) synoptic on to a Multi-Function Display (MFD).
4. Position Landing Gear Panel (P2-2) Alternate Gear (ALTN GEAR) switch DOWN and hold (maximum 45 seconds) until all landing gear doors are open, indicated by in-transit (three cross-hatched boxes) on the GEAR synoptic.

NOTE: GEAR DOOR advisory message will be displayed.

5. Close the landing gear doors (AMM 32-00-40/201).

NOTE: The Ground Door Release function which closes the landing gear doors must be operative.

6. Remove landing gear downlock pins when maintenance activities are complete (AMM 32-00-30/201).

NOTE: For maintenance ground operations, the landing gear doors must be opened by placing the ALTN GEAR switch DOWN and holding (45 seconds maximum) until all gear doors are open, indicated by in-transit (three cross-hatched boxes) on the GEAR synoptic.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-35-02	Ground Door Release Control System	N	1	0	C
					(M) May be inoperative provided: a) Both door open switches are verified to be OPEN, b) Landing gear doors are verified to open using the alternate extend system, and c) Landing gear doors are closed PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-35-02	Near Landing Gear Handle	Ground Door Release Control System INOP

(M) PROCEDURES

Verify both door open control switches are open (not inoperative closed) and the landing gear doors will open using the alternate extend switch on the flight deck (AMM 32-00-00/901).

- Make sure the following P11 panel circuit breakers are closed:
 - LDG GEAR ALTN EXT MOTOR
 - LDG GEAR ALTN EXT CTRL
- Install landing gear downlock pins (AMM 32-00-30/201).
- Verify both door open control switches are open (not inoperative closed).
 - Ensure the Main Wheel Well Electric Service Panel (P56) Arm Doors switch and All Doors Open/Main Landing Gear Doors Close switches are positioned OFF.
 - Position Arm Doors switch ARM DOORS and hold. Wait 5 seconds, and then release the switch and ensure it returns to OFF.
 - Visually ensure none of the gear doors open.
 - Position All Doors Open/Main Landing Gear Doors Close switch ALL DOORS OPEN and hold. Wait 5 seconds, and then release the switch and ensure it returns to OFF.
 - Visually ensure none of the gear doors open.
- Verify the nose and main landing gear doors open using the alternate extend system.
 - Use Glareshield panel (P55) Display Select Panel (DSP) to select the Landing Gear (GEAR) synoptic on to a Multi-Function Display (MFD).
 - Momentarily position Landing Gear Panel (P2-2) ALTN GEAR switch DOWN. All landing gear doors should open, indicated by in-transit (three cross-hatched boxes) on the GEAR synoptic.
 - Close the landing gear doors (AMM 32-00-40/201).

NOTE: The Ground Door Release function which closes the landing gear doors must be operative.

 - Remove landing gear downlock pins when all maintenance activities are complete (AMM 32-00-30/201).

PRIOR TO EACH DEPARTURE - Verify landing gear doors are closed.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-14

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			N	1	0	D	REPAIR CATEGORY
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS					
32-41-01	Brake Accumulator Pressure Indicator (Wheel Well)	May be inoperative provided flight deck brake accumulator pressure indicator operates normally.					

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-41-01	Near Brake Pressure Indicator	Brake Accumulator Pressure Indicator INOP

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-15

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-41-02	Brake Accumulator Pressure Indicator (Flight Deck)	N	1	0	C (M) May be inoperative provided brake accumulator charge is verified normal ONCE EACH FLIGHT DAY. (Log Book Entry Required) Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-41-02	Near Brake Pressure Indicator	Brake Accumulator Pressure Indicator INOP

(M) PROCEDURES

ONCE EACH FLIGHT DAY - Verify brake accumulator precharge pressure is normal.

1. Accumulator pressure gage and servicing placard located in the right main landing gear wheel well.
2. Pump captains brake pedals twelve times to bleed fluid from accumulator and then wait five minutes prior to checking pressure at gage.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-41-03A	BRAKE SOURCE Indication System "Contact MCC"	N	1	0	A (O)(M) May be inoperative provided: a) Flight deck brake accumulator pressure indicator operates normally, b) Normal and alternate brake systems are verified to operate normally, c) Brake accumulator isolation valve is verified to operate normally, d) During taxi and landing operations, monitor the brake accumulator pressure indicator, e) If the brake accumulator pressure is less than 2800 psig for longer than three (3) seconds, reference the QRH and accomplish the BRAKE SOURCE non-normal procedure, and f) Repairs are made within three flight days.
32-41-03B	BRAKE SOURCE Light	Y	1	0	C May be inoperative provided: a) The BRAKE SOURCE alerting message operates normally, and b) For towing operations, AC electrical power must be applied to the airplane.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-41-03A	Near Brake Pressure Indicator	BRAKE SOURCE Indication System INOP
32-41-03B	Near Brake Pressure Indicator	BRAKE SOURCE Light INOP

(O) PROCEDURES

32-41-03A

NOTE: Alternate procedures for towing operations are provided in the (M) PROCEDURE.

- The only indication of low normal and alternate source brake pressure is the brake accumulator pressure on the flight deck BRAKE ACCUM gage on the left forward panel.

NOTE: When the brake source indication system is inoperative, both the BRAKE SOURCE alerting EICAS message and the BRAKE SOURCE light are inoperative.

- Refer to REMARKS or EXCEPTIONS section above.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-17

(M) PROCEDURES

32-41-03A

CAUTION: With the BRAKE SOURCE indication system inoperative, the brake accumulator (BRAKE ACCUM) pressure indicator must be closely monitored for possible failure of normal and alternate source brake hydraulic pressure. If brake accumulator pressure is less than 2,800 psig for longer than three (3) seconds, towing operations should be halted.

Verify normal and alternate brake systems, and brake accumulator isolation valve operate normally:

1. Install the landing gear door safety pins (AMM 32-00-15/201).
2. Install the nose and main landing gear downlock pins (AMM 32-00-30/201).
3. Supply electrical power on the airplane (AMM 24-22-00/201).

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF FLIGHT CONTROL SURFACES, THRUST REVERSERS, AND LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN HYDRAULIC POWER IS SUPPLIED AND CAUSE INJURIES AND DAMAGE TO EQUIPMENT.

4. Pressurize the right and center hydraulic systems (AMM 29-11-00/201).
5. Use a CDU to display the Landing Gear Brakes/Steering Maintenance page on a Multi-Function Display (MFD).
6. Use the Display Select Panel (DSP) to select the Status page on a different MFD.

NOTE: The Status page provides system hydraulic pressures at the top of the page.

7. Ensure the brake accumulator pressure is between 2,800 and 3,000 psig.

NOTE: Brake accumulator pressure is available on two different gages, either of which may be used. One gage is in the right main landing gear wheel well below the brake accumulator. The other gage is on the flight deck on the main instrument panel (P1) labeled BRAKE ACCUM.

8. Quickly apply the captain's brake pedals full down.
 - a. There should be a momentary decrease in brake accumulator pressure.

9. Release the captain's brake pedals.
10. Fully push and hold the captain's brake pedals.

NOTE: The parking brake can be set to hold the pedals.

11. Examine each brake's pistons to make sure that all brakes operated.
12. On Landing Gear Brakes/Steering Maintenance page, confirm left and right BRAKE METERED PRESS for the NORMAL brake hydraulic system is approximately 3,000 psi.
13. Release the captain's brake pedals (or parking brake).
14. Examine each brake's pistons to make sure that all brakes are released.
15. Remove power from the right hydraulic system (AMM 29-11-00/201).

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-18

16. Use one of the following two methods to remove excess pressure from the right hydraulic system.

- a. Let the internal leakage decrease the pressure in the right hydraulic system to zero.
- b. Decrease the right hydraulic pressure to zero using the pitch trim.
 - 1) Position the C TAIL FLT CONTROL HYD POWER switch on the overhead maintenance panel (P61) to SHUTOFF.
 - 2) Ensure the R TAIL FLT CONTROL HYD POWER switch on the overhead maintenance panel (P61) is positioned to NORM.
 - 3) Operate the pitch trim with the alternate pitch trim lever to decrease the pressure in the right hydraulic system to zero.

NOTE: Right hydraulic system pressure is available on the Status page.

17. Ensure the brake accumulator pressure is between 2,800 and 3,000 psig.

18. Quickly apply the captain's brake pedals full down.

- a. There should be NO momentary decrease in brake accumulator pressure. Steady pressure when the captain's brakes are applied indicates that the accumulator isolation valve is now in its secondary position, which isolates the accumulator.

19. Release the captain's brake pedals.

20. Fully push and hold the captain's brake pedals.

NOTE: The parking brake can be set to hold the pedals.

21. Examine each brake's pistons to make sure that all brakes operated.
22. On Landing Gear Brakes/Steering Maintenance page, confirm left and right BRAKE METERED PRESS for the ALTN brake hydraulic system is approximately 3,000 psi.
23. Release the captain's brake pedals (or parking brake).
24. Examine each brake's pistons to make sure that all brakes are released.
25. Remove power from the center hydraulic system (AMM 29-11-00/201).
26. Position the C TAIL FLT CONTROL HYD POWER switch on the overhead maintenance panel (P61) to NORM.
27. Remove the nose and main landing gear downlock pins (AMM 32-00-30/201).
28. Remove the landing gear door safety pins (AMM 32-00-15/201).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-42-01A	Normal Antiskid Valves "DISP.APPR.REQ'D."	N	12	10	C (O)(M) One valve per each six wheel truck may be inoperative provided: a) Associated brake is deactivated using the deactivation assembly, b) AFM performance decrements for brake(s) deactivated are applied, and c) Approach minimums do require use of antiskid. <u>CAT III</u> Not Authorized
32-42-01B	Normal Antiskid Valves "DISP.APPR.REQ'D."	N	12	10	C (O)(M) One valve per each six wheel truck may be inoperative provided: a) Associated brake is deactivated by capping the brake line, b) After takeoff, gear remains down for two minutes before retraction, c) AFM performance decrements for brake(s) deactivated are applied, d) Takeoff performance is based on landing gear extended, and e) Approach minimums do require use of antiskid. <u>CAT III</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-42-01A	Near Autobrake Switch	___ Normal Antiskid Valve(s) INOP
32-42-01B	Near Autobrake Switch	___ Normal Antiskid Valve(s) INOP

(O) PROCEDURES

32-42-01A

32-42-01A	NORMAL ANTISKID VALVES – BRAKE DEACTIVATION ASSEMBLY USED
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	None
NOTES	1. AWABS Takeoff Data is provided for DRY or SLP-WET runway conditions only. 2. Takeoffs using ICY, 25 CTR or 50 CTR data are not authorized.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-42-01A.

CONTINUED NEXT PAGE

32-42-01B

1. Takeoff performance is based on landing gear extended.
2. For dispatch with brake line capped:
 - a. After takeoff, leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.

32-42-01B NORMAL ANTISKID VALVES – BRAKE LINE(S) CAPPED	
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 1,900 lbs.
NOTES	1. AWABS Takeoff Data is provided for DRY or SLP-WET runway conditions only. 2. Takeoffs using ICY, 25 CTR or 50 CTR data are not authorized. 3. Brake Line Capped requires a significant weight penalty increase versus Brake Deactivation Assembly Used (32-42-01A).
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-42-01B.

(M) PROCEDURES

32-42-01A (Preferred Method)

1. Supply electrical power.
2. Install landing gear downlock pins.
3. Remove power on the right and center hydraulic systems.
4. Install chocks around the tires.
5. Release the parking brake.
6. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.
7. Use the MAT to disable the antiskid EICAS advisory message for the associated brake.
8. Remove the brake deactivation assembly from its location on the Antiskid Shuttle Valve Module. The assembly is referred to as the Flight Dispatch Disconnect (spec. # S294W121-51) vendor P/N 80389.
9. Remove the cover from the applicable shuttle valve and install the deactivation assembly in place of the valve cover.
10. Pressurize the right hydraulic system.
11. Fully press the brake pedals. Make sure the applicable brake does not operate by observing brake piston movement.
12. Remove power on the right hydraulic system.
13. Remove landing gear downlock pins when maintenance and servicing actions are complete.

CONTINUED NEXT PAGE

 DELTA	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-21

32-42-01B (Alternate Method)

1. Deactivating the brake by Capping the Brake Line:

- a. Supply electrical power.
- b. Install landing gear downlock pins.
- c. Remove power on the right and center hydraulic systems.
- d. Install chocks around the tires.
- e. Release the parking brake.
- f. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.
- g. Use the Maintenance Access Terminal (MAT) to disable the antiskid EICAS advisory message for the associated brake.
- h. Uncouple the Brake Disconnect - Brake Hose Half and attach the hose to the landing gear truck using a suitable clamp or strap.

NOTE: The part of the Brake Disconnect that is attached to the hose is called the Brake Disconnect - Brake Hose Half. The part of the Brake Disconnect that is attached to the brake is called the Brake Disconnect - Coupling.

- i. Pressurize the right hydraulic system.
- j. Apply brake pressure and check for leaks.
- k. Make sure the applicable brake does not operate by observing brake piston movement.
- l. Remove power on the right hydraulic system.
- m. Remove landing gear downlock pins when maintenance and servicing actions are complete.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-42-02	Antiskid Wheelspeed Transducers "DISP.APPR.REQ'D."	N	12	10	C (O) One transducer per each six wheel truck may be inoperative provided: a) Performance decrements for brake(s) deactivated are applied, b) No other brakes are deactivated on that truck, and c) Approach minimums do require use of antiskid. <u>CAT III</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-42-02	Near Autobrake Switch	___ Antiskid Wheelspeed Transducer(s) INOP

NOTE: Brake(s) associated with inoperative transducer(s) are not required to be deactivated.

(O) PROCEDURES

32-42-02	ANTISKID WHEELSPEED TRANSDUCERS
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	None
NOTES	1. AWABS Takeoff Data is provided for DRY or SLP-WET runway conditions only. 2. Takeoffs using ICY, 25 CTR or 50 CTR data are not authorized.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-42-02.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-23

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH				
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY				
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS			
32-42-03	Alternate Antiskid Valves	N	8	0	C	(M) May be inoperative provided manual braking capability on the alternate brake system is verified to operate normally.		

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-42-03	Near Autobrake Switch	___ Alternate Antiskid Valve(s) INOP

(M) PROCEDURES

Verify that pedal braking capability operates normally:

1. Pressurize the center hydraulic system.
2. Remove power on the right hydraulic system.
3. Depress and release the brake pedals. Observe brake piston movement on each brake to check that brakes apply and release.
4. Make sure that all 12 brakes are set.
5. Release the brake pedals.
6. Restore airplane to required configuration.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-42-04A	Autobrake System (Including Autobrake Solenoid Valve)	N	1	0	C (M) May be inoperative provided: a) Autobrake solenoid valve is verified CLOSED, and b) Autobrake selector remains in the OFF position.
32-42-04B	Autobrake System (Including Autobrake Solenoid Valve)	N	1	0	C (M) May be inoperative provided: a) Autobrake hydraulic control module is deactivated, and b) Autobrake selector remains in the OFF position.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-42-04A	Near Autobrake Switch	Autobrake System INOP
32-42-04B	Near Autobrake Switch	Autobrake System INOP

(M) PROCEDURES

32-42-04A

Verify the autobrake solenoid valve is CLOSED:

1. Supply electrical power.
2. Verify wheels are chocked.
3. Release the parking brake.
4. Place the autobrake selector to the OFF position.
5. Pressurize the right hydraulic system.
6. If the AUTOBRAKE SOL VALVE message is **not** displayed, the autobrake solenoid valve is CLOSED.
7. If the AUTOBRAKE SOL VALVE message is displayed, perform the following:
 - a. Remove power on the right and center hydraulic systems.
 - b. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.
 - c. If the AUTOBRAKE SOL VALVE message remains displayed, then an autobrake solenoid valve pressure switch or indication system malfunction is indicated and the autobrake solenoid valve is assumed to be CLOSED.
 - d. If the AUTOBRAKE SOL VALVE message is not displayed, the solenoid valve has failed OPEN. Dispatch per MEL 32-42-04B.
8. (-200LR only): Use the Antiskid/Autobrake Control System Maintenance page to ensure the pin program configuration of the BSCU primary and secondary channel is 0001.

NOTE: The presence of maintenance message 32-30701 or 32-30702, indicates that the BSCU pin programming selection may be faulted.

CONTINUED NEXT PAGE

 DELTA	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-25

32-42-04B

Deactivate Autobrake Control Module:

1. Remove Autobrake Valve Module. The autobrake valve module is installed in the right hand wheel well on the forward end of the center panel.
2. Cap and stow the electrical connectors (DM32018).
3. Cap and stow the hydraulic tubes. Recommend two high pressure steel caps for the hydraulic pressure tubes (MS21913J10 or BACP20AU10J) and an aluminum cap for the return tube (MS21913W8 OR BACP20AU8D).
4. Pressurize the right hydraulic system and check for leaks.
5. Restore airplane to required configuration.
6. (-200LR only): Use the Antiskid/Autobrake Control System Maintenance page to ensure the pin program configuration of the BSCU primary and secondary channel is 0001.

NOTE: The presence of maintenance message 32-30701 or 32-30702, indicates that the BSCU pin programming selection may be faulted.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-44-01	Brake Status Lights (On Nose Gear)	Y	3	0 C	(O)(M) May be inoperative provided Flight and / or Maintenance crews advise tug operator that the Brake Status Lights are inoperative.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-44-01	Near Parking Brake Lever	___ Brake Status Light(s) INOP

(O) and (M) PROCEDURES

Refer to REMARKS or EXCEPTIONS section above.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-27

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-44-02	Gear Retraction Braking System "DISP.APPR.REQ'D."	N	1	0	C (O) May be inoperative provided: a) After takeoff, gear remains down for two minutes before retraction, and b) Takeoff performance is based on landing gear extended.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-44-02	Near Landing Gear Handle	Gear Retraction Braking System INOP

(O) PROCEDURES

32-44-02	GEAR RETRACTION BRAKING SYSTEM
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 1,900 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-44-02.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
32-44-03	Parking Brake Set Indication System (Flight Deck)	N 1	0 C	(O)(M) May be inoperative provided: a) Flight crewmembers advise pushback crew of parking brake status, b) Flight crewmembers manually confirm the position of the parking brake lever and maintain awareness of external cues during taxi operations when relying on the parking brake, c) Parking brake valve is verified to operate normally ONCE EACH FLIGHT DAY (Log Book Entry Required), d) Parking brake and brake antiskid interface is verified to operate normally ONCE EACH FLIGHT DAY (Log Book Entry Required), and e) Parking brake takeoff configuration warning system is verified to operate normally. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-44-03	Near Parking Brake Lever	Parking Brake Set Indication System INOP

(O) PROCEDURES

Refer to REMARKS or EXCEPTIONS section above.

(M) PROCEDURES

ONCE EACH FLIGHT DAY - Verify the parking brake valve, and the parking brake and brake antiskid interface indication operate normally. Verify the parking brake takeoff configuration warning operates normally.

NOTE: The flight deck parking brake set indication system is considered inoperative when the EICAS memo message PARKING BRAKE SET is not displayed when the parking brake lever is set and the parking brake valve is verified to be closed.

1. Supply electrical power on the airplane.
2. Install chocks around the tires.
3. Install downlock pins in the nose and main landing gear.
4. Pressurize the right hydraulic system.
5. Release the parking brake.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-29

6. **ONCE EACH FLIGHT DAY** - Verify the parking brake valve operates normally.

- a. Gain access to parking brake valve by opening the right inboard fixed trailing edge panel 651DB. The parking brake valve is on the right main landing gear trunnion, outboard and aft of the normal antiskid shuttle valve module.
- b. Verify that the parking brake valve manual override lever indicates the valve is open.
- c. Set the parking brake.
- d. Verify the parking brake valve manual override lever indicates the valve is fully closed.
- e. Close the right inboard fixed trailing edge panel 651DB.

7. **ONCE EACH FLIGHT DAY** - Verify the parking brake and brake antiskid interface indication operates normally.

- a. Open P11 panel LDG GEAR PARKING BRAKE VALVE circuit breaker.
- b. Release the parking brake.
- c. Verify the EICAS alerting message ANTISKID is displayed on the EICAS display.
- d. Close P11 panel LDG GEAR PARKING BRAKE VALVE circuit breaker.
- e. Verify the EICAS alerting message ANTISKID is no longer displayed on the EICAS display.

NOTE: This completes the required daily verifications. Proceed to step 9 if verification of the parking brake takeoff configuration warning system is not required.

8. Verify the parking brake takeoff configuration warning system operates normally:

- a. Set the parking brake.
- b. Perform the Warning Electronic System (WES) Takeoff Configuration Test (AMM 31-51-00/501).
- c. During the test, verify the EICAS warning level message CONFIG PARKING BRAKE is displayed, the master warning light illuminates and the siren sounds.
- d. Release the parking brake.
- e. Perform the Warning Electronic System (WES) Takeoff Configuration Test (AMM 31-51-00/501).
- f. During the test, verify the EICAS warning level message CONFIG PARKING BRAKE is not displayed.
- g. Ensure that when the test is completed that PASSED shows adjacent to TEST CONDITION on the MAT.

9. Remove power from the right hydraulic system.

10. Remove downlock pins in the nose and main landing gear.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-45-01A	Wheel Brakes "DISP.APPR.REQ'D."	N	12	10	C (O)(M) One per each six wheel truck may be inoperative provided: a) Associated brake is deactivated with a deactivation assembly, b) Performance decrements for brakes deactivated are applied, and c) Approach minimums do require their use. <u>CAT III</u> Not Authorized
32-45-01B	Wheel Brakes "DISP.APPR.REQ'D."	N	12	10	C (O)(M) One per each six wheel truck may be inoperative provided: a) Associated brake is deactivated by capping the brake line, b) After takeoff, gear remains down for two minutes before retraction, c) Performance decrements for brakes deactivated are applied, d) Takeoff performance is based on landing gear extended, and e) Approach minimums do require their use. <u>CAT III</u> Not Authorized
32-45-01C	Wheel Brakes "DISP.APPR.REQ'D."	N	12	10	C (O)(M) One per each six wheel truck may be removed from the center axle only provided: a) Associated brake line is capped, b) After takeoff, gear remains down for two minutes before retraction, c) Performance decrements for brakes deactivated are applied, d) Takeoff performance is based on landing gear extended, and e) Approach minimums do require their use. <u>CAT III</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-45-01A	Near Autobrake Switch	Wheel Brake(s) INOP
32-45-01B	Near Autobrake Switch	Wheel Brake(s) INOP
32-45-01C	Near Autobrake Switch	Wheel Brake(s) INOP

CONTINUED NEXT PAGE

(O) PROCEDURES

32-45-01A

32-45-01A	WHEEL BRAKES – BRAKE DEACTIVATION ASSEMBLY USED
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	None
NOTES	1. AWABS Takeoff Data is provided for DRY or SLP-WET runway conditions only. 2. Takeoffs using ICY, 25 CTR or 50 CTR data are not authorized.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-45-01A.

32-45-01B, 32-45-01C

For dispatch with brake line capped or brake removed:

1. After takeoff, leave the landing gear extended for a minimum of two minutes to allow the wheels to spin down prior to gear retraction.
2. Takeoff performance is based on Landing Gear Extended operation.

32-45-01B	WHEEL BRAKES – BRAKE LINE(S) CAPPED
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 1,900 lbs.
NOTES	1. AWABS Takeoff Data is provided for DRY or SLP-WET runway conditions only. 2. Takeoffs using ICY, 25 CTR or 50 CTR data are not authorized. 3. Brake Line Capped requires a significant weight penalty increase versus Brake Deactivation Assembly Used (32-45-01A).
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-45-01B.

CONTINUED NEXT PAGE

32-45-01C WHEEL BRAKES – BRAKE(S) REMOVED	
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 1,900 lbs.
NOTES	1. AWABS Takeoff Data is provided for DRY or SLP-WET runway conditions only. 2. Takeoffs using ICY, 25 CTR or 50 CTR data are not authorized. 3. Wheel Brake(s) removed requires a significant weight penalty increase versus Brake Deactivation Assembly Used (32-45-01A).
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-45-01C.

(M) PROCEDURES

32-45-01A

Deactivating the brake using the **Deactivation Assembly**:

1. Supply electrical power.
2. Install landing gear downlock pins.
3. Remove power on the right and center hydraulic systems.
4. Install chocks around the tires.
5. Release the parking brake.
6. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.
7. Use the Maintenance Access Terminal (MAT) to disable the EICAS advisory message ANTISKID for the associated brake. (Refer to AMM 45-10-00/201 for instructions on how to use MAT if unfamiliar.)

NOTE: The EICAS advisory message ANTISKID may reappear if airplane power is cycled or if power to AIMS is cycled. If this happens, repeat the deactivation procedure on the MAT.

8. Remove the brake deactivation assembly from its location on the Antiskid Shuttle Valve Module. The assembly is referred to as the Flight Dispatch Disconnect (specification number S294W121-51) vendor part number 80389.
9. Remove the cover from the applicable shuttle valve and install the deactivation assembly in place of the valve cover.
10. Pressurize the right hydraulic system.
11. Fully press the brake pedals. Make sure the applicable brake does not operate by observing brake piston movement.
12. Remove power on the right hydraulic system.
13. Remove landing gear downlock pins when maintenance and servicing actions are complete.

32-45-01B

Deactivating the brake by **Capping the Brake Line**:

1. Supply electrical power.
2. Install landing gear downlock pins.
3. Remove power on the right and center hydraulic systems.
4. Install chocks around the tires.
5. Release the parking brake.
6. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-33

7. Use the Maintenance Access Terminal (MAT) to disable the EICAS advisory message ANTISKID for the associated brake. (Refer to AMM 45-10-00/201 for instructions on how to use MAT if unfamiliar.)

NOTE: The EICAS advisory message ANTISKID may reappear if airplane power is cycled or if power to AIMS is cycled. If this happens, repeat the deactivation procedure on the MAT.

8. Uncouple the Brake Disconnect - Brake Hose Half and attach the hose to the landing gear truck using a suitable clamp or strap.

NOTE 1: The part of the Brake Disconnect that is attached to the hose is called the Brake Disconnect - Brake Hose Half. The part of the Brake Disconnect that is attached to the brake is called the Brake Disconnect - Coupling.

NOTE 2: The brake lines are self sealing, thus disconnecting the brake line and stowing represents capping.

9. Pressurize the right hydraulic system.
10. Apply brake pressure and check for leaks.
11. Make sure the applicable brake does not operate by observing brake piston movement.
12. Remove power on the right hydraulic system.
13. Remove landing gear downlock pins when maintenance and servicing actions are complete.

32-45-01C

Deactivating the brake by **Removal**:

1. Supply electrical power.
2. Install landing gear downlock pins.
3. Remove power on the right and center hydraulic systems.
4. Install chocks around the tires.
5. Release the parking brake.
6. Fully push the brake pedals 12 times to remove the pressure from the brake accumulator.
7. Use the Maintenance Access Terminal (MAT) to disable the EICAS advisory message ANTISKID for the associated brake. (Refer to AMM 45-10-00/201 for instructions on how to use MAT if unfamiliar.)

NOTE: The EICAS advisory message ANTISKID may reappear if airplane power is cycled or if power to AIMS is cycled. If this happens, repeat the deactivation procedure on the MAT.

8. Remove the applicable brake.
9. Attach the brake hose to the gear truck. This will ensure that the hose will not interfere with brake rotation when the gear is retracted.
10. Cap and stow the electrical wiring for the brake temperature sensor.
11. Ensure the brake sleeve is installed on the axle before the tire and wheel assembly are installed.
12. Install the tire and wheel assembly.
13. Pressurize the right hydraulic system.
14. Apply brake pressure and check for leaks.
15. Remove power on the right hydraulic system.
16. Remove landing gear downlock pins when maintenance and servicing actions are complete.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
32-45-02	Wheel Tie Bolts "Contact MCC"	N	-	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 tie bolts, and d) Operations are limited to five departures before repairs are made. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-45-02	Logbook	___ Wheel Tie Bolts Broken / Missing

(M) PROCEDURES

Remove the wheel and tire assembly, and inspect the wheel and brake assemblies for broken parts or damage. Inspect the wheel after each landing and replace the affected wheel after five departures.

1. On the main landing gear, deflate affected wheel to 40 psig or less.

CAUTION: You must deflate the tire before you remove the wheel and tire assembly. A defective wheel and tire can burst if you do not deflate the tire before you remove the assembly. Injury to persons or damage to equipment can occur.

2. On main landing gear, remove each wheel with a broken, loose or missing tiebolt.
3. Inspect the wheel for broken or missing parts or damage. On nose landing gear wheels, use a mirror to fully view the inboard side of the wheel.
4. If other bolts are broken, loose or missing, or if other areas of the wheel have been damaged, the affected wheel is to be replaced.
5. On main landing gear, inspect the brake for broken or missing parts or damage. If parts are missing or damage is found, the affected brake is to be replaced or deactivated (MEL Item 32-45-01).
6. On main landing gear re-install the affected wheel.
7. Inflate tire to correct pressure.

NOTE: Do not move the airplane while the tire is deflated. If the airplane is moved, the deflated tire and associated wheel, and the wheel and tire on the opposite side of the axle must be replaced.

8. AFTER EACH LANDING (up to 5 maximum), inspect remaining tiebolts on the affected wheel (wheel removal not required) to ensure no other bolts are broken, loose or missing. The affected wheel is to be replaced if discrepant tiebolts are found.
9. Replace the affected wheel after a maximum of 5 subsequent landings.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-35

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-45-03	Integral Tire Pressure Indicators (Wheel Mounted)	N	14	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-45-03	Logbook	___ Integral Tire Pressure Indicator(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-45-04	Nose Gear Spin Brakes "DISP.APPR.REQ'D."	N	2	0	C (O) May be inoperative or missing provided after takeoff, gear remains down for two minutes before retraction.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-45-04	Near Landing Gear Handle	___ Nose Gear Spin Brake(s) INOP

(O) PROCEDURES

NOTE: It is not necessary to apply landing gear extended takeoff performance adjustments.

1. After takeoff, leave the landing gear extended for a minimum of two minutes prior to gear retraction.
2. In case of engine failure after V1, landing gear should be retracted after takeoff.

32-45-04	NOSE GEAR SPIN BRAKES
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 1,900 lbs.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	Manual WDR not permitted with MEL 32-45-04.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-37

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-46-01	Brake Temperature Monitor System (BTMS) "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided AFM Maximum Quick Turnaround Weight Limitations are observed. Refer to ODM, Abnormal section. NOTE: Any portion of the system that operates normally may be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-46-01	Center Display Control Panel	BTMS INOP

(O) PROCEDURES

Refer to Remarks or Exceptions Column.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-38

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-49-01	Tire Pressure Indication System (TPIS) (-200LR)	Y	1	0 D	May be inoperative provided procedures do not require its use.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-49-01	Center Display Control Panel	Tire Pressure Indication System INOP

MAINTENANCE NOTE:

If desired, Tire Pressure Indication System (TPIS) may be deactivated by pulling and securing P110 panel LG TIRE PRESSURE INDICATOR circuit breaker. If (TPIS) is to be deactivated, Maintenance is Required and Flight Crew May **Not** Placard.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-53-01	Main Gear Steering System (Including Indication)	N	1	0	C (O)(M) May be inoperative provided: a) Both main gear steering actuators are verified locked in the center position, and b) Main gear steering system is deactivated.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-53-01	Near Both Nose Wheel Steering Tillers	Main Gear Steering System INOP

(O) PROCEDURES

- There is negligible change in U-turn widths if the Delta B777 Flight Crew Training Manual Pivot Turn procedure is used.
- Minimum radius turns will result in the following effects:
 - Substantially increased tire scuffing.
 - Increased thrust required for the turn.
 - Somewhat rougher cabin ride, particularly in the area above the main gear.
 - Increased risk of damage to Main Landing Gear Hydraulic Line Forward Support Link Assembly.

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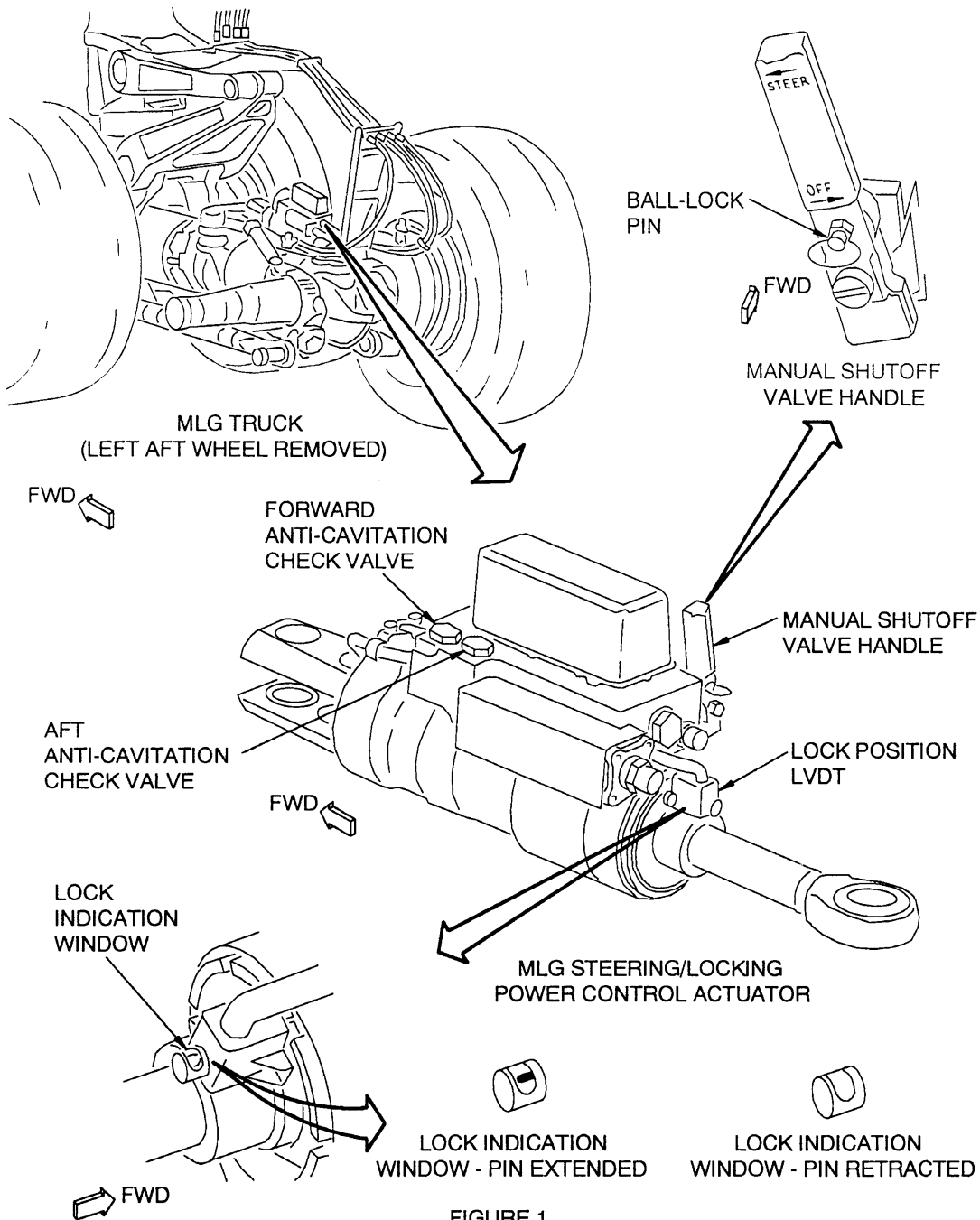


FIGURE 1
MLG STEERING/LOCKING POWER CONTROL ACTUATOR

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-41

(M) PROCEDURES

1. Verify left and right main gear steering Power Control Actuators (PCA) are locked in the centered position.
 - a. Look through the lock indication window on each PCA and make sure you cannot see a metal pin. If the metal pin is not visible on a PCA, that PCA is locked. If both PCAs are locked, proceed to Step 3.
 - b. If the metal pin is visible on either PCA, it is not locked. Use one of the methods under Step 2 below to move the unlocked PCA into the locked position.
2. Use either the Push Back or the Check Valve Bleeding methods below to move an unlocked PCA in to the locked position.
 - a. Push Back Method (Preferred Method)

NOTE: This method pushes the unlocked aft axle against a chock to force the PCA to the locked position. It also includes a method to apply a force to pull the PCA to the locked position, however the force that pushes the PCA will, in most cases, lock the PCA. This is due to the lock routine used by the main gear steering system.

- 1) Connect a tow vehicle to the nose landing gear or forward tow fitting on the affected main landing gear.
- 2) Move the towing lever, on the forward side of the nose landing gear, to the TOW position.

NOTE: This action isolates the steering system for the nose landing gear from hydraulic power.

- 3) Release the parking brake.
- 4) Move the manual shutoff valve handle on the unlocked PCA to the OFF position to isolate the PCA.
- 5) Remove all chocks from around the nose landing gear tires and the main landing gear tires.
- 6) Put a chock behind the aft axle tire that is nearest the unlocked PCA (wheel #10 on the left gear, wheel #12 on the right gear).

NOTE: Do not put a chock behind the other aft axle tire (wheel #9 on the left gear, wheel #11 on the right gear).

- 7) Make sure the area around the tires of the aft axle is clear of people and equipment.
- 8) Use the tow vehicle to slowly push the airplane rearwards onto the chock. Stop airplane movement if the airplane tire moves onto the chock, the PCA locks, or the chock moves.

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF LANDING GEAR WHEN THE TOW VEHICLE MOVES THE AIRPLANE. IF THE AREA IS NOT CLEAR DAMAGE TO EQUIPMENT OR INJURY TO PERSONS CAN RESULT.

- 9) Make sure the metal pin is not visible in the lock indication window on the PCA.

NOTE: You will not be able to see any portion of the pin if the PCA is locked in the center position.

- 10) If a PCA remains unlocked, place a chock behind the aft axle tire that is farthest from the unlocked PCA, but on the same truck (wheel #9 on the left gear, wheel #11 on the right gear). Repeat steps 8) and 9) above.

NOTE: Do not place a chock behind the other aft axle tire (wheel #10 on the left gear, wheel #12 on the right gear).

- 11) If both PCAs are locked, proceed to Step 3 and deactivate the main gear steering system. If either PCA will not lock using the Push Back method, attempt to lock the unlocked PCA using the Check Valve Bleeding method.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-42

b. Check Valve Bleeding Method

- 1) Using this method may void the warranty of the MLG steering actuators and may only be accomplished under the direction of the Maintenance Control Center. Contact the B777 Maintenance Coordinator for a copy of the MLG steering actuator Check Valve Bleeding Method (copy located in B777 DDG which can be obtained from Delta MEL Group or Boeing). Accomplish Check Valve Bleeding Method and proceed to Step 3.

3. Deactivate the main gear steering system.

a. Shutoff hydraulic power to both PCAs.

- 1) Pull the ball-lock pin, on the handle for the manual shutoff valve, aft.
- 2) Move the handle for the manual shutoff valve to the OFF position.
NOTE: This isolates the steering/locking PCA from hydraulic power.
- 3) Release the ball-lock pin to hold the handle in the OFF position.

b. Pull and secure P110 panel LG MAIN GEAR STEERING circuit breaker.

NOTE: Removing power from the Main Gear Steering Control Unit (MGSCU) will replace correlated maintenance messages with correlation to maintenance message 32-68840.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-61-01A	Truck Tilt Sensors	N	4	0	C (O)(M) May be inoperative provided the nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors are verified to operate normally ONCE EACH FLIGHT DAY. (Log Book Entry Required) Repetitive Check Required (Yellow Placard)
32-61-01B	Nose Gear Not-Compressed Sensors (PSEU 1)	N	1	0	C (M) May be inoperative provided: a) Nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors are verified to operate normally ONCE EACH FLIGHT DAY. (Log Book Entry Required), and b) PSEU-2 operates normally. Repetitive Check Required (Yellow Placard)
32-61-01C	Nose Gear Not-Compressed Sensors (PSEU 2)	N	1	0	C (M) May be inoperative provided: a) Nose gear lock, nose gear down, main gear side brace and main gear drag brace sensors are verified to operate normally ONCE EACH FLIGHT DAY (Log Book Entry Required), b) Left equipment cooling controller operates normally, and c) PSEU-1 operates normally. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-61-01A	Near Landing Gear Handle	Truck Tilt Sensors
32-61-01B	Near Landing Gear Handle	___ Nose Gear Not-Compressed PSEU Sensor INOP
32-61-01C	Near Landing Gear Handle	___ Nose Gear Not-Compressed PSEU Sensor INOP

(O) PROCEDURES

32-61-01A

NOTE: An inoperative truck tilt sensor will also result in the AUTO SPEEDBRAKE advisory and status EICAS messages being displayed. The AUTO SPEEDBRAKE EICAS messages may not display until all three hydraulic systems are pressurized.

After takeoff manually move the autobrake selector from RTO to OFF.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-44

(M) PROCEDURES

32-61-01A

NOTE: An inoperative truck tilt sensor will also result in the AUTO SPEEDBRAKE advisory and status EICAS messages being displayed. The Automatic Speedbrake Function must also be [deferred per MEL 27-62-01](#). The AUTO SPEEDBRAKE EICAS messages may not display until all three hydraulic systems are pressurized.

ONCE EACH FLIGHT DAY - Verify the following sensors operate normally:

1. Display the Landing Gear Actuation maintenance page.
2. Confirm both Nose Gear Lock sensors are NEAR.
3. Confirm both Nose Gear Down sensors are NEAR.
4. Confirm all four Main Gear Side Brace sensors are NEAR.
5. Confirm all four Main Gear Drag Brace sensors are NEAR.

32-61-01B, 32-61-01C

ONCE EACH FLIGHT DAY - Verify the following sensors operate normally:

1. Display the Landing Gear Actuation maintenance page.
2. Confirm both Nose Gear Lock sensors are NEAR.
3. Confirm both Nose Gear Down sensors are NEAR.
4. Confirm all four Main Gear Side Brace sensors are NEAR.
5. Confirm all four Main Gear Drag Brace sensors are NEAR.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-45

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-61-02	Landing Gear Door Position Sensors	N	6	3	C (M) One per gear (nose, left main, right main) may be inoperative provided sensor is failed in the door not closed position.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-61-02	Near Landing Gear Handle	___ Landing Gear Door Position Sensor(s) INOP

(M) PROCEDURES

1. Display the Landing Gear Actuation maintenance page and confirm the affected sensor is target FAR or blank.
2. If the affected sensor is target NEAR, disconnect, cap and stow the connector from the affected door sensor.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-61-03	Landing Gear Uplock Position Sensors	N	6	3 C	(M) One per gear may be inoperative provided the sensor is failed in the unlocked position and the associated landing gear door position sensors operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
32-61-03	Near Landing Gear Handle	___ Landing Gear Uplock Position Sensor(s) INOP

(M) PROCEDURES

1. Display the Landing Gear Actuation maintenance page and confirm the affected uplock sensor is target FAR or blank.
2. If the affected sensor is target NEAR, disconnect, cap and stow the connector from the affected gear uplock sensor.

	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-47

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
32-71-01	Tail Strike Detector Channels	Y	2	1 C	

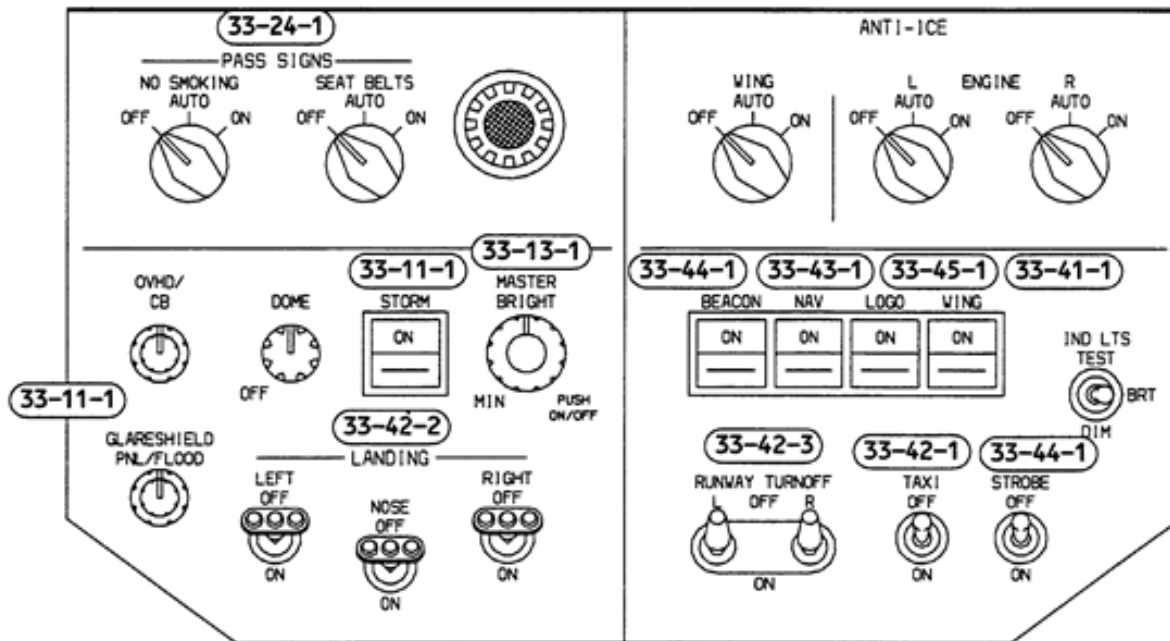
MEL ITEM	TAB LOCATION	PLACARD TEXT
32-71-01	Near Landing Gear Handle	___ Tail Strike Detector Channel INOP

 DELTA	B777 Minimum Equipment List	ATA 32 Landing Gear	R14 05/09/16 Page 32-48

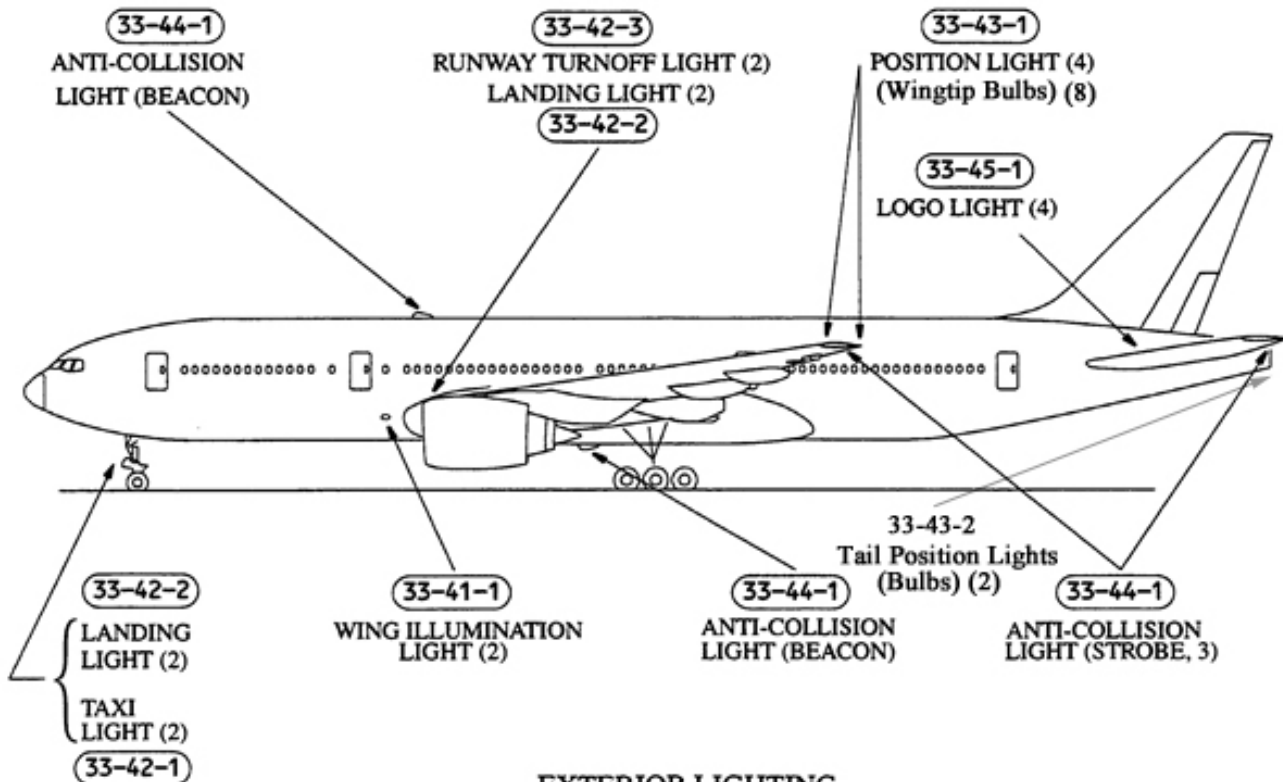
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ATA 33 Contents

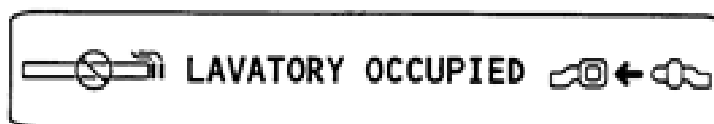
33-11-01A	Flight Compartment and Instrument Lighting System	33-5
33-11-01B	Flight Compartment and Instrument Lighting System (STORM Switch ON Light)	33-5
33-13-01	Master Brightness Control	33-6
33-16-01	Master Dim and Test System	33-7
33-21-01	Cabin Interior Illumination	33-8
	PASSENGER INFORMATION SIGNS (NO SMOKING / FASTEN SEAT BELT / RETURN TO SEAT SIGNS)	33-9
33-24-01A	Passenger Information Signs (No Smoking / Fasten Seat Belt / Return To Seat Signs)	33-9
33-24-01D	Flight Deck Automatic Function	33-9
33-24-01E	Crew/Attendant Rest Areas	33-9
	PASSENGER INFORMATION SIGNS (NO SMOKING / FASTEN SEAT BELT / RETURN TO SEAT SIGNS)	33-10
33-24-01F	Aural Tone Function	33-10
33-31-01	Main Wheel Well and Nose Wheel Well Service Area Lights	33-12
33-31-02	Cargo Loading Area Lights	33-13
33-37-01	Cargo Compartment Lights	33-14
33-41-01A	Wing Illumination Lights	33-15
33-41-01B	Wing Illumination Lights (WING Switch ON Light)	33-15
33-42-01	Taxi Lights	33-16
33-42-02A	Landing Lights	33-17
33-42-02C	Dim Function	33-17
33-42-03	Runway Turnoff Lights	33-18
33-43-01A	Position Lights (Wingtip Bulbs)	33-19
33-43-01C	Position Lights (NAV Switch ON Light)	33-19
33-43-02	Tail Position Lights (Bulbs)	33-20
33-44-01A	Anti-Collision Light Systems (Red Strobes / White Strobes)	33-21
33-45-01A	LOGO Lights	33-22
33-45-01B	LOGO Lights (LOGO Switch ON Light)	33-22
33-51-01	Interior Emergency Lights	33-23
33-51-02A	Exterior Emergency Slide Lights	33-24
33-51-03	Emergency Floor Proximity Lighting Systems	33-25



LIGHTING CONTROL PANEL (P5)

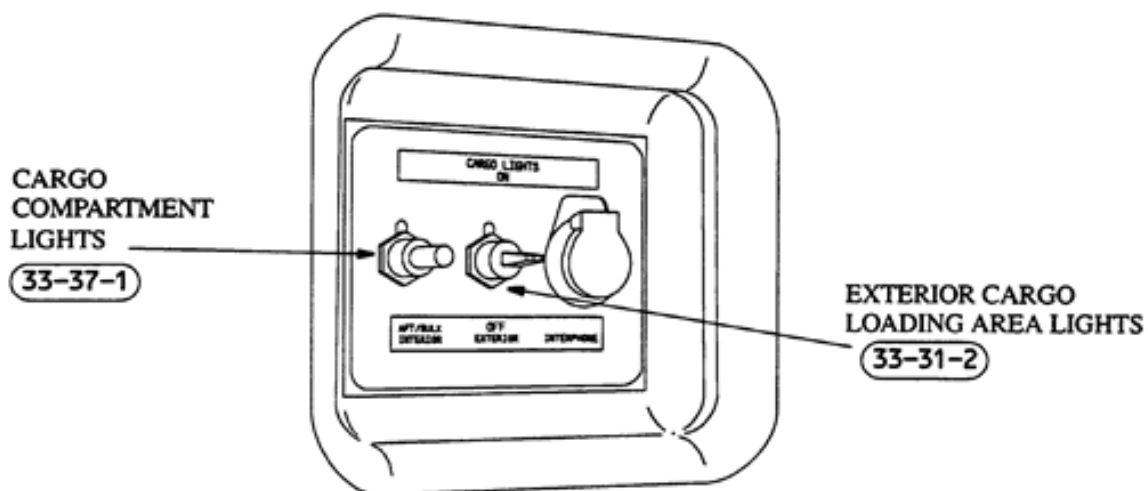


EXTERIOR LIGHTING

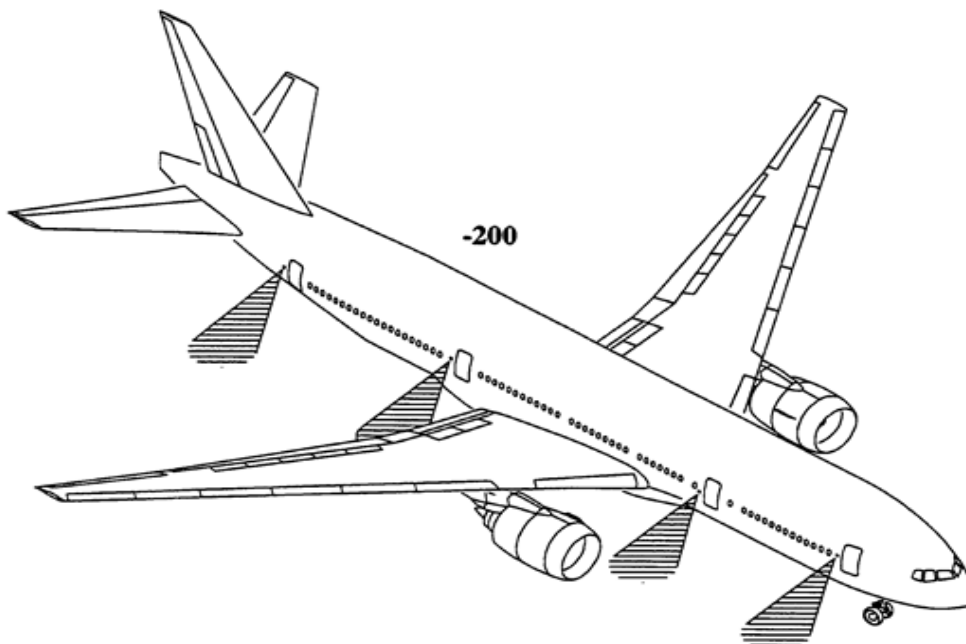
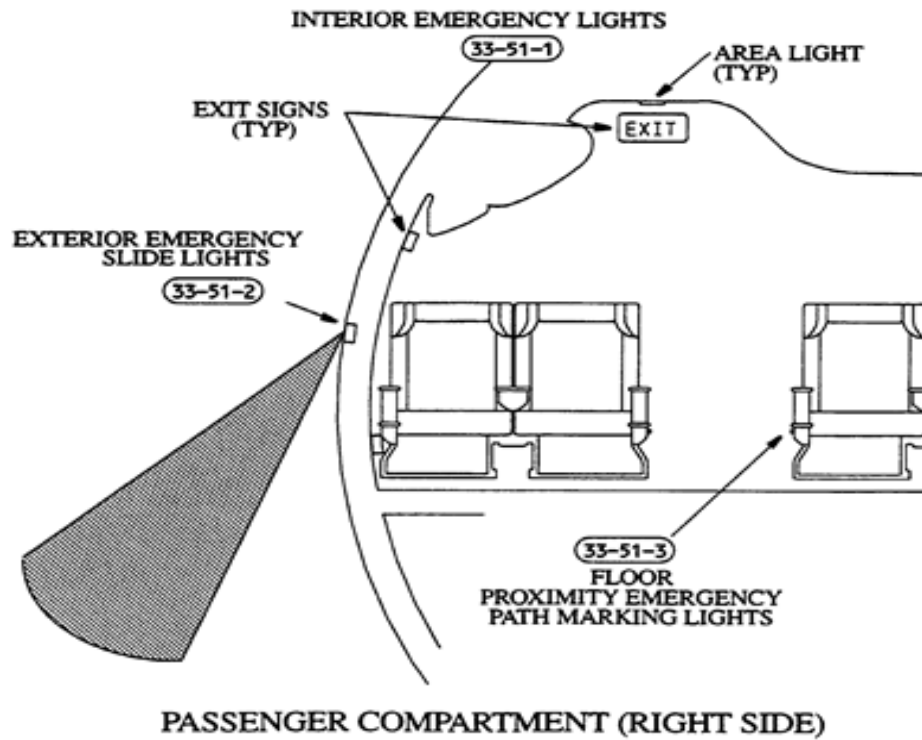


33-24-1

PASSENGER NOTICE SYSTEM



CARGO COMPARTMENT LIGHT CONTROLS



EXTEROR EMERGENCY SLIDE LIGHTS
(33-51-2)

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-11-01A	Flight Compartment and Instrument Lighting System	Y	-	-	C Individual lights or light controls may be inoperative provided: a) Remaining lighting system lights are sufficient to clearly illuminate all required instruments, controls, and other devices for which it is provided, b) Remaining lighting system lights are positioned so that direct rays are shielded from flight crew eyes, c) Lighting configuration and intensity is acceptable to the flight crew, and d) Captain's emergency dome light operates normally. NOTE: Individual button/switch lights and/or annunciations/indications are excluded from this relief.
33-11-01B	Flight Compartment and Instrument Lighting System (STORM Switch ON Light)	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-11-01A	Near Associated Lighting Control	___ Cockpit Lighting INOP
33-11-01B	Near Associated Lighting Control	Cockpit Lighting STORM Switch ON Light INOP

OPERATIONS and MAINTENANCE NOTE:

This MEL relief applies only to flight compartment and instrument lights; it does NOT apply to warning, caution or advisory lights, or cockpit emergency lights.

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-6

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-13-01	Master Brightness Control	Y	1	0 C	May be inoperative provided the master brightness control switch is selected OFF.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-13-01	Near MASTER BRIGHT Switch	Master Brightness Control INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-16-01	Master Dim and Test System "Contact MCC"	Y	1	0	B Dim function may be inoperative provided: a) TEST and BRT functions operate normally, and b) Light intensity is acceptable to the flight crew.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-16-01	Near IND LTS TEST Switch	Master Dim and Test System INOP

OPERATIONS NOTE:

Only a portion of the flight deck annunciator lights may be affected. The light intensity must be deemed acceptable by each flight crew.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-21-01	Cabin Interior Illumination "DISP.APPR.REQ'D."	Y	-	-	C Individual lights may be inoperative provided: a) Sufficient lighting remains for crew members to perform their duties, and b) For night operations beyond 60 minutes of landing at a suitable airport, at least 75% of the standby lights operate normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-21-01	CSCP and/or CACPs	___ Cabin Lighting INOP



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PASSENGER INFORMATION SIGNS (NO SMOKING / FASTEN SEAT BELT / RETURN TO SEAT SIGNS)					
33-24-01A	Passenger Information Signs (No Smoking / Fasten Seat Belt / Return To Seat Signs) "DISP.APPR.REQ'D."	Y	-	-	C (M) May be inoperative provided: a) Associated passenger seat(s), or lavatory(s) is not occupied from which a No Smoking / Fasten Seat Belt / Return To Seat sign is not readily legible, and b) Associated seat(s) or lavatory(s) must be blocked and placarded - DO NOT OCCUPY. NOTE: These provisos are not intended to prohibit lavatory use or inspections by crewmembers.
33-24-01B	Passenger Information Signs (No Smoking / Fasten Seat Belt / Return To Seat Signs)	Y	-	-	C (O) May be inoperative and the associated passenger seat(s) or lavatory(s) may be occupied provided: a) PA system operates normally and can be clearly heard throughout the cabin during flight, and b) PA system is used to alert the cabin crew and to notify passengers when seat belts should be fastened, when smoking is prohibited, and when passengers should return to seats.
33-24-01C	Passenger Information Signs (No Smoking / Fasten Seat Belt / Return To Seat Signs) "DISP.APPR.REQ'D."	Y	-	0	C (O) May be inoperative or missing provided: a) No passengers are carried, b) A maximum of 19 persons authorized by 14 CFR (121-583) for non-passenger carrying operations are carried, and c) Captain will brief persons authorized to be carried on flight about safety and evacuation procedures.
33-24-01D	Flight Deck Automatic Function	Y	2	0	C (O) May be inoperative provided: a) Manual control function operates normally, and b) Flight crewmembers refer to FOM, Operational Policy, Communications, Seat Belt Sign Usage.
33-24-01E	Crew/Attendant Rest Areas	Y	-	0	C (O) May be inoperative provided: a) Captain briefs the Purser / FL that the No Smoking / Fasten Seat Belt / Return To Seat Signs are inoperative in the affected Crew Rest Area(s), and b) Verbal notification of the occupants will be required when the No Smoking / Fasten Seat Belt / Return To Seat Signs are turned ON or OFF.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
PASSENGER INFORMATION SIGNS (NO SMOKING / FASTEN SEAT BELT / RETURN TO SEAT SIGNS)					
33-24-01F	Aural Tone Function	Y	1	0	C (O) May be inoperative provided flight crewmembers refer to FOM, Operational Policy, Communications, Seat Belt Sign Usage.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-24-01A	PASS SIGNS Panel	___ No Smoking / Fasten Seat Belt Sign INOP
33-24-01B	PASS SIGNS Panel	___ No Smoking / Fasten Seat Belt Sign INOP
33-24-01C	PASS SIGNS Panel	___ No Smoking / Fasten Seat Belt Sign INOP
33-24-01D	PASS SIGNS Panel	___ No Smoking / Fasten Seat Belt AUTO Function INOP
33-24-01E	PASS SIGNS Panel	___ Rest Area No Smoking / Fasten Seat Belt Sign INOP
33-24-01F	PASS SIGNS Panel	___ No Smoking / Fasten Seat Belt Aural Tone Function INOP

(O) PROCEDURES

33-24-01B

Refer to REMARKS or EXCEPTIONS section on Page 33-9.

33-24-01C

Refer to REMARKS or EXCEPTIONS section on Page 33-9.

33-24-01D, 33-24-01F

Refer to REMARKS or EXCEPTIONS section on Page 33-9 and Page 33-10 respectively.

33-24-01E

Refer to REMARKS or EXCEPTIONS section on Page 33-9.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-11

(M) PROCEDURES

33-24-01A

NOTE: A sign is considered readily legible if enough of the sign can be seen to identify it. For example, NO SMOK and FASTEN SEAT B would be considered readily legible.

Block and placard associated seat or close and lock associated lavatory.

1. If required, tapes or ropes of conspicuous contrasting colors must be installed to block access to unusable seats prior to boarding of passengers.
2. Conspicuous signs or placards shall be placed in appropriate locations to indicate seats which are not to be occupied by passengers.
3. For an associated lavatory, close and lock the lavatory door.

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-12

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-31-01	Main Wheel Well and Nose Wheel Well Service Area Lights	Y	-	0 C	NOTE: Relief for the Air Conditioning Compartment, APU Compartment, Stabilizer Compartment and Electrical Equipment Center) Service Area Lights is available per the NEF deferral program. Refer to MEL 25-20-01.

EICAS STATUS MESSAGES

None

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-31-01	Exterior Light Control Panel	___ Wheel Well Service Light(s) INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-13

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-31-02	Cargo Loading Area Lights	Y	11	0 D	

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-31-02	Light Control Panel	___ Cargo Loading Area Light(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-37-01	Cargo Compartment Lights	Y	-	-	C Individual lights may be inoperative provided sufficient lighting remains for ground personnel to perform their duties.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-37-01	Exterior Light Control Panel	___ Cargo Compartment(s) Light INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-15

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
33-41-01A	Wing Illumination Lights "DISP.APPR.REQ'D."	Y	2	0	C	May be inoperative provided ground de-icing procedures do not require their use.
33-41-01B	Wing Illumination Lights (WING Switch ON Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-41-01A	Exterior Light Control Panel	___ Wing Illumination Light(s) INOP
33-41-01B	Exterior Light Control Panel	Wing Illumination Lights WING Switch ON Light INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-16

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-42-01	Taxi Lights	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-42-01	Exterior Light Control Panel	___ Taxi Light(s) INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
33-42-02A	Landing Lights	Y	4	2	C	
33-42-02B	Landing Lights "DISP.APPR.REQ'D."	Y	4	0	C	May be inoperative for day operations.
33-42-02C	Dim Function	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-42-02A	Exterior Light Control Panel	___ Landing Light(s) INOP
33-42-02B	Exterior Light Control Panel	___ Landing Light(s) INOP
33-42-02C	Exterior Light Control Panel	___ Landing Light(s) Dim Function INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-18

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-42-03	Runway Turnoff Lights	Y	2	0 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-42-03	Exterior Light Control Panel	___ Runway Turnoff Light(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
33-43-01A	Position Lights (Wingtip Bulbs)	Y	8	4	C	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 bulb per wing tip.
33-43-01B	Position Lights (Wingtip Bulbs) “DISP.APPR.REQ’D.”	Y	8	0	C	May be inoperative for day operations.
33-43-01C	Position Lights (NAV Switch ON Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-43-01A	Exterior Light Control Panel	___ Position Light(s) INOP
33-43-01B	Exterior Light Control Panel	___ Position Light(s) INOP
33-43-01C	Exterior Light Control Panel	Position Lights NAV Switch ON Light INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-20

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
33-43-02	Tail Position Lights (Bulbs)	Y	2	0	D		

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-43-02	Exterior Light Control Panel	___ Tail Light(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
33-44-01A	Anti-Collision Light Systems (Red Strobes / White Strobes)	Y	2	1	C	Upper and lower red fuselage lights may be inoperative provided wing tip and tail white strobe lights operate normally.
33-44-01B	Anti-Collision Light Systems (Red Strobes / White Strobes)	Y	2	1	C	Wing tips and tail white strobe lights may be inoperative provided upper and lower red fuselage lights operate normally.
33-44-01C	Anti-Collision Light Systems (Red Strobes / White Strobes) "DISP.APPR.REQ'D."	Y	2	0	C	May be inoperative for day operations.
33-44-01D	Anti-Collision Light Systems (BEACON Switch ON Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-44-01A	Exterior Light Control Panel	Upper and Lower Anti-Collision Lights INOP
33-44-01B	Exterior Light Control Panel	Wing Tip and Tail White Strobe Light(s) INOP
33-44-01C	Exterior Light Control Panel	___ Anti-Collision / Strobe Light(s) INOP
33-44-01D	Exterior Light Control Panel	Anti-Collision Light System BEACON Switch ON Light INOP

OPERATIONS NOTE:

The number "2" in the "Number Installed" column refers to number of systems installed, not individual light assemblies. Three white strobe lights form one system and two red strobe lights form another system. If some but not all lights are inoperative in a system, the remaining operative lights may be used by selecting the associated switch ON.

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-22

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO. NAME / DESCRIPTION						REMARKS OR EXCEPTIONS
33-45-01A	LOGO Lights	Y	4	0	D	
33-45-01B	LOGO Lights (LOGO Switch ON Light)	Y	1	0	D	

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-45-01A	Exterior Light Control Panel	___ LOGO Light(s) INOP
33-45-01B	Exterior Light Control Panel	LOGO Lights LOGO Switch ON Light INOP

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-23

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-51-01	Interior Emergency Lights	Y	-	-	C
					A random 25% of lights / signs may be inoperative provided: a) Inoperative area illumination lights are not adjacent, b) Not more than one overhead area light or exit sign at each door is inoperative, c) Cross-aisle exit signs operate normally, and d) Flight deck emergency dome light operates normally. NOTE: Lights associated with an inoperative door or slide/raft are not required.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-51-01	Near Emergency Lighting Switch	___ Interior Emergency Light(s) INOP

OPERATIONS NOTE:

The following are the minimum FAA dispatch requirements for the lights listed to be considered to operate normally:

1. Door exit sign - At least 9 of 12 lamps in each door exit sign must be operative.
2. Center cross-aisle exit signs - At least 9 of 12 lamps in each center cross-aisle exit sign must be operative.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
33-51-02A	Exterior Emergency Slide Lights "DISP.APPR.REQ'D."	Y	-	0	C	May be inoperative for day operations.
33-51-02B	Exterior Emergency Slide Lights "DISP.APPR.REQ'D."	Y	8	7	A	May be inoperative provided: a) Associated passenger entry door is considered inoperative and deferred per MEL 52-11-01, and b) Repairs are made within one flight day.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-51-02A	Near Emergency Lighting Switch	___ Exterior Emergency Slide Light(s) INOP
33-51-02B	Near Emergency Lighting Switch	___ Exterior Emergency Slide Light INOP

MAINTENANCE and OPERATIONS NOTE

33-51-02B

Refer to [MEL item 52-11-01](#) for dispatch with passenger entry door inoperative. (Ref. ALM, Section 477.)

	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-25

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
33-51-03	Emergency Floor Proximity Lighting Systems	Y	-	-	C A random 25% of lights may be inoperative provided: a) Inoperative floor proximity lights are not adjacent, b) All red floor proximity lights operate normally, and c) At least one exit identifier at each door operates normally. NOTE: Lights associated with an inoperative door or slide/raft are not required.

MEL ITEM	TAB LOCATION	PLACARD TEXT
33-51-03	Near Emergency Lighting Switch	___ Emergency Floor Proximity Lighting System INOP

OPERATIONS and MAINTENANCE NOTE:

1. Floor proximity lights (white/red) are mounted on passenger seats, galleys, closets, partitions and lavatories. Floor proximity lights with at least one operative lamp are considered to operate normally.
2. Door exit identifiers with at least two operative lamps are considered to operate normally.

 DELTA	B777 Minimum Equipment List	ATA 33 Lights	R14 05/09/16 Page 33-26

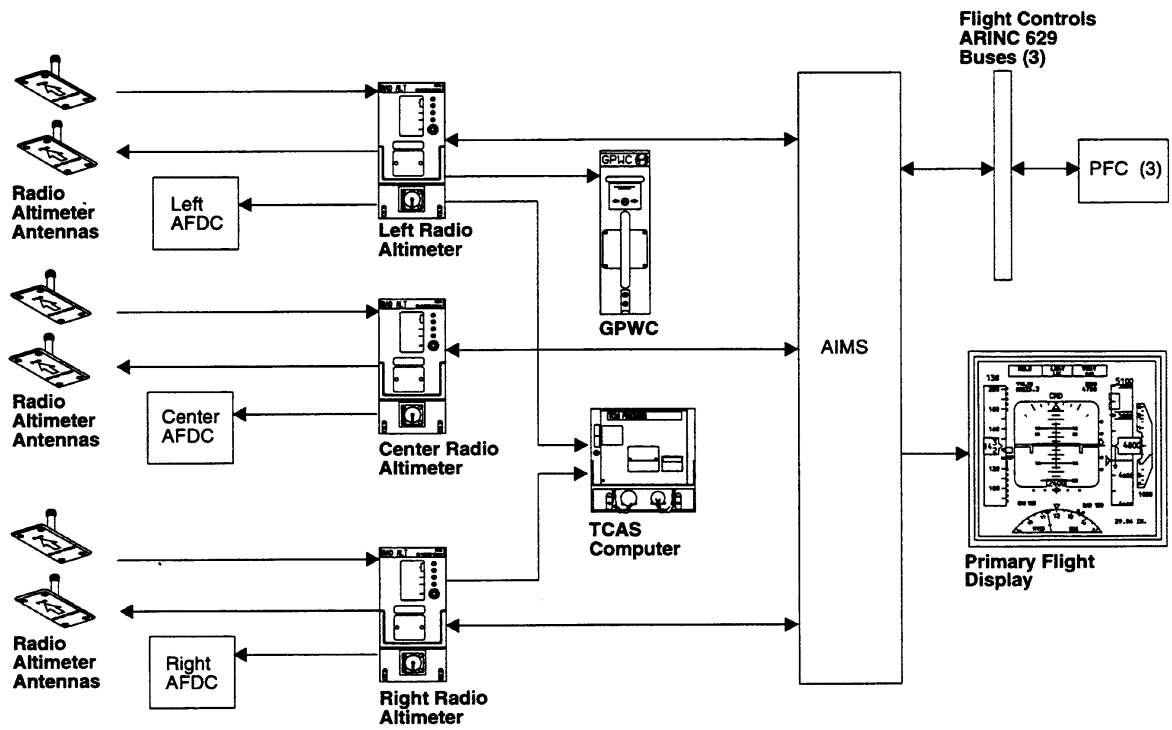
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ATA 34 Contents

34-00-00L	LLM Category II/III Status (Lower Landing Minimums).....	34-6
34-00-04R	RNP-4 Status	34-7
34-00-10R	RNP-10 Status	34-8
34-12-01A	Mach Indications	34-9
34-12-02	True Airspeed Indications	34-10
34-16-01A	Altitude Alerting System	34-11
34-16-01B	Aural Alert.....	34-11
34-16-01C	Visual Alert	34-11
34-21-02	Static Air Temperature (SAT) Indication	34-12
34-21-03A	Air Data Inertial Reference Unit (ADIRU) ADIRU Faults.....	34-13
34-21-03C	Air Data Inertial Reference Unit (ADIRU) (ON BAT Light)	34-13
34-21-03D	ADIRU Switch Lights (OFF Light)	34-13
34-21-03E	ADIRU Switch Lights (ON Light)	34-13
	PITOT AIR DATA MODULES (PRIMARY - ARINC 629).....	34-15
34-21-04A	Right Pitot Air Data Module	34-15
34-21-04B	Left Pitot Air Data Module	34-16
34-21-04C	Center Pitot Air Data Module	34-17
	STATIC AIR DATA MODULES (PRIMARY - ARINC 629).....	34-20
34-21-05A	Right Static Air Data Module	34-20
34-21-05B	Left Static Air Data Module	34-20
34-21-05C	Center Static Air Data Module.....	34-21
34-21-06	Angle of Attack (AOA) Vane Systems.....	34-24
34-21-07	Secondary Attitude Air Data Reference Unit (SAARU) (With Integrated Standby Flight Display Installed)	34-25
	INTEGRATED STANDBY FLIGHT DISPLAY (ISFD)	34-26
34-21-08A	(ISFD) Attitude Indication	34-26
34-21-08B	(ISFD) Airspeed Indication	34-26
34-21-08C	(ISFD) Approach Mode	34-26
34-21-08D	(ISFD) Heading Display.....	34-26
34-21-08E	(ISFD) Switch Lights.....	34-26
34-23-01	Non-Stabilized Magnetic Compass (Standby)	34-28
34-24-01	Standby Attitude Indicator (Non-ISFD System)	34-29
34-31-01A	Instrument Landing System (ILS).....	34-30
34-31-02A	Glideslope Antenna Switching	34-31
34-31-03A	Localizer Antenna Switching	34-32
34-32-01	Marker Beacon System.....	34-33
34-33-01	Radio Altimeter Systems.....	34-34
34-43-01A	Weather Radar System	34-35
	WEATHER RADAR SYSTEM.....	34-36
34-43-01D	Predictive Windshear Function	34-36
34-43-01F	Auto Tilt Function	34-36
	TRAFFIC COLLISION AND AVOIDANCE SYSTEM (TCAS)	34-38
34-45-01A	Traffic Collision and Avoidance System (TCAS).....	34-38
34-45-01B	Resolution Advisory (RA) Display Systems	34-38
34-45-01D	Traffic Alert (TA) Display Systems	34-38
34-45-01E	Audio Functions.....	34-38

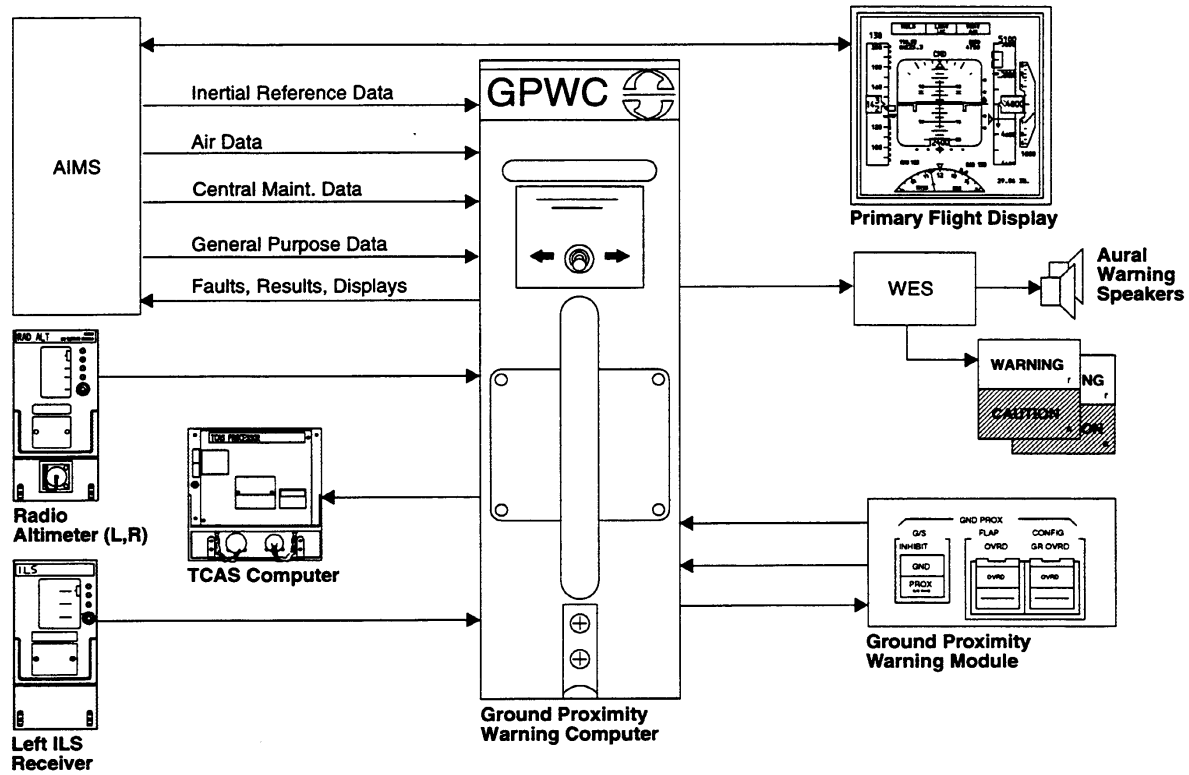
 DELTA	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-2

34-45-01F	Airspace Selection Function	34-38
	GROUND PROXIMITY WARNING SYSTEM (GPWS)	34-39
34-46-01A	GPWS Function	34-39
34-46-01B	Modes 1-4	34-39
34-46-01C	Glideslope Deviation (Mode 5).....	34-39
	GROUND PROXIMITY WARNING SYSTEM (GPWS)	34-40
34-46-01D	Advisory Callouts (Mode 6).....	34-40
34-46-01E	Reactive Windshear Alert Mode (Mode 7)	34-40
	GROUND PROXIMITY WARNING SYSTEM (GPWS)	34-41
34-46-01G	Terrain Awareness Function (EGPWS / Enhanced)	34-41
34-46-01H	Terrain Display Functions	34-41
34-51-01	VOR Navigation Systems.....	34-43
34-53-01A	ATC Transponder and Automatic Altitude Reporting Systems.....	34-44
34-53-01C	Mode S Elementary and Enhanced Downlink Aircraft Reportable Parameters.....	34-44
34-53-01D	ADS-B Extended Squitter Transmissions	34-44
34-55-01	Distance Measuring Equipment (DME).....	34-45
34-57-01A	ADF Systems	34-46
34-58-01A	Global Positioning Systems (GPS)	34-47
34-61-01A	Flight Management Computing Systems (FMCS)	34-48
34-61-01C	Navigation Databases	34-48
34-61-02	FMC Selector	34-50
34-61-03A	Control Display Units (CDU) (Passenger).....	34-51
34-61-03B	Control Display Units (CDU) (DSPY, MSG, OFST and EXEC Lights)	34-51
34-61-03C	Control Display Units (CDU) (Line Select Lights, Function Lights, Execute Lights, Alpha/Numeric Lights and Miscellaneous Key Lights)	34-51



Radio Altimeter System

34-33-1



Ground Proximity Warning System

34-46-1

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
34-00-00L	LLM Category II/III Status (Lower Landing Minimums) "DISP.APPR.REQ'D." Administrative Control Item	N	-	-
				(O)(M) Aircraft restricted to CAT I due to AMT is non-AFQ authorized. NOTE: This Item Number is only used for restricting the CAT II/III status of the aircraft and MCC authorization is required prior to its usage or removal. <u>CAT II/III</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-00-00L	Adjacent to each PFD	CAT II/III NOT AUTHORIZED

(O) PROCEDURES

CAT II - Not Authorized.
CAT III - Not Authorized.

(M) PROCEDURES

1. The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
2. The deferral code LLM must also be entered on the log page and the placard when deferring this item.
3. MCC authorization is required prior to its usage or removal.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
34-00-04R	RNP-4 Status "DISP.APPR.REQ'D." Administrative Control Item	N	-	(O)(M) Authorized by MCC when: a) RNP-4 airspace operations cannot be used, and b) No specific MEL item applies. NOTE: This Item Number is only used for restricting the RNP-4 status of the aircraft and MCC authorization is required prior to its usage or removal. <u>RNP-4 Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-00-04R	Adjacent to each PFD	RNP-4 AIRSPACE OPERATIONS NOT AUTHORIZED

(O) PROCEDURES

RNP-4 airspace operations – Not Authorized.

(M) PROCEDURES

1. The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
2. The deferral code RNP must also be entered on the log page and the placard when deferring this item.
3. MCC authorization is required prior to its usage or removal.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
34-00-10R	RNP-10 Status "DISP.APPR.REQ'D." Administrative Control Item	N	-	(O)(M) Authorized by MCC when: a) RNP-10 airspace operations cannot be used, and b) No specific MEL item applies. NOTE: This Item Number is only used for restricting the RNP-10 status of the aircraft and MCC authorization is required prior to its usage or removal. <u>RNP-10 Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-00-10R	Adjacent to each PFD	RNP-10 AIRSPACE OPERATIONS NOT AUTHORIZED

(O) PROCEDURES

RNP-10 airspace operations – Not Authorized.

(M) PROCEDURES

1. The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
2. The deferral code RNP must also be entered on the log page and the placard when deferring this item.
3. MCC authorization is required prior to its usage or removal.

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-9

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-12-01A	Mach Indications	Y	2	1	C (O) May be inoperative provided flight descends to FL 290 or below, if failure of the second indication occurs in flight.
34-12-01B	Mach Indications "DISP.APPR.REQ'D."	Y	2	0	C (O) May be inoperative provided flight remains at or below FL 290.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-12-01A	Near Associated PFD	___ Mach Indication INOP
34-12-01B	Near Both PFDs	___ Mach Indication(s) INOP

(O) PROCEDURES

34-12-01A, 34-12-01B

Refer to Remarks or Exceptions Column.

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-10

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
34-12-02	True Airspeed Indications	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-12-02	Near Associated NAV Display(s)	___ TAS Indication(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-16-01A	Altitude Alerting System "DISP.APPR.REQ'D."	Y	1	0	A (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 is not dispatched from ATL, CVG, JFK or LAX unless; 1. Altitude Alerting System failure occurs after pushback but prior to takeoff, or 2. Altitude Alerting System repair was attempted but was not successful, d) In those cases where repair is attempted but not successful, the aircraft may be dispatched on a flight or series of flights but shall not continue beyond ATL, CVG, JFK or LAX where repair must be accomplished prior to dispatch, e) It is required that the MCC initiate a Corrective Action Required (CAR) for the initial repair location (ATL, CVG, JFK or LAX) at the time of deferral and issue a second CAR for the next designated airport if the initial repair attempt was not successful, and f) Repairs are made within three flight days. <u>RVSM Operations</u> Not Authorized
34-16-01B	Aural Alert	Y	-	0	C May be inoperative provided: a) Visual alert operates normally, and b) Auto-pilot with altitude hold and altitude capture operates normally.
34-16-01C	Visual Alert	Y	-	0	C May be inoperative provided: a) Aural alert operates normally, and b) Auto-pilot with altitude hold and altitude capture operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-16-01A	A/P MCP Altitude Window	Altitude Alerting System INOP
34-16-01B	A/P MCP Altitude Window	Altitude Alerting Aural Alert INOP
34-16-01C	A/P MCP Altitude Window	Altitude Alerting Visual Alert INOP

(O) PROCEDURES

34-16-01A

- Determine that at least one autopilot is operating normally and that altitude hold is operating normally.
- Use the autopilot and altitude hold for all operations for which it is appropriate.
- Cross-check the altitude displays between the captain's and first officer's PFDs upon reaching and departing an assigned altitude. Periodically cross-check altitude indications when maintaining an assigned altitude.
- Pilot monitoring should call out approaching and departing assigned altitudes.
- Flight crew must be aware that the usual alerts for altitude deviations will not occur.
- [Refer to Airway Manual, Airspace & Enroute Navigation, for RVSM procedures and contingencies.](#)

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-12

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
34-21-02	Static Air Temperature (SAT) Indication	Y	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-21-02	Near Left FMS CDU	SAT Indication INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-21-03A	Air Data Inertial Reference Unit (ADIRU) ADIRU Faults "DISP.APPR.REQ'D."	N	1	0	B
					(O)(M) May be dispatched with faults indicated by ADIRU status message provided: a) Adequate ground navigation facilities are available, b) Non-stabilized magnetic compass operates normally, c) Approach minimums do not require use of triple channel autoland, d) RNAV operations do not require use of ADIRU (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and e) SAARU data is verified available to both PFDs PRIOR TO EACH DEPARTURE (Log Book Entry Required). CAT III Not Authorized Repetitive Check Required (Yellow Placard)
34-21-03B	Air Data Inertial Reference Unit (ADIRU) ADIRU Faults "DISP.APPR.REQ'D."	N	1	0	B
					(O)(M) May be dispatched with faults indicated by ADIRU status message provided: a) Both GPS receivers operate normally, b) Both FMCs operate normally, c) Non-stabilized magnetic compass operates normally, d) Approach minimums do not require use of triple channel autoland, e) RNAV operations do not require use of ADIRU (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and f) SAARU data is verified available to both PFDs PRIOR TO EACH DEPARTURE (Log Book Entry Required). CAT III Not Authorized Repetitive Check Required (Yellow Placard)
34-21-03C	Air Data Inertial Reference Unit (ADIRU) (ON BAT Light)	Y	1	0	C
34-21-03D	ADIRU Switch Lights (OFF Light)	Y	1	0	C
34-21-03E	ADIRU Switch Lights (ON Light)	Y	1	0	C

CONTINUED NEXT PAGE

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-21-03A	Near Overhead Panel ADIRU Switch	ADIRU INOP
34-21-03B	Near Overhead Panel ADIRU Switch	ADIRU INOP
34-21-03C	Near Overhead Panel ADIRU Switch	ADIRU ON BAT Light INOP
34-21-03D	Near Overhead Panel ADIRU Switch	ADIRU Switch Lights OFF Light INOP
34-21-03E	Near Overhead Panel ADIRU Switch	ADIRU Switch Lights ON Light INOP

(O) PROCEDURES

34-21-03A, 34-21-03B

When the ADIRU status message is displayed, the autoland system is not fail-operational and the advisory message NO LAND 3 will be displayed.

(M) PROCEDURES

34-21-03A, 34-21-03B

PRIOR TO EACH DEPARTURE - Verify SAARU data is available to both PFDs.

1. With the airplane powered, check SAARU alignment. The Standby Attitude indicator should display sky/ground (blue over brown) shading.
2. Position both AIR DATA / ATT switches to ALTN (non-normal position - switch in).
3. Verify that EICAS advisory message ALTN ATTITUDE is displayed.
4. Verify that the Attitude Indication on both Primary Flight Displays (PFD) display the sky/ground (blue over brown) shading and pitch scale. No airspeed or altitude failure flags should be displayed on either PFD.
5. Position both AIR DATA / ATT switches off (normal position - switch out).
6. Verify that EICAS advisory message ALTN ATTITUDE is not displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	PITOT AIR DATA MODULES (PRIMARY - ARINC 629)				
34-21-04A	Right Pitot Air Data Module "DISP.APPR.REQ'D."	N	1	0	B (O)(M) May be inoperative provided: a) Left and center pitot probe heater systems operate normally, b) Left and center pitot air data modules operate normally, c) Left static air data module operates normally, d) Standby Airspeed Indication operates normally, e) Right AIR DATA / ATT instrument source switch operates normally, f) SAARU data is verified to be available to the right PFD PRIOR TO EACH DEPARTURE (Log Book Entry Required), g) Left and center pitot probes are inspected PRIOR TO EACH DEPARTURE (Log Book Entry Required), and h) Approach minimums do not require its use. <u>CAT III</u> Not Authorized NOTE: If Left or Center Pitot Air Data Modules are also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)

CONTINUED NEXT PAGE

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	PITOT AIR DATA MODULES (PRIMARY - ARINC 629) (CONTINUED)				
34-21-04B	Left Pitot Air Data Module "DISP.APPR.REQ'D."	N	1	0	B (O)(M) May be inoperative provided: a) Right and center pitot probe heater systems operate normally, b) Right and center pitot air data modules operate normally, c) Right static air data module operates normally, d) Standby Airspeed Indication operates normally, e) Left AIR DATA / ATT instrument source switch operates normally, f) SAARU data is verified to be available to the left PFD PRIOR TO EACH DEPARTURE (Log Book Entry Required), g) Right and center pitot probes are inspected PRIOR TO EACH DEPARTURE (Log Book Entry Required), and h) Approach minimums do not require its use. <u>CAT III</u> Not Authorized NOTE: If Right or Center Pitot Air Data Modules are also inoperative then CAT I and CAT II/III are not authorized Repetitive Check Required (Yellow Placard)

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	PITOT AIR DATA MODULES (PRIMARY - ARINC 629) (CONTINUED)				
34-21-04C	Center Pitot Air Data Module "DISP.APPR.REQ'D."	N	1	0	B
					(O)(M) May be inoperative provided: a) Left and right pitot probe heater systems operate normally, b) Left and right pitot air data modules operate normally, c) Left and right static air data modules operate normally, d) Standby Airspeed Indication operates normally, e) Both AIR DATA/ATT instrument source switches operate normally, f) SAARU data is verified to be available to both PFDs PRIOR TO EACH DEPARTURE, g) Left and right pitot probes are inspected PRIOR TO EACH DEPARTURE, and h) Approach minimums do not require its use. <u>CAT III</u> Not Authorized NOTE: If Right or Left Pitot Air Data Modules are also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-21-04A	Center Display Control Panel	Right Pitot Air Data Module INOP
34-21-04B	Center Display Control Panel	Left Pitot Air Data Module INOP
34-21-04C	Center Display Control Panel	Center Pitot Air Data Module INOP

(O) PROCEDURES

34-21-04A, 34-21-04B, 34-21-04C

- When a single pitot ADM is inoperative, the autoland system is not fail-operational and the advisory message NO LAND 3 will be displayed.
- If the Captain's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed may be flagged inoperative, or airspeed and altitude may be in error on the left PFD. If the First Officer's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed may be flagged inoperative, or airspeed and altitude may be in error on the right PFD. These effects are normal for these dispatch conditions.
- For a Left ADM inop, the WINDSHEAR SYS advisory message may also be displayed.

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4. An additional failure, such as a plugged or damaged pitot probe, may result in the two remaining pitot sources miscomparing and voted airspeed being declared invalid. Lack of valid voted airspeed will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs. Additionally, the left or right PFD airspeed may be flagged inoperative, or airspeed and altitude may be in error if dispatch was made with the left or right pitot ADM inoperative respectively.

NOTE: If the left or right PFD airspeed is flagged, selection of ALTN ATT / AIR DATA will display the opposite PFD airspeed. This single air data condition will be indicated by the SGL SOURCE AIR DATA advisory message.

5. The following display effects with regard to airspeed (A/S) are likely:

Pitot ADM Inoperative at Dispatch	Pitot Probe Plugged, Damaged, etc.	L PFD A/S Display	Standby A/S Display	R PFD A/S Display
Left	Center	Flag (ADM failed) or In Error (ADM inop)	In Error (plugged)	Correct
Left	Right	Flag (ADM failed) or In Error (ADM inop)	Correct	In Error (plugged)
Center	Left	In Error (plugged)	Correct	Correct
Center	Right	Correct	Correct	In Error (plugged)
Right	Left	In Error (plugged)	Correct	Flag (ADM failed) or In Error (ADM inop)
Right	Center	Correct	In Error (plugged)	Flag (ADM failed) or In Error (ADM inop)

(M) PROCEDURES

NOTE 1: The left, center and right Pitot and Static ADMs are interchangeable.

NOTE 2: An inoperative left or right Pitot ADM may also result in the AOA VANE L or R status message because the associated ADM controls and monitors AOA vane heat. Dispatch must also be made with reference to [MEL item 34-21-06](#).

NOTE 3: The WINDSHEAR REAC status message and WINDSHEAR SYS advisory message may also be displayed. For a WINDSHEAR REAC status message or WINDSHEAR SYS advisory message displayed, the airplane must also be dispatched using [MEL item 34-46-01](#).

NOTE 4: The SATCOM SYSTEM and SATCOM HI GAIN status messages may also be displayed. For a SATCOM SYSTEM or SATCOM HI GAIN status message displayed, the airplane must also be dispatched using [MEL item 23-15-01](#).

34-21-04A

- PRIOR TO EACH DEPARTURE** - Visually examine the left and center pitot probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe - Inspection/Check per the AMM.

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2. **PRIOR TO EACH DEPARTURE** - Verify that SAARU data is available to the right Primary Flight Display (PFD).
 - a. With the airplane powered, verify SAARU alignment. The Standby Attitude indicator should display sky / ground (blue over brown) shading.
 - b. Position the right AIR DATA / ATT switch to ALTN (non-normal position - switch in).
 - c. Verify that the Attitude Indication on the right PFD displays the sky / ground (blue over brown) shading and pitch scale.
 - d. Position the right AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

34-21-04B

1. **PRIOR TO EACH DEPARTURE** - Visually examine the right and center pitot probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe - Inspection/Check per the AMM.
2. **PRIOR TO EACH DEPARTURE** - Verify that SAARU data is available to the left Primary Flight Display (PFD).
 - a. With the airplane powered, verify SAARU alignment. The Standby Attitude indicator should display sky / ground (blue over brown) shading.
 - b. Position the left AIR DATA / ATT switch to ALTN (non-normal position - switch in).
 - c. Verify that the Attitude Indication on the left PFD displays the sky / ground (blue over brown) shading and pitch scale.
 - d. Position the left AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

34-21-04C

1. **PRIOR TO EACH DEPARTURE** - Visually examine the left and right pitot probe external installations for damage and unwanted material in the pitot probe opening. If damage or unwanted material is noted, perform Pitot Probe - Inspection/Check per the AMM.
2. **PRIOR TO EACH DEPARTURE** - Verify that SAARU data is available to the left and right Primary Flight Display (PFD).
 - a. With the airplane powered, verify SAARU alignment. The Standby Attitude indicator should display sky / ground (blue over brown) shading.
 - b. Position the left AIR DATA / ATT switch to ALTN (non-normal position - switch in).
 - c. Verify that the Attitude Indication on the left PFD displays the sky / ground (blue over brown) shading and pitch scale.
 - d. Position the left AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

- e. Position the right AIR DATA / ATT switch to ALTN (non-normal position - switch in).
- f. Verify that the Attitude Indication on the right PFD displays the sky / ground (blue over brown) shading and pitch scale.
- g. Position the right AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
STATIC AIR DATA MODULES (PRIMARY - ARINC 629)					
34-21-05A	Right Static Air Data Module "DISP.APPR.REQ'D."	N	1	0	C
					(O)(M) May be inoperative provided: a) Left and center static air data modules operate normally, b) Left pitot air data module operates normally, c) Right Air Data / Att instrument source switch operates normally, d) Standby Airspeed Indication operates normally, e) SAARU data is verified to be available to the right PFD PRIOR TO EACH DEPARTURE (Log Book Entry Required), and f) Approach minimums do not require its use. <u>CAT III</u> Not Authorized NOTE: If Left or Center Static Air Data Modules are also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)
34-21-05B	Left Static Air Data Module "DISP.APPR.REQ'D."	N	1	0	C
					(O)(M) May be inoperative provided: a) Right and center static air data modules operate normally, b) Right pitot air data module operates normally, c) Left Air Data / Att instrument source switch operates normally, d) Standby Airspeed Indication operates normally, e) SAARU data is verified to be available to the left PFD PRIOR TO EACH DEPARTURE (Log Book Entry Required), and f) Approach minimums do not require its use. <u>CAT III</u> Not Authorized NOTE: If Right or Center Static Air Data Modules are also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	STATIC AIR DATA MODULES (Primary - ARINC 629) (Continued)				
34-21-05C	Center Static Air Data Module "DISP.APPR.REQ'D."	N	1	0	C
					(O)(M) May be inoperative provided: a) Left and right static air data modules operate normally, b) Left and right pitot air data modules operate normally, c) Both AIR DATA / ATT instrument source switches operate normally, d) SAARU data is verified to be available to both PFDs PRIOR TO EACH DEPARTURE, e) Standby Airspeed Indication operates normally, and f) Approach minimums do not require its use. <u>CAT III</u> Not Authorized NOTE: If Right or Left Static Air Data Modules are also inoperative then CAT I and CAT II/III are not authorized. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-21-05A	Center Display Control Panel	Right Static Air Data Module INOP
34-21-05B	Center Display Control Panel	Left Static Air Data Module INOP
34-21-05C	Center Display Control Panel	Center Static Air Data Module INOP

(O) PROCEDURES

34-21-05A, 34-21-05B, 34-21-05C

1. The NO LAND 3 advisory message will be displayed.
2. If the Captain's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed may be flagged inoperative, or airspeed and altitude may be in error on the left PFD. If the First Officer's AIR DATA/ATT instrument source switch is positioned to ALTN, airspeed may be flagged inoperative, or airspeed and altitude may be in error on the right PFD. These effects are normal for these dispatch conditions.
3. Certain faults of the Left Static ADM may cause the WINDSHEAR SYS advisory message to be displayed.

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4. An additional failure, such as a plugged or disconnected static source, may result in the two remaining static sources miscomparing and voted airspeed and altitude being declared invalid. Lack of valid voted airspeed and altitude will result in display of the NAV AIR DATA SYS advisory or AIR DATA SYS Caution message and single channel airspeed and altitude will be displayed on the PFDs. Additionally, the left or right PFD airspeed may be flagged inoperative, or airspeed and altitude may be in error if dispatch was made with the left or right pitot ADM inoperative respectively.

NOTE: If the left or right PFD airspeed and altitude is flagged, selection of ALTN ATT / AIR DATA will display the opposite PFD airspeed and altitude. This single air data condition will be indicated by the SGL SOURCE AIR DATA advisory message.

5. The following display effects with regard to airspeed (A/S) and altitude (ALT) are possible:

Static ADM Inoperative at Dispatch	Static Source Plugged, Damaged, etc.	L PFD A/S & ALT Display	Standby A/S & ALT Display	R PFD A/S & ALT Display
Left	Center	Flags (ADM failed) or in Error (ADM inop)	In Error (plugged)	Both Correct
Left	Right	Flags (ADM failed) or in Error (ADM inop)	Both Correct	In Error (plugged)
Center	Left	In Error (plugged)	Both Correct	Both Correct
Center	Right	Both Correct	Both Correct	In Error (plugged)
Right	Left	In Error (plugged)	Both Correct	Flags (ADM failed) or in Error (ADM inop)
Right	Center	Both Correct	In Error (plugged)	Flags (ADM failed) or in Error (ADM inop)

(M) PROCEDURES

NOTE 1: The left, center and right Pitot and Static ADMs are interchangeable.

NOTE 2: Certain faults of the left static ADM may cause the WINDSHEAR REAC status message and WINDSHEAR SYS advisory message to be displayed. For a WINDSHEAR REAC status message or WINDSHEAR SYS advisory message displayed, the airplane must also be dispatched using [MEL item 34-46-01](#).

NOTE 3: Certain faults of the Left Static ADM may cause the SATCOM SYSTEM and SATCOM HI GAIN status messages to be displayed. For a SATCOM SYSTEM or SATCOM HI GAIN status message displayed, the airplane must also be dispatched using [MEL item 23-15-01](#).

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34-21-05A

PRIOR TO EACH DEPARTURE - Verify that SAARU data is available to the right Primary Flight Display (PFD).

1. With the airplane powered, verify SAARU alignment. The Standby Attitude indicator should display sky / ground (blue over brown) shading.
2. Position the right AIR DATA / ATT switch to ALTN (non-normal position - switch in).
3. Verify that the Attitude Indication on the right PFD displays the sky / ground (blue over brown) shading and pitch scale.
4. Position the right AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

34-21-05B

PRIOR TO EACH DEPARTURE - Verify that SAARU data is available to the left Primary Flight Display (PFD).

1. With the airplane powered, verify SAARU alignment. The Standby Attitude indicator should display sky / ground (blue over brown) shading.
2. Position the left AIR DATA / ATT switch to ALTN (non-normal position - switch in).
3. Verify that the Attitude Indication on the left PFD displays the sky / ground (blue over brown) shading and pitch scale.
4. Position the left AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

34-21-05C

PRIOR TO EACH DEPARTURE - Verify that SAARU data is available to the left and right Primary Flight Display (PFD).

1. With the airplane powered, verify SAARU alignment. The Standby Attitude indicator should display sky / ground (blue over brown) shading.
2. Position the left AIR DATA / ATT switch to ALTN (non-normal position - switch in).
3. Verify that the Attitude Indication on the left PFD displays the sky/ground (blue over brown) shading and pitch scale.
4. Position the left AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

5. Position the right AIR DATA / ATT switch to ALTN (non-normal position - switch in).
6. Verify that the Attitude Indication on the right PFD displays the sky / ground (blue over brown) shading and pitch scale.
7. Position the right AIR DATA / ATT switch to Off (normal position - switch out).

CAUTION: Failure to position the AIR DATA / ATT switch off could result in inadvertent display of alternate air data and attitude.

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-24

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
34-21-06	Angle of Attack (AOA) Vane Systems	Y	2	1	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-21-06	Near Associated PFD	___ AOA Vane System INOP

OPERATIONS NOTE:

If an error greater than four degrees (nose up) occurs on the remaining operational AOA vane, then the stick shaker may activate when stall conditions do not actually exist. In addition, the maximum and minimum speed indications on the PFD may come together. In general, this error will be detected within 20 seconds by the ADIRS and the remaining AOA vane rendered inoperative. The stall warning function will then resume normal operation using other signals within the ADIRS.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-21-07	Secondary Attitude Air Data Reference Unit (SAARU) (With Integrated Standby Flight Display Installed) "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Approach minimums do not require use of SAARU, b) ADIRU operates normally, c) Left, right and center pitot air data modules operate normally, d) Left, right and center static air data modules operate normally, e) ISFD operates normally, f) One GPS receiver operates normally, and g) Non-stabilized magnetic compass operates normally. CAT III Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-21-07	Integrated Standby Flight Display	SAARU INOP

(O) PROCEDURES

NOTE 1: If the Captain's AIR DATA / ATT instrument source switch is positioned to ALTN, attitude will be flagged inoperative and airspeed and altitude may be flagged inoperative on the Captain's PFD. If the First Officer's (F/O) AIR DATA / ATT instrument source switch is positioned to ALTN, attitude will be flagged inoperative on the F/O's PFD.

NOTE 2: Selecting ALTN altitude source on the ATC transponder panel will result in no altitude reporting.

NOTE 3: (-200LR only) For ENG EEC MODE L or R status or advisory messages displayed, the airplane must also be dispatched using [MEL item 73-21-02](#).

NOTE 4: The NO LAND 3 advisory message will be displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
	INTEGRATED STANDBY FLIGHT DISPLAY (ISFD)					
34-21-08A	(ISFD) Attitude Indication "DISP.APPR.REQ'D."	Y	1	0	B	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.
34-21-08B	(ISFD) Airspeed Indication "Contact MCC"	N	1	0	B	(M) May be inoperative provided: a) All ARINC 629 pitot air data modules operate normally, b) All ARINC 629 static air data modules operate normally, c) All Pitot Probe heater systems operate normally, d) Both AIR DATA/ATT instrument source switches operate normally, and e) SAARU data is verified available to both PFDs before each departure.
34-21-08C	(ISFD) Approach Mode	Y	1	0	C	
34-21-08D	(ISFD) Heading Display	Y	1	0	C	
34-21-08E	(ISFD) Switch Lights	Y	5	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-21-08A	Integrated Standby Flight Display	Integrated Standby Flight Display (ISFD) Attitude Indication INOP
34-21-08B	Integrated Standby Flight Display	Integrated Standby Flight Display (ISFD) Airspeed Indication INOP
34-21-08C	Integrated Standby Flight Display	Integrated Standby Flight Display (ISFD) Approach Mode INOP
34-21-08D	Integrated Standby Flight Display	Integrated Standby Flight Display (ISFD) Heading Display INOP
34-21-08E	Integrated Standby Flight Display	Integrated Standby Flight Display (ISFD) ____ Switch Light(s) INOP

NOTE: For an INOP ISFD Airspeed Indication the altitude differences may be noted between the ISFD altimeter indication and the primary displays, particularly at higher speeds and altitudes. The ISFD altimeter defaults to a fixed static source error correction when the ISFD airspeed indication is inoperative.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-27

(M) PROCEDURES

34-21-08B

PRIOR TO EACH DEPARTURE - Verify SAARU data is available to both PFDs.

1. With the airplane powered, check SAARU alignment.
 - a. Position both AIR DATA / ATT switches to ALTN (non-normal position - switch in).
 - b. Verify that EICAS advisory message ALTN ATTITUDE is displayed.
 - c. Verify that the Attitude Indication on both Primary Flight Displays (PFD) display the sky/ground (blue over brown) shading and pitch scale. No airspeed or altitude failure flags should be displayed on either PFD.
 - d. Position both AIR DATA / ATT switches off (normal position - switch out).
 - e. Verify that EICAS advisory message ALTN ATTITUDE is not displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-23-01	Non-Stabilized Magnetic Compass (Standby) "Contact MCC"	Y	1	0	B May be inoperative provided ADIRU operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-23-01	Magnetic Compass	Magnetic Compass INOP

NOTE: The ADIRU is operating normally if the ADIRU status message is not displayed.

OPERATIONS NOTE:

In the unlikely event the ADIRU inertial output fails, the NAV ADIRU INERTIAL caution level EICAS message will be displayed. In this situation there is no available heading reference to update the SAARU provided heading and as a result no autopilot roll modes are available. Adjust the NAV ADIRU INERTIAL non-normal procedure as follows to restore the autopilot:

When heading no longer displayed and SET HDG line displayed on POS INIT page 1/3:

HEADING.....ENTER
AUTOPILOT.....RE-ENGAGE

NOTE 1: Crosscheck heading periodically for drift with magnetic compass or indicated track and update the SAARU heading as necessary.

NOTE 2: VOR course deviation is available in the ND VOR mode. ILS localizer and glideslope deviation raw data is available on both the PFD and the ND.

NOTE 3: If GPS is not available, the following additional items are inoperative:

- ND map mode
- Active leg course and distance
- Direct to waypoint function
- Alternate page DIVERT NOW function
- Navigation radio autotuning

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-29

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-24-01	Standby Attitude Indicator (Non-ISFD System) "DISP.APPR.REQ'D."	Y	1	0	B 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.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-24-01	Standby Attitude Indicator	Standby Attitude Indicator INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-31-01A	Instrument Landing System (ILS) "DISP.APPR.REQ'D."	Y	3	2	C (O)(M) Left or Right ILS may be inoperative provided approach minimums do not require their use. <u>CAT III</u> Not Authorized
34-31-01B	Instrument Landing System (ILS) "DISP.APPR.REQ'D."	Y	3	1	C (O)(M) Left and Right ILS may be inoperative provided: a) Approach minimums do not require their use, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III</u> Not Authorized
34-31-01C	Instrument Landing System (ILS) "DISP.APPR.REQ'D."	Y	3	0	C (O)(M) May be inoperative provided: a) Approach minimums do not require their use, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT I (ILS)</u> Not Authorized <u>CAT II/III</u> Not Authorized NOTE: May be required as noted on the approach plate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-31-01A	Associated PFD	___ ILS INOP
34-31-01B	Associated PFD	___ ILS INOP
34-31-01C	Associated PFD	___ ILS INOP

(O) PROCEDURES

34-31-01A, 34-31-01B, 34-31-01C

When a single ILS is inoperative, the autoland system is not fail-operational and the Advisory message NO LAND 3 will be displayed. When two or more ILS are inoperative, the autoland system is inoperative and the Advisory message NO AUTOLAND will be displayed. For a left ILS inoperative, Advisory and Status messages GND PROX SYS may be displayed.

(M) PROCEDURES

34-31-01A, 34-31-01B, 34-31-01C

If the left ILS is inoperative, Ground Proximity Warning System Mode 5 (Glideslope Deviation) will be inoperative and must also be [deferred per MEL 34-46-01](#). Advisory and Status messages GND PROX SYS may be displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-31-02A	Glideslope Antenna Switching "DISP.APPR.REQ'D."	Y	3	2	C (O) Left or Right may be inoperative provided approach minimums do not require use of the associated ILS receiver. CAT III Not Authorized
34-31-02B	Glideslope Antenna Switching "DISP.APPR.REQ'D."	Y	3	1	C (O) Left and Right may be inoperative provided: a) Approach minimums do not require use of the associated ILS receivers, and b) Flight remains within 180 minutes of landing at a suitable airport. CAT II/III Not Authorized
34-31-02C	Glideslope Antenna Switching "DISP.APPR.REQ'D."	Y	3	0	C (O) May be inoperative provided: a) Approach minimums do not require use of the associated ILS receivers, and b) Flight remains within 180 minutes of landing at a suitable airport. CAT I (ILS) Not Authorized CAT II/III Not Authorized NOTE: May be required as noted on the approach plate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-31-02A	Associated PFD	___ Glideslope Antenna Switching INOP
34-31-02B	Associated PFD	Left and Right Glideslope Antenna Switching INOP
34-31-02C	Associated PFD	___ Glideslope Antenna Switching INOP

(O) PROCEDURES

34-31-02A, 34-31-02B, 34-31-02C

- For one G/S antenna switching inoperative, the NO LAND 3 advisory message will be displayed.
- For more than one G/S antenna switching inoperative, the NO AUTOLAND advisory message will be displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-31-03A	Localizer Antenna Switching "DISP.APPR.REQ'D."	Y	3	2	C (O) Left or Right may be inoperative provided approach minimums do not require use of the associated ILS receiver. <u>CAT III</u> Not Authorized
34-31-03B	Localizer Antenna Switching "DISP.APPR.REQ'D."	Y	3	1	C (O) Left and Right may be inoperative provided: a) Approach minimums do not require use of the associated ILS receivers, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT II/III</u> Not Authorized
34-31-03C	Localizer Antenna Switching "DISP.APPR.REQ'D."	Y	3	0	C (O) May be inoperative provided: a) Approach minimums do not require use of the associated ILS receivers, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>CAT I (ILS)</u> Not Authorized <u>CAT II/III</u> Not Authorized NOTE: May be required as noted on the approach plate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-31-03A	Associated PFD	___ Localizer Antenna Switching INOP
34-31-03B	Associated PFD	Left and Right Localizer Antenna Switching INOP
34-31-03C	Associated PFD	___ Localizer Antenna Switching INOP

(O) PROCEDURES

34-31-03A, 34-31-03B, 34-31-03C

1. For one LOC antenna switching inoperative, the NO LAND 3 advisory message will be displayed.
2. For more than one LOC antenna switching inoperative, the NO AUTOLAND advisory message will be displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-32-01	Marker Beacon System "DISP.APPR.REQ'D."	Y	1	0	C May be inoperative provided approach minimums do not require its use. NOTE 1: May be required as noted on the approach plate. NOTE 2: Inner Marker is required for CAT II RA/NA

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-32-01	Near Left PFD	Marker Beacon System INOP

MAINTENANCE NOTE:

The Marker Beacon and VOR receivers are contained in the same LRU. If the VOR system fails because of the Marker Beacon, the specific CMC fail message will indicate the MB failure.

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-34

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-33-01	Radio Altimeter Systems "DISP.APPR.REQ'D."	Y	3	2	B (O) May be inoperative provided approach minimums or operating procedures do not require its use. <u>CAT III</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-33-01	Near Associated PFD	___ Radio Altimeter System INOP

(O) PROCEDURES

The NO LAND 3 advisory message will be displayed.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-43-01A	Weather Radar System "DISP.APPR.REQ'D."	Y	-	1	D
34-43-01B	Weather Radar System "DISP.APPR.REQ'D."	Y	-	0	C
					(O) May be inoperative provided: a) Aircraft is not operated in IFR or night VFR conditions when current weather reports indicate that thunderstorms, or other potentially hazardous weather conditions that can be detected with airborne weather radar, may reasonably be expected along the route to be flown, b) Reactive Windshear Alert (GPWS Mode 7) operates normally, c) Refer to FCTM, Non-Normal Maneuvers, Windshear, and d) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts. NOTE: For ETOPS beyond 120 minutes and Polar Operations, one weather radar system is required. Theater Restrictions May Apply
34-43-01C	Weather Radar System "DISP.APPR.REQ'D."	Y	-	0	B
					(O) May be inoperative provided: a) Aircraft is not operated in IFR or night VFR conditions when current weather reports indicate that thunderstorms, or other potentially hazardous weather conditions that can be detected with airborne weather radar, may reasonably be expected along the route to be flown, b) Refer to FCTM, Maneuvers, Windshear, and c) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts. NOTE: For ETOPS beyond 120 minutes and Polar Operations, one weather radar system is required. Theater Restrictions May Apply

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
WEATHER RADAR SYSTEM (CONTINUED)					
34-43-01D	Predictive Windshear Function	Y	-	0	C (O) May be inoperative provided: a) Reactive Windshear Alert (GPWS Mode 7) operates normally, b) Flight crewmembers maintain awareness of airplane altitude and flight path, and c) Flight crewmembers utilize all systems available (autopilot, autoland, ILS and FMCS) and approach altitude callouts. NOTE: The EICAS advisory message WINDSHEAR SYS is displayed when predictive windshear alerting capability in the weather radar system is inoperative or the GPWS reactive windshear alert mode is inoperative.
34-43-01E	Predictive Windshear Function "DISP.APPR.REQ'D."	Y	-	0	B (O) May be inoperative provided: a) Refer to FCTM, Maneuvers, Windshear, and b) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts.
34-43-01F	Auto Tilt Function	Y	-	0	C May be inoperative provided manual tilt function operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-43-01A	Radar Control Panel	___ Weather Radar System INOP
34-43-01B	Radar Control Panel	___ Weather Radar System(s) INOP
34-43-01C	Radar Control Panel	Weather Radar System(s) INOP
34-43-01D	Radar Control Panel	Predictive Windshear Function INOP
34-43-01E	Radar Control Panel	Predictive Windshear Function INOP
34-43-01F	Radar Control Panel	Auto Tilt Function INOP

NOTE: For dispatch purposes, the radar equipment is considered operational provided one radar indicator operates normally and the radar system is otherwise operative.

MAINTENANCE NOTE:

The WINDSHEAR PRED status message is not displayed if the WXR SYS status message is displayed.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-37

(O) PROCEDURES

34-43-01B, 34-43-01C

| Refer to REMARKS or EXCEPTIONS sections on Page 34-35.

34-43-01D

| Refer to REMARKS or EXCEPTIONS sections on Page 34-36.

34-43-01E

| Refer to REMARKS or EXCEPTIONS sections on Page 34-36.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	TRAFFIC COLLISION AND AVOIDANCE SYSTEM (TCAS)				
34-45-01A	Traffic Collision and Avoidance System (TCAS) "DISP.APPR.REQ'D."	Y	1	0	B (O)(M) May be inoperative provided: a) Routing restrictions for TCAS are observed, and b) System is deactivated and secured. Theater Restrictions May Apply
34-45-01B	Resolution Advisory (RA) Display Systems	Y	2	1	C (O) May be inoperative on the non-flying pilot side.
34-45-01C	Resolution Advisory (RA) Display Systems	Y	-	0	C (O) May be inoperative provided: a) Traffic Alert (TA) visual display and audio functions operate normally, and b) TA only mode is selected by the crew.
34-45-01D	Traffic Alert (TA) Display Systems	Y	-	0	C (O) May be inoperative provided RA visual display and audio functions operate normally.
34-45-01E	Audio Functions "DISP.APPR.REQ'D."	Y	1	0	B (O) May be inoperative provided routing restrictions for TCAS are observed. Theater Restrictions May Apply
34-45-01F	Airspace Selection Function	Y	-	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-45-01A	ATC Transponder Control Panel	TCAS INOP
34-45-01B	ATC Transponder Control Panel	___ TCAS RA Display INOP
34-45-01C	ATC Transponder Control Panel	___ TCAS RA Display(s) INOP
34-45-01D	ATC Transponder Control Panel	___ TCAS TA Display(s) INOP
34-45-01E	ATC Transponder Control Panel	TCAS Audio Functions INOP
34-45-01F	ATC Transponder Control Panel	___ TCAS Airspace Selection Function(s) INOP

(O) PROCEDURES

34-45-01A, 34-45-01E

TCAS must be operative on routes outbound from the Continental United States to destinations outside the Continental United States, except Canada.

34-45-01B, 34-45-01C, 34-45-01D

Monitor the operative indications and advisories and respond as appropriate.

(M) PROCEDURES

34-45-01A

Pull and secure the TCAS circuit breaker located on the P11 panel.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	GROUND PROXIMITY WARNING SYSTEM (GPWS)				
34-46-01A	GPWS Function "Contact MCC"	Y	1	0	A (O) May be inoperative provided: a) Repairs are made within two flight days, b) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts, c) Preflight briefing will include review of terrain and/or obstructions in the proximity of the departure and arrival airports, and d) Pilot Monitoring should monitor flight path during takeoff, approach and landing, and alert the pilot flying if any of the following conditions exist: a. Excessive descent rate. b. Excessive terrain closure rate. c. Altitude loss after takeoff or go-around. d. Unsafe terrain clearance while not in the landing mode. e. Deviation from glideslope.
34-46-01B	Modes 1-4 "Contact MCC"	Y	4	0	A (O) May be inoperative provided: a) Repairs are made within two flight days, b) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts, c) Preflight briefing will include review of terrain and/or obstructions in the proximity of the departure and arrival airports, and d) Pilot Monitoring should monitor flight path during takeoff, approach and landing, and alert the pilot flying if any of the following conditions exist: a. Excessive descent rate. b. Excessive terrain closure rate. c. Altitude loss after takeoff or go-around. d. Unsafe terrain clearance while not in the landing mode. e. Deviation from glideslope.
34-46-01C	Glideslope Deviation (Mode 5) "Contact MCC"	Y	1	0	B

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	GROUND PROXIMITY WARNING SYSTEM (GPWS) (CONTINUED)				
34-46-01D	Advisory Callouts (Mode 6) "Contact MCC"	Y	1	0	B (O) May be inoperative provided: a) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts, b) Preflight briefing will include review of terrain and/or obstructions in the proximity of the departure and arrival airports, and c) Pilot Monitoring should monitor flight path during takeoff, approach and landing, and alert the pilot flying if any of the following conditions exist: a. Excessive descent rate. b. Excessive terrain closure rate. c. Altitude loss after takeoff or go-around. d. Unsafe terrain clearance while not in the landing mode. e. Deviation from glideslope.
34-46-01E	Reactive Windshear Alert Mode (Mode 7)	Y	1	0	C (O) May be inoperative provided: a) Predictive Windshear Alert Mode (Detection and Avoidance) operates normally, b) Refer to FCTM, Maneuvers, Windshear, and c) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts.
34-46-01F	Reactive Windshear Alert Mode (Mode 7) "DISP.APPR.REQ'D."	Y	1	0	B (O) May be inoperative provided: a) Refer to FCTM, Maneuvers, Windshear, and b) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	GROUND PROXIMITY WARNING SYSTEM (GPWS) (CONTINUED)				
34-46-01G	Terrain Awareness Function (EGPWS / Enhanced) "DISP.APPR.REQ'D."	Y	1	0	B (O) May be inoperative provided: a) Refer to Operations Manual, Volume 1, Normal Procedures, Standard Callouts, b) Preflight briefing will include review of terrain and/or obstructions in the proximity of the departure and arrival airports, and c) Pilot Monitoring should monitor flight path during takeoff, approach and landing, and alert the pilot flying if any of the following conditions exist: a. Excessive descent rate. b. Excessive terrain closure rate. c. Altitude loss after takeoff or go-around. d. Unsafe terrain clearance while not in the landing mode. e. Deviation from glideslope, and d) RNAV operations do not require its use (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements) Theater Restrictions May Apply
34-46-01H	Terrain Display Functions	Y	2	1	C
34-46-01I	Terrain Display Functions "Contact MCC"	Y	2	0	B

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-46-01A	Near GPWS Switches	GPWS INOP
34-46-01B	Near GPWS Switches	GPWS ____ Mode INOP
34-46-01C	Near GPWS Switches	GPWS Glideslope Deviation Mode INOP
34-46-01D	Near GPWS Switches	GPWS Advisory Callout ____ INOP
34-46-01E	Near GPWS Switches	GPWS Reactive Windshear INOP
34-46-01F	Near GPWS Switches	GPWS Reactive Windshear INOP
34-46-01G	Near TERR OVRD Switches	TERR Mode INOP
34-46-01H	Near EFIS Control Panel TERR Switch	____ TERR Display INOP
34-46-01I	Near EFIS Control Panel TERR Switch	____ TERR Display INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-42

MAINTENANCE NOTE:

1. The status message WINDSHEAR REAC is displayed when the ground proximity warning system windshear alert mode is inoperative.
2. The status message TERR SYS is displayed when enhanced ground proximity warning system is inoperative.

(O) PROCEDURES

NOTE 1: The GPWS provides the aural signal for the automatic V1 callout and the Engine Fail alert. These aural signals may not be available.

NOTE 2: The EICAS advisory message GND PROX SYS is displayed when either the TAWS (enhanced ground proximity warning system) or the GPWS are inoperative.

NOTE 3: The EICAS advisory message WINDSHEAR SYS is displayed when the GPWS windshear alert mode is inoperative, or weather radar predictive windshear mode capability is inoperative (Ref. MEL item 34-43-01B).

34-46-01A, 34-46-01B

Refer to REMARKS or EXCEPTIONS sections on Page 34-39.

34-46-01D

Refer to REMARKS or EXCEPTIONS sections on Page 34-40.

34-46-01G

Refer to REMARKS or EXCEPTIONS sections on Page 34-41.

34-46-01E, 34-46-01F

Refer to REMARKS or EXCEPTIONS sections on Page 34-40.

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-43

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-51-01	VOR Navigation Systems "DISP.APPR.REQ'D."	Y	2	1 C	Right VOR System may be inoperative provided approach minimums do not require its use. <u>CAT II/III</u> Not Authorized NOTE: May be required as noted on the approach plate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-51-01	Near Associated ND	RT VOR INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-53-01A	ATC Transponder and Automatic Altitude Reporting Systems	Y	2	1	C
34-53-01B	ATC Transponder and Automatic Altitude Reporting Systems “DISP.APPR.REQ'D.”	Y	2	0	B
34-53-01C	Mode S Elementary and Enhanced Downlink Aircraft Reportable Parameters “DISP.APPR.REQ'D.”	Y	2	0	A
34-53-01D	ADS-B Extended Squitter Transmissions “DISP.APPR.REQ'D.”	Y	2	0	D

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-53-01A	ATC Transponder Control Panel	___ ATC Transponder / Automatic Altitude Reporting Function INOP
34-53-01B	ATC Transponder Control Panel	Both ATC Transponders / Automatic Altitude Reporting Functions INOP
34-53-01C	ATC Transponder Control Panel	___ ATC Transponder(s) / Mode S Reporting Function INOP
34-53-01D	ATC Transponder Control Panel	___ ATC Transponder(s) / ADS-B Squitter Transmission INOP

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-45

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-55-01	Distance Measuring Equipment (DME) "DISP.APPR.REQ'D."	Y	2	1 D	May be inoperative provided: a) Approach minimums do not require its use, and b) RNAV operations do not require use of DME (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). NOTE: May be required as noted on the approach plate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-55-01	Near Associated ND	___ DME INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-57-01A	ADF Systems "DISP.APPR.REQ'D."	Y	2	1 C	May be inoperative provided enroute or approach procedures do not require its use. NOTE: May be required as noted on the approach plate.
34-57-01B	ADF Systems "DISP.APPR.REQ'D."	Y	2	0 C	May be inoperative provided enroute or approach procedures do not require their use. NOTE: May be required as noted on the approach plate.

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-57-01A	Near Associated ND	___ ADF INOP
34-57-01B	Near Associated ND	Both ADFs INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-58-01A	Global Positioning Systems (GPS) "DISP.APPR.REQ'D."	Y	2	1	C May be inoperative provided RNAV operations do not require use of GPS (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). NOTE: May be required as noted on the approach plate.
34-58-01B	Global Positioning Systems (GPS) "DISP.APPR.REQ'D."	Y	2	0	C (O)(M) May be inoperative provided: a) RNAV operations do not require use of GPS (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), b) Approach minimums do not require their use, and c) SAARU operates normally. NOTE: May be required as noted on the approach plate. Theater Restrictions May Apply

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-58-01A	Near Associated FMS CDU	___ GPS INOP
34-58-01B	Near Associated FMS CDU	Both GPSs INOP

(O) PROCEDURES

34-58-01B

- For both GPS inoperative, the NAV UNABLE RNP advisory message may be displayed during lengthy ground operations and flight crew should accomplish the associated Non-Normal Checklist
- For both GPS inoperative, the TERR POS advisory message will be displayed.
- The RWY/POS update on the FMC-CDU TAKEOFF REF page is active when GPS is inoperative.
- The ADS-B Out parameter for position data will be inoperative.

(M) PROCEDURES

34-58-01B

- For both GPS inoperative and AIMS power is interrupted, UTC is lost and the AIMS time function will reset to midnight.
- The ADS-B Out parameter for position data will be inoperative which requires ADS-B Extended Squitter Transmissions to be deferred per [MEL 34-53-01](#).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-61-01A	Flight Management Computing Systems (FMCS) (-200ER only) "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) May be inoperative provided: a) Remaining FMC is verified to operate normally, b) RNAV operations do not require use of dual FMS (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements), and c) Flight remains within 180 minutes of landing at a suitable airport. Theater Restrictions May Apply
34-61-01B	Flight Management Computing Systems (FMCS) (-200LR only) "DISP.APPR.REQ'D."	Y	2	1	C (O)(M) One may be inoperative provided: a) Remaining FMC is verified to operate normally, and b) RNAV operations do not require use of dual FMS (refer to Navigation Equipment Tab [this manual] for RNAV Minimum Requirements). Theater Restrictions May Apply
34-61-01C	Navigation Databases "DISP.APPR.REQ'D."	Y	2	0	C (O) May be out of currency provided: a) Current aeronautical charts or current Nav Database is used to verify navigation fixes PRIOR TO EACH DEPARTURE, b) Pilot or Flight Control use charts or RVAL tool to verify status and suitability of navigation facilities used to define route of flight, c) Approach navigation radios are verified to be properly tuned and identified, and d) Dispatch will not file a flight plan requiring RNAV data that is identified as changed within the current database. Refer to Navigation Equipment Tab (this manual) for RNAV Minimum Requirements . Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-61-01A	Near Associated FMS CDU	___ FMC INOP
34-61-01B	Near Associated FMS CDU	___ FMC INOP
34-61-01C	Near Left FMS CDU	___ FMCS Navigation Database(s) Not Current

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-49

(O) PROCEDURES

34-61-01A

1. Flight must remain within 180 minutes of landing at a suitable airport.
2. For operations requiring Enhanced Mode S transmissions:
 - a. Ensure selected transponder matches operative FMC.
 - b. Selected transponder must be operational.

34-61-01B

For operations requiring Enhanced Mode S transmissions:

1. Ensure selected transponder matches operative FMC.
2. Selected transponder must be operational.

34-61-01C

PRIOR TO EACH DEPARTURE:

1. Select the route to be flown from the (non-current) database.
2. Check the intended route against current Jeppesen pages for agreement of all navigation data, using applicable departure, enroute and arrival charts or communicate with the Dispatcher to accomplish this using the [RVAL tool](#).
3. If all information agrees, the FMS may be used normally on the route which was checked. Each new route must be checked in the same manner.
4. Any time the FMS data does not agree with current Jeppesen information, manual tuning and course selection must be accomplished.

(M) PROCEDURES

34-61-01A, 34-61-01B

To verify one FMC is operating normally, position the FMC selector to AUTO and verify that the "FMC" status and "FMC" advisory messages are not displayed on EICAS.

	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-50

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-61-02	FMC Selector	Y	1	0 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-61-02	Near FMC Selector	FMC Selector INOP

MAINTENANCE NOTE:

Only one FMC is required to accomplish all Flight Management Computing tasks. When the FMC Selector is set to L or R, the selected FMC accomplishes all navigation tasks. When the FMC Selector is set to AUTO, the master FMC (L or R) is automatically selected. If the master FMC fails when AUTO is selected, the remaining FMC automatically takes over without EICAS annunciation. If the FMC Selector is manually moved to a failed FMC, or both FMCs have failed, the EICAS status and advisory messages "FMC" will be displayed.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
34-61-03A	Control Display Units (CDU) (Passenger)	Y	3	2	C (O) Center CDU may be inoperative. NOTE: Any function that operates normally may be used.
34-61-03B	Control Display Units (CDU) (DSPY, MSG, OFST and EXEC Lights)	Y	12	0	C
34-61-03C	Control Display Units (CDU) (Line Select Lights, Function Lights, Execute Lights, Alpha/Numeric Lights and Miscellaneous Key Lights)	Y	-	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
34-61-03A	Affected CDU	Center CDU INOP
34-61-03B	Affected CDU	Control Display Units (CDU) DSPY, MSG, OFST, EXEC Light(s) INOP (As Applicable)
34-61-03C	Affected CDU	Control Display Units (CDU) Line Select Lights, Function Lights, Execute Lights, Alpha/Numeric Lights, Miscellaneous Key Lights INOP (As Applicable)

NOTE: The left, center and right CDUs are fully interchangeable.

(O) PROCEDURES

The center CDU is the only CDU that provides access to the Cabin Interphone System. Use the flight deck handset to access the Cabin Interphone

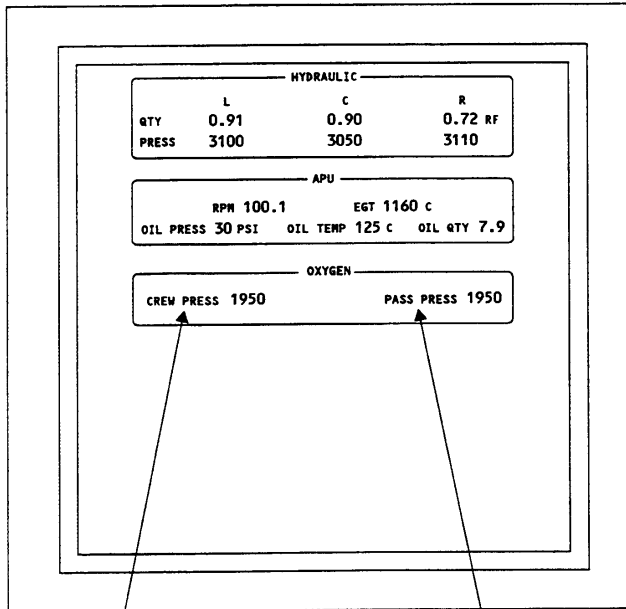
 DELTA	B777 Minimum Equipment List	ATA 34 Navigation	R14 05/09/16 Page 34-52

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ATA 35 Contents

	CREW OXYGEN SYSTEM	35-3
35-11-01A	Crew Oxygen Pressure Indication System.....	35-3
35-11-01B	Overboard Discharge Indicator Disc	35-3
35-11-01C	Crew Oxygen Solenoid Bleed Valve	35-3
35-21-01A	Passenger Oxygen System.....	35-5
35-21-02	Passenger Oxygen Service Units	35-6
35-21-03	Passenger Oxygen Automatic Presentation System	35-7
35-21-04	Passenger Oxygen ON Light	35-8
35-21-05A	Crew Rest Oxygen Modules – Seats	35-9
35-21-05B	Crew Rest Oxygen Modules – Bunks	35-9
35-21-05C	Flight Crew Rest Vanity Module (Includes Sink With Drink Storage Area).....	35-9
35-31-01A	Portable Oxygen Dispensing Units (Bottle and Mask).....	35-10
	PORTABLE OXYGEN DISPENSING UNITS.....	35-11
35-31-01D	Portable Oxygen Dispensing Units (Bottle and Mask) Cabin-Supplemental	35-11
35-31-02	Protective Breathing Equipment (PBE) Seals.....	35-13

MFD - EICAS STATUS PAGE



CREW OXYGEN
PRESSURE
INDICATION
SYSTEM

35-11-1

PASSENGER OXYGEN
PRESSURE
INDICATION
SYSTEM

35-22-1



PORTABLE
OXYGEN
DISPENSING
UNITS

35-31-1

CREW OXYGEN
SOLENOID
BLEED VALVE

35-11-1

PROTECTIVE
BREATHING
EQUIPMENT

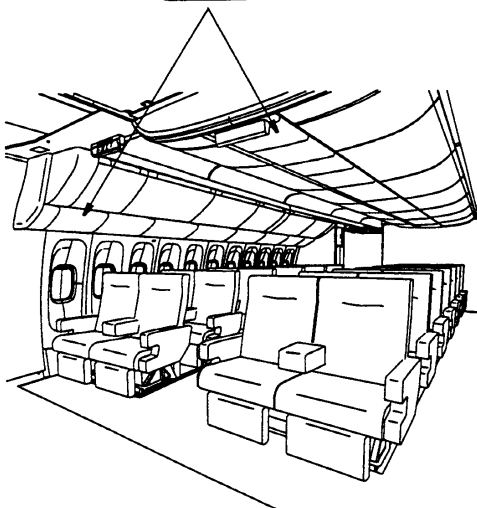
35-11-2

PASSENGER
OXYGEN
AUTOMATIC
PRESENTATION

35-21-3

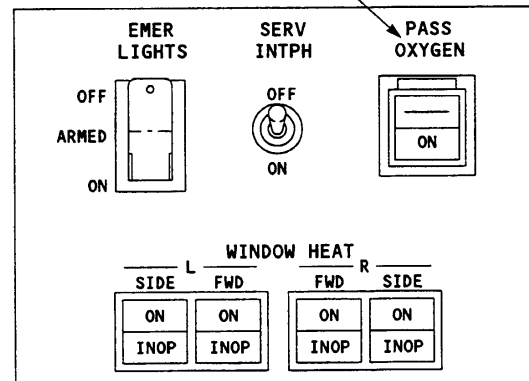
PASSENGER OXYGEN
SERVICE UNITS (PSU)

35-21-2



PASSENGER
OXYGEN
SYSTEM

35-21-1



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
CREW OXYGEN SYSTEM					
35-11-01A	Crew Oxygen Pressure Indication System "Contact MCC"	N	1	0	B (M) May be inoperative provided: a) Oxygen supply is verified to be above minimum required PRIOR TO EACH DEPARTURE (Log Book Entry Required), and b) Crew oxygen shutoff valve(s) is verified open. Repetitive Check Required (Yellow Placard)
35-11-01B	Overboard Discharge Indicator Disc	Y	1	0	B May be damaged or missing.
35-11-01C	Crew Oxygen Solenoid Bleed Valve "Contact MCC"	N	1	0	B (M) May be inoperative provided: a) Solenoid bleed valve is deactivated closed, and b) Crew oxygen shutoff valve(s) is verified open.

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-11-01A	Center Display Control Panel	Crew Oxygen Pressure Indication System INOP
35-11-01B	Center Display Control Panel	Overboard Discharge Indicator Disc DAMAGED / MISSING
35-11-01C	Center Display Control Panel	Crew Oxygen Solenoid Bleed Valve INOP

(M) PROCEDURES

35-11-01A

PRIOR TO EACH DEPARTURE:

- Gain access to the area outboard and above the nose landing gear wheel well, on the left side of the airplane in the Main Equipment Center.
- Verify that the crew oxygen pressure shown on the gauge of the crew oxygen cylinders is above the minimum required for dispatch (see chart below).
- Verify that the crew oxygen cylinder shutoff valves are open.
 - Position the Reset / Test slide lever on a crew oxygen mask to TEST.
 - Push the Emergency / Test selector (red button) on the crew oxygen mask for 10 seconds.
 - Observe that the Crew Oxygen Pressure displayed on the EICAS Status Page does not decrease.

CONTINUED NEXT PAGE

REQUIRED MINIMUM CREW OXYGEN PRESSURE				
Bottle Temperature		Number of Crewmembers Using Oxygen		
°C	°F	2	3	4
-10	14	265	355	445
-5	23	270	360	455
0	32	275	370	460
5	41	280	375	470
10	50	285	380	480
15	59	290	390	485
20	68	295	395	495
25	77	300	400	505
30	86	305	410	510
35	95	310	415	520
40	104	315	420	530
45	113	320	430	540
50	122	325	435	545

35-11-01C

1. Deactivate the solenoid valve.
 - a. Open the OXY PRESS IND circuit breaker on the P210 panel.
 - b. Disconnect, cap and stow the electrical connector DM 35445 from the solenoid bleed valve. The valve is located on the lower left side of the Main Equipment Center, below and forward of the third step of the walkway.
 - c. Close the OXY PRESS IND circuit breaker.
2. Verify that the crew oxygen cylinder shutoff valves are open.
 - a. Position the Reset / Test slide lever on a crew oxygen mask to TEST.
 - b. Push the Emergency / Test selector (red button) on the crew oxygen mask for 10 seconds.
 - c. Observe that the Crew Oxygen Pressure displayed on the EICAS Status Page does not decrease.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
35-21-01A	Passenger Oxygen System "DISP.APPR.REQ'D."	Y	1	0	B (O) May be inoperative provided: a) Flight is not conducted where the minimum enroute altitude is above 14,000 feet MSL, b) The airplane remains at or below FL 250, c) Portable oxygen units are provided for 10% of the passengers for 30 minutes, d) Both air conditioning packs operate normally, e) Pressurization system operates normally, f) Both engine bleed systems operate normally, g) Cabin altitude remains at or below 10,000 feet, and h) Passengers are appropriately briefed.
35-21-01B	Passenger Oxygen System "DISP.APPR.REQ'D."	Y	1	0	B (O) May be inoperative provided flight is conducted at or below 10,000 feet MSL.

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-21-01A	Near PASS OXYGEN Switch	Passenger Oxygen System INOP
35-21-01B	Near PASS OXYGEN Switch	Passenger Oxygen System INOP

(O) PROCEDURES

35-21-01A, 35-21-01B

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

NOTE 2: For the pressurization system to be operating normally, the following items associated with the pressurization system must be operative. If none of the Status Messages listed below are displayed on EICAS or if there are no current MCOs on systems listed below, the pressurization system is considered to be operating normally:

ITEM	MEL ITEM No.	ASSOCIATED STATUS MSG
Auto Cabin Pressure Ctrl's. (L and R)	21-31-01	CABIN ALT AUTO L or R
Manual Cabin Press. Ctrl's. (FWD and AFT)	21-31-02	None
Outflow Valves (FWD and AFT)	21-31-03	OUTFLOW VALVE FWD or AFT
Remote Cabin Pressure Sensor	21-31-04	CPCS REMOTE SENSOR
Cabin Rate Of Climb Indication	21-31-05	None
Cabin Differential Pressure Indication	21-31-06	None
Cabin Altitude Indication	21-31-07	None
Outflow Valve Position Indications	21-31-08	None
Positive Pressure Relief Valves	21-32-01	None

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

	B777 Minimum Equipment List	ATA 35 Oxygen	R14 05/09/16 Page 35-6

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
35-21-02	Passenger Oxygen Service Units "DISP.APPR.REQ'D."	N	-	-	B (M) May be inoperative provided associated seats are blocked and placarded to prevent occupancy.

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-21-02	Near PASS OXYGEN Switch	___ Passenger Oxygen Service Unit(s) INOP

(M) PROCEDURES

1. If required, tapes or ropes of conspicuous contrasting colors must be installed to block access to unusable seats prior to boarding of passengers.
2. Conspicuous signs or placards shall be placed in appropriate locations to indicate seats which are not to be occupied by passengers or flight attendants.

NOTE: For dispatch with an inoperative oxygen service unit that renders a flight attendant seat unusable, use [MEL item 25-25-01](#), Flight Attendant Seat Assembly.

	B777 Minimum Equipment List	ATA 35 Oxygen	R14 05/09/16 Page 35-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
35-21-03	Passenger Oxygen Automatic Presentation System "DISP.APPR.REQ'D."	N	1	0	B (O) May be inoperative provided: a) Manual deployment system operates normally, and b) Flight remains at or below FL 300.

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-21-03	Near PASS OXYGEN Switch	Passenger Oxygen Automatic Presentation System INOP

(O) PROCEDURES

1. Flight altitude is limited to FL 300.
2. For decompression, manually deploy oxygen masks using the flight deck oxygen switch.
3. Brief the cabin crew concerning the dispatch condition.

 DELTA	B777 Minimum Equipment List	ATA 35 Oxygen	R14 05/09/16 Page 35-8

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
35-21-04	Passenger Oxygen ON Light	Y	1	0	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-21-04	Near PASS OXYGEN Switch	Passenger Oxygen ON Light INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
35-21-05A	Crew Rest Oxygen Modules – Seats “DISP.APPR.REQ'D.”	Y	4	0	B (M) May be inoperative provided associated seat is blocked and placarded to prevent occupancy. NOTE: When an OFCR and/or OFAR seat is blocked, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
35-21-05B	Crew Rest Oxygen Modules – Bunks “DISP.APPR.REQ'D.”	Y	10	0	B (M) May be inoperative provided a conspicuous barrier strap or rope is placed across the associated bunk with a placard attached stating the bunk is not to be used. NOTE: When an OFCR and/or OFAR bunk is blocked, coordinate with OCC to determine if alternate crew rest accommodations are authorized for the intended flight. Contact ROC to block seats when appropriate.
35-21-05C	Flight Crew Rest Vanity Module (Includes Sink With Drink Storage Area) “Contact MCC”	Y	1	0	B (M) May be inoperative provided a conspicuous barrier strap or rope is placed across vanity entrance with a placard attached stating the vanity is not to be used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-21-05A	Near PASS OXYGEN Switch	Crew Rest ____ Seat Oxygen Module INOP
35-21-05B	Near PASS OXYGEN Switch	Crew Rest ____ Bunk Oxygen Module INOP
35-21-05C	Near PASS OXYGEN Switch	Flight Crew Rest Vanity OXYGEN Module INOP

(M) PROCEDURES

35-21-05A, 35-21-05B, 35-21-05C

Conspicuous signs or placards shall be placed in appropriate locations to indicate seat(s) / bunk(s) / vanity which is not to be occupied or used by flight or cabin crew.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
35-31-01A	Portable Oxygen Dispensing Units (Bottle and Mask) "DISP.APPR.REQ'D."	Y	15	13	C (O)(M) May be unserviceable or missing provided: a) Required distribution of serviceable bottles is maintained throughout the airplane, b) Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility, c) Location placarding for the associated inoperative bottle is removed or obscured, and d) Flight remains within 180 minutes of landing at a suitable airport.
35-31-01B	Portable Oxygen Dispensing Units (Bottle and Mask) "DISP.APPR.REQ'D."	Y	15	9	C (O)(M) May be unserviceable or missing provided: a) Required distribution of serviceable bottles is maintained throughout the airplane, b) Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility, c) Location placarding for the associated inoperative bottle is removed or obscured, and d) Flight remains within 120 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized
35-31-01C	Portable Oxygen Dispensing Units (Bottle and Mask) "DISP.APPR.REQ'D."	Y	15	8	C (O)(M) May be unserviceable or missing provided: a) Required distribution of serviceable bottles is maintained throughout the airplane, b) Bottles not properly serviced are replaced, serviced, or removed at the next available maintenance facility, c) Location placarding for the associated inoperative bottle is removed or obscured, and d) Flight remains within 60 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	PORTABLE OXYGEN DISPENSING UNITS (CONTINUED)				
35-31-01D	Portable Oxygen Dispensing Units (Bottle and Mask) Cabin-Supplemental "DISP.APPR.REQ'D."	Y	32	30	C (O)(M) May be unserviceable or missing on routes requiring supplemental oxygen provided no more than one unit is inoperative in the same location.
35-31-01E	Portable Oxygen Dispensing Units (Bottle and Mask) Cabin-Supplemental "DISP.APPR.REQ'D."	Y	32	0	C (O)(M) May be unserviceable or missing provided supplemental oxygen is not required for the route intended to be flown.

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-31-01A	Near PASS OXYGEN Switch	___ Portable O2 Bottle(s) INOP / Missing
35-31-01B	Near PASS OXYGEN Switch	___ Portable O2 Bottle(s) INOP / Missing
35-31-01C	Near PASS OXYGEN Switch	___ Portable O2 Bottle(s) INOP / Missing
35-31-01D	Near PASS OXYGEN Switch	___ Supplemental Portable O2 Bottle(s) INOP / Missing
35-31-01E	Near PASS OXYGEN Switch	___ Supplemental Portable O2 Bottle(s) INOP / Missing

NOTE: **35-31-01A** - The "Number Required For Dispatch" on the previous page, is for dual port portable oxygen bottles. In the event the dispatch minimums cannot be met, contact MCC for ER/A authorizing substitution with single port oxygen bottles. *Maintenance is Required and Flight Crew May Not Placard* if substitution required.

(O) PROCEDURES

35-31-01A, 35-31-01B, 35-31-01C, 35-31-01D, 35-31-01E

Ensure cabin crew Purser / FL is notified of the unserviceable bottle and its location.

(M) PROCEDURES

35-31-01A, 35-31-01B, 35-31-01C, 35-31-01D, 35-31-01E

1. Ensure serviceable bottles are evenly distributed throughout the cabin.
2. Remove mask / hose assembly from the unserviceable unit. Secure the mask in a location where it can be retrieved at the next available maintenance facility.
 - a. Disconnect mask assembly from oxygen cylinder outlet by rotating hose fitting ½ turn and pulling out.
3. Place a piece of masking tape over the pressure gage of oxygen bottle and label INOP. Position the unserviceable cylinder in holder and fasten quick release clamp.
4. Using tape or other suitable means, cover affected oxygen bottle location placarding.

	B777 Minimum Equipment List	ATA 35 Oxygen	R14 05/09/16 Page 35-12

NOTE: For locations with two or more oxygen bottles installed, do NOT cover placard if remaining bottle(s) is operative.

	B777 Minimum Equipment List	ATA 35 Oxygen	R14 05/09/16 Page 35-13

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
35-31-02	Protective Breathing Equipment (PBE) Seals	Y	-	-	C (M) PBE seals may be missing or broken provided PBE is not damaged.

MEL ITEM	TAB LOCATION	PLACARD TEXT
35-31-02	Logbook	___ PBE Seal(s) Missing / Broken

NOTE: PBEs are installed in the Overhead Flight Crew and Flight Attendant Rest (OFCR / OFAR) compartments. Refer to [MEL 25-29-04](#) for relief for those PBEs.

(M) PROCEDURES

ONE SEAL BROKEN OR MISSING:

With one seal broken or missing, the PBE is airworthy.

NOTE: Install broken or missing seal prior to flight or at the next available Delta Maintenance station. Replacement seals for new style PBEs are stowed in the plastic logbook pouch.

TWO SEALS BROKEN OR MISSING:

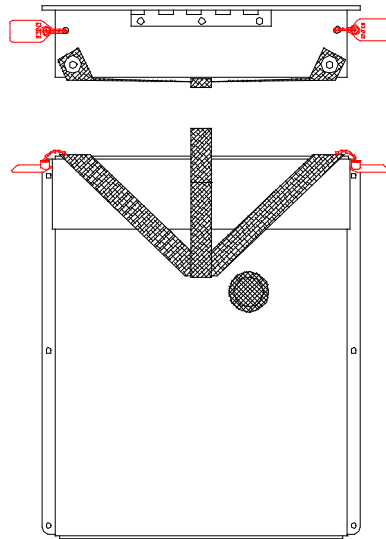
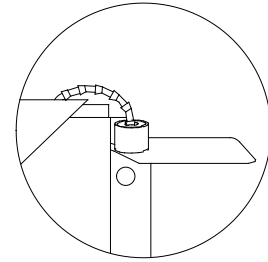
Maintenance is Required and Flight Crew May **Not** Placard

- With both seals broken or missing, remove the PBE and inspect for obvious damage (punctures, rips in pouch etc.).
- Inspect blue / pink humidity indicator (if installed, located near PBE pouch handle):
 - Blue color indicates serviceable PBE.
 - Pink color indicates need for replacement within 36 hours of discovery.
- If no obvious damage is found and humidity indicator is blue, reinstall PBE and reseal in container. Replacement seals for new style PBEs are stowed in the plastic logbook pouch.
- If humidity indicator is pink:
 - Reinstall PBE and reseal in container. Replacement seals are stowed in the plastic logbook pouch.
 - Contact Maintenance Coordinator to schedule PBE replacement within 36 hours.
- If PBE is damaged, replace the PBE.

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SEAL REPLACEMENT:

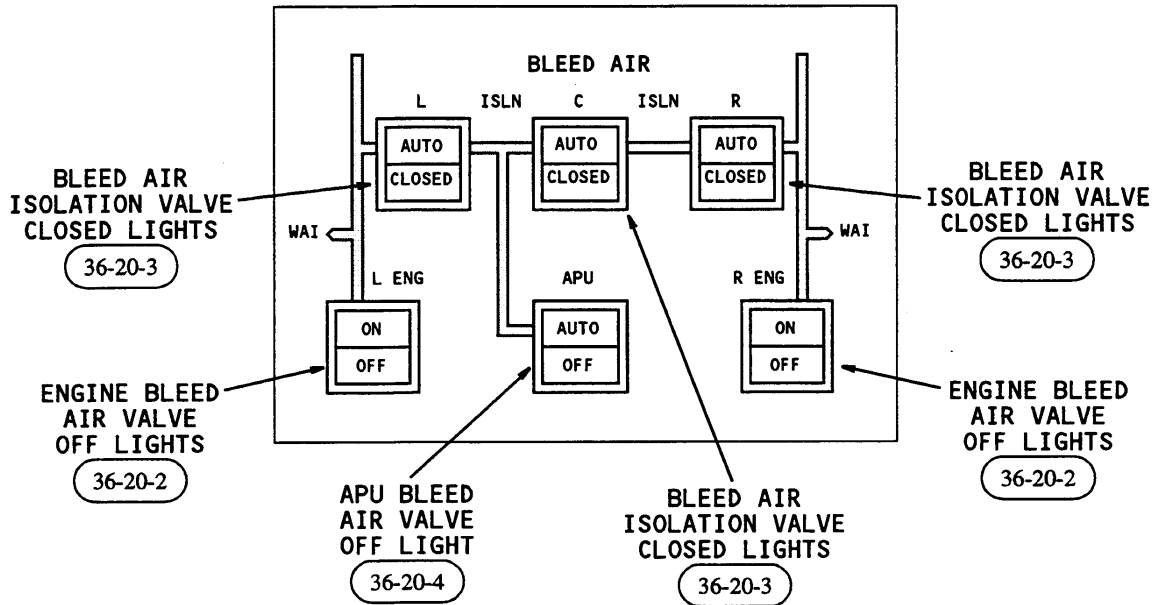
1. Thread tail of seal through container side, then through the hole in the door, and finally through the "ENTER" side of the seal flag.
2. If both seals are being replaced, start both seals before tightening.
3. Pull seal tight to tamper proof the door in the closed position.
4. Cut off tail protruding through the flag.



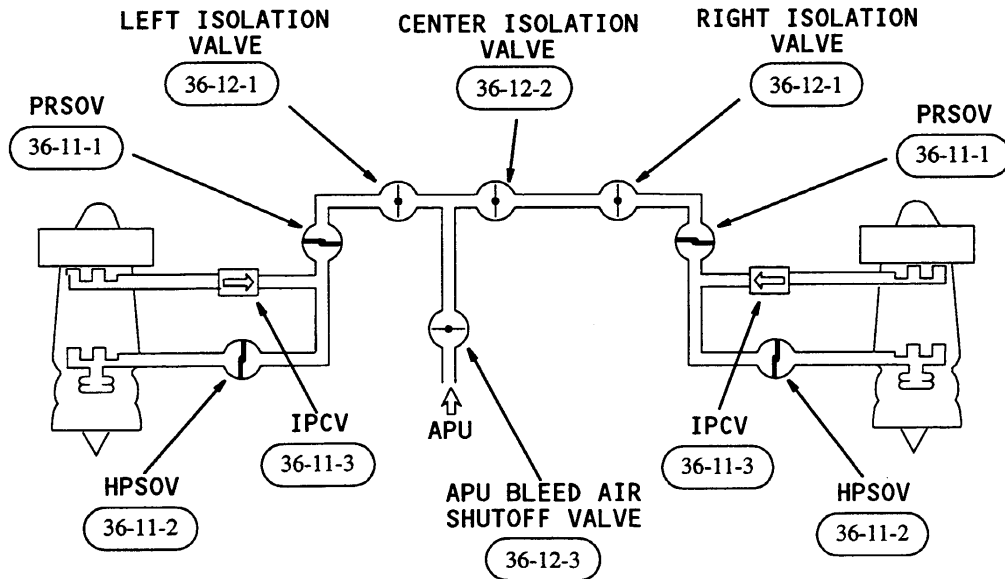
ATA 36 Contents

36-00-01	Air Supply and Cabin Pressure Controllers (ASCPC) Primary (Digital) Controllers	36-4
36-11-01A	Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)	36-9
36-11-01B	Pressure Regulating and Shutoff Systems ENG Bleed Air Switch Lights (OFF Lights).....	36-9
36-11-01C	Pressure Regulating and Shutoff Systems ENG Bleed Air Switch Lights (ON Lights).....	36-9
36-11-02A	High Pressure Shutoff Valves (HPSOV)	36-15
36-11-03	Intermediate Pressure Check Valves (IPCV) (-200ER, -200LR)	36-23
36-11-04	Precoolers	36-28
36-11-05	Fan Air Modulation Valves (FAMV)	36-30
36-12-01A	Left and Right Isolation Systems (Valve and/or Indication)	36-33
36-12-01C	Left and Right Isolation Systems ISLN Switch Lights (CLOSED Lights)	36-33
36-12-01D	Left and Right Isolation Systems ISLN Switch Lights (AUTO Lights)	36-33
36-12-02A	Center Isolation System (Valve and/or Indication)	36-37
36-12-02C	Center Isolation System ISLN Switch Light (CLOSED Light)	36-37
36-12-02D	Center Isolation System ISLN Switch Light (AUTO Light)	36-37
36-12-03A	APU Bleed Air Shutoff System (Valve and/or Indication).....	36-40
36-12-03B	APU Bleed Air Shutoff System (Valve Indication)	36-40
36-12-03C	APU Bleed Air Shutoff System APU Switch Light (OFF Light)	36-40
36-12-03D	APU Bleed Air Shutoff System APU Switch Light (AUTO Light).....	36-40
36-20-01	Air Synoptic Display	36-44
36-21-01	Manifold Pressure / Flow Sensing Systems.....	36-45
36-21-02	Intermediate Pressure Sensing Systems	36-46
36-22-01A	Manifold Temperature Sensing Systems	36-47

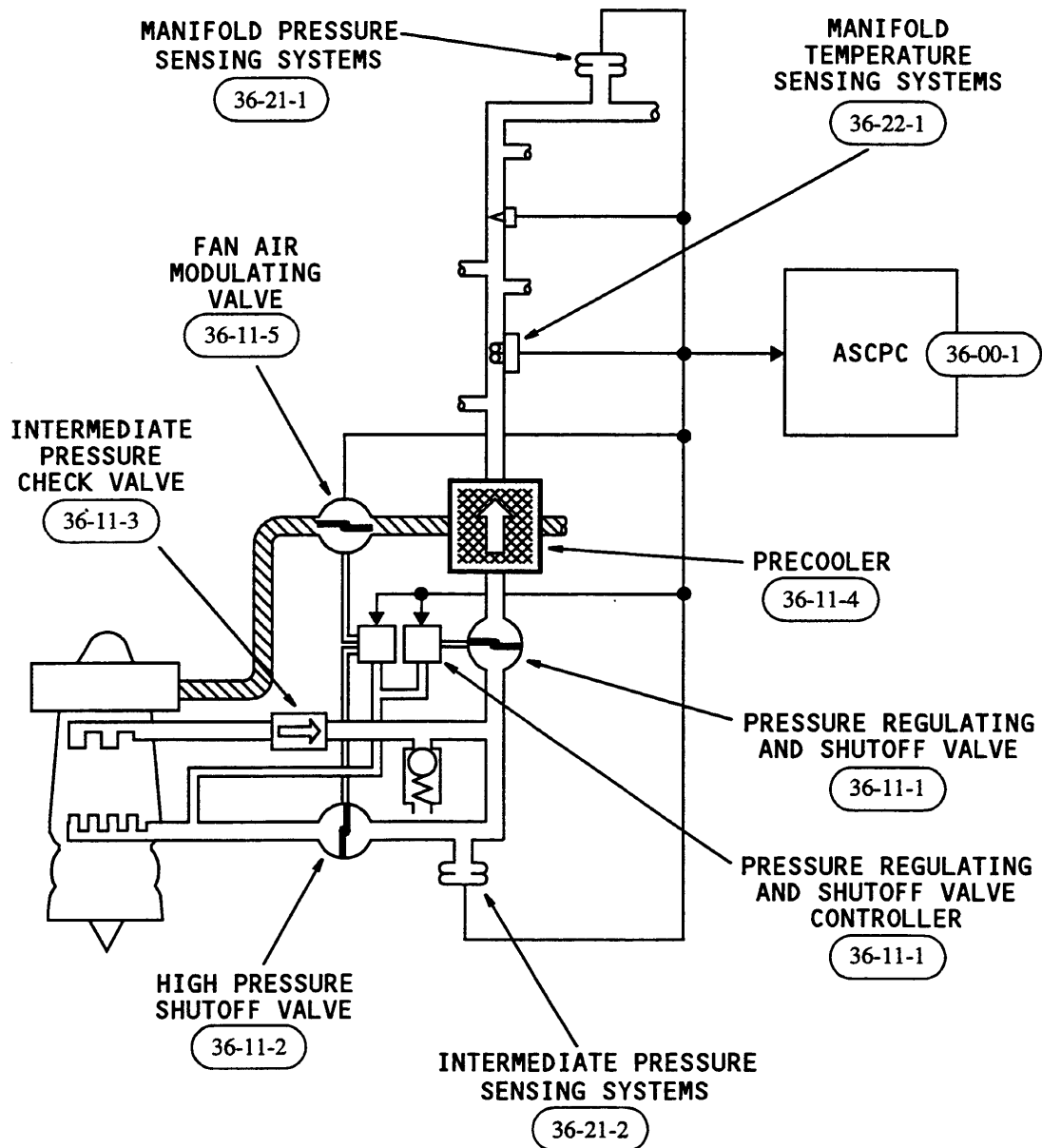
BLEED AIR PANEL (P5)



AIR SUPPLY SYSTEM



ENGINE AIR SUPPLY SYSTEM



AIR SYNOPTIC DISPLAY

(36-20-1)

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-00-01	Air Supply and Cabin Pressure Controllers (ASCPC) Primary (Digital) Controllers "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) May be inoperative deactivated provided: a) Both ASCPC backup (analog) controllers are verified to operate normally, b) Both associated CTC channels are verified to operate normally ONCE EACH FLIGHT DAY (Log Book Entry Required), c) Opposite engine bleed system operates normally, d) Center system hydraulic demand pump on opposite side operates normally, and e) Appropriate performance adjustments are applied. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-00-01	Bleed Air System Control Panel	___ Air Supply and Cabin Pressure Controller INOP

(O) PROCEDURES

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. The AIR synoptic may display incomplete information or some information may be missing.
2. Operate the wing anti-ice manually.
 - a. Position WING ANTI-ICE selector OFF.
 - b. For flaps up and wing anti-ice required (do not use during takeoff and landing):
 - 1) Position the ENG Bleed switch associated with the inoperative ASCP controller OFF.
NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
 - 2) Position WING ANTI-ICE selector ON, then OFF as required.
 - 3) Prior to landing, position the ENG Bleed switch associated with the inoperative ASCP controller ON.
3. If an engine or engine bleed system fails enroute, position the associated ENG Bleed switch OFF.

CONTINUED NEXT PAGE

36-00-01	AIR SUPPLY AND CABIN PRESSURE CONTROLLERS (ASCPC) PRIMARY (DIGITAL) CONTROLLERS
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,400 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.9%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 3,300 lbs. 2. Reduce T/O CLIMB LIMIT by 3,300 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 3,300 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 3,300 lbs.

36-00-01	AIR SUPPLY AND CABIN PRESSURE CONTROLLERS (ASCPC) PRIMARY (DIGITAL) CONTROLLERS
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,400 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.9%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 5,100 lbs. 2. Reduce T/O CLIMB LIMIT by 5,100 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 5,100 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 5,100 lbs.

CONTINUED NEXT PAGE

36-00-01	AIR SUPPLY AND CABIN PRESSURE CONTROLLERS (ASCPC) PRIMARY (DIGITAL) CONTROLLERS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 10,100 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.6%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.8%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 13,300 lbs. 2. Reduce T/O CLIMB LIMIT by 13,300 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 13,300 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 13,300 lbs.

(M) PROCEDURES

NOTE: For an engine bleed system to be operating normally, certain items associated with that system must be operative. If none of the Status Messages listed below are displayed on EICAS, that engine bleed system is considered to be operating normally.

ITEM	MEL ITEM NO.	ASSOCIATED STATUS MSG
ASCPC	36-00-01	ASCP PRIMARY CTRL L or R
PRSOV	36-11-01	BLEED PRSOV L or R
HPSOV	36-11-02	BLEED HPSOV L or R
Intmd. Press. Check Valve	36-11-03	Must be operative on remaining bleed syst.
Precoolers	36-11-04	Must be operative on remaining bleed syst.
Fan Air Mod. Valve (FAMV)	36-11-05	BLEED FAMV L or R
Manifold Press. Sensing Sys.	36-21-01	MAN PRESS SENSOR L or R
Intmd. Press. Sensing Sys.	36-21-02	BLEED PRESS SENSOR L or R
Manifold Temp. Sensing Sys.	36-22-01	BLEED TEMP SENSOR L or R

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-7

(M) PROCEDURES (Cont'd)

ONCE EACH FLIGHT DAY-Verify both ASCPC backup controllers operate normally and both associated Cabin Temperature Controllers (CTC) channels operate normally (AMM 36-00-00/901).

1. Verify (one at a time) that both ASCPC backup (analog) controllers operate normally.
 - a. For the L ASCPC primary controller:
 - 1) Start left engine (AMM 71-00-00/201).
 - 2) Shutdown the APU if running or disconnect ground air cart if connected.
 - 3) Open the P310 panel AIR SPLY L PRI and AIR SPLY L SOL circuit breakers.
 - 4) Verify normal operation of the L ASCPC backup (analog) controller.
 - a) Position the BLEED AIR Panel (P5) L ENG Bleed switch OFF and confirm that the L PACK OFF light illuminates.
 - b) Position the BLEED AIR Panel (P5) L ENG Bleed switch ON and confirm that the L PACK OFF light extinguishes.
 - 5) Shut down left engine (AMM 71-00-00/201).
 - 6) Close the P310 panel AIR SPLY L PRI and AIR SPLY L SOL circuit breakers.
 - b. For the R ASCPC primary controller:
 - 1) Start right engine (AMM 71-00-00/201).
 - 2) Shutdown the APU if running or disconnect ground cart if connected.
 - 3) Open the P210 panel AIR SPLY R PRI and AIR SPLY R SOL circuit breakers.
 - 4) Open the P310 panel AIR SPLY R SEC circuit breaker.
 - 5) Verify normal operation of the R ASCPC backup (analog) controller.
 - a) Position the BLEED AIR Panel (P5) R ENG Bleed switch OFF and confirm that the R PACK OFF light illuminates.
 - b) Position the BLEED AIR Panel (P5) R ENG Bleed switch ON and confirm that the R PACK OFF light extinguishes.
 - 6) Shut down right engine (AMM 71-00-00/201).
 - 7) Close the P210 panel AIR SPLY R PRI and AIR SPLY R SOL circuit breakers.
 - 8) Close the P310 panel AIR SPLY R SEC circuit breaker.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-8

2. Deactivate the inoperative ASCPC primary controller.
 - a. For the L ASCPC primary controller, pull and secure the P310 panel AIR SPLY L PRI and AIR SPLY L SOL circuit breakers.
 - b. For the R ASCPC primary controller:
 - 1) Pull and secure the P210 panel AIR SPLY R PRI and AIR SPLY R SOL circuit breakers.
 - 2) Pull and secure the P310 panel AIR SPLY R SEC circuit breaker.
3. **ONCE EACH FLIGHT DAY** - Verify that both associated CTC channels operate normally.

NOTE: If both channels of the associated CTC do not operate normally, the associated pack may be considered inoperative and the airplane dispatched using [MEL item 21-51-01](#).

- a. Supply electrical power on the airplane (AMM 24-22-00/201).
- b. Remove pneumatic power from the airplane (AMM 36-00-00/201).
- c. Position associated Air Conditioning panel (P5) PACK switch OFF.
- d. For the L ASCPC primary controller inoperative:
 - 1) Verify the left CTC channel 1 operates normally.
 - a) Open the P110 panel L CTC CH 2 (AC) and L CTC CH 2 (DC) circuit breakers.
 - b) Wait ten (10) seconds.
 - c) Confirm CABIN TEMP CTRL L status message is not displayed.
 - d) Close the P110 panel L CTC CH 2 (AC) and L CTC CH 2 (DC) circuit breakers.
 - 2) Verify the left CTC channel 2 operates normally.
 - a) Open the P110 panel L CTC CH 1 (AC) and L CTC CH 1 (DC) circuit breakers.
 - b) Wait ten (10) seconds.
 - c) Confirm CABIN TEMP CTRL L status message is not displayed.
 - d) Close the P110 panel L CTC CH 1 (AC) and L CTC CH 1 (DC) circuit breakers.
- e. For the R ASCPC primary controller inoperative:
 - 1) Verify the right CTC channel 1 operates normally.
 - a) Open the P210 panel R CTC CH 2 (AC) and R CTC CH 2 (DC) circuit breakers.
 - b) Wait ten (10) seconds.
 - c) Confirm CABIN TEMP CTRL R status message is not displayed.
 - d) Close the P210 panel R CTC CH 2 (AC) and R CTC CH 2 (DC) circuit breakers.
 - 2) Verify the right CTC channel 2 operates normally.
 - a) Open the P210 panel R CTC CH 1 (AC) and R CTC CH 1 (DC) circuit breakers.
 - b) Wait ten (10) seconds.
 - c) Confirm CABIN TEMP CTRL R status message is not displayed.
 - d) Close the P210 panel R CTC CH 1 (AC) and R CTC CH 1 (DC) circuit breakers.
- f. Position associated PACK switch AUTO.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
36-11-01A	Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) One valve (PRSOV) and/or the associated controller (PRSOVC) may be inoperative provided: a) Associated PRSOV is locked CLOSED, b) Opposite engine bleed system operates normally, c) Associated engine bleed air switch remains OFF, d) Left and right bleed isolation systems operate normally, e) Center bleed isolation system operates normally, f) Both packs operate normally, g) Both outflow valves operate normally, h) APU is used as air source for center system hydraulic demand pumps for takeoff and landing, i) Appropriate performance adjustments are applied, and j) The associated Engine Idle Selection System is deferred per MEL 73-21-01.	
36-11-01B	Pressure Regulating and Shutoff Systems ENG Bleed Air Switch Lights (OFF Lights)	Y	2	0	C	
36-11-01C	Pressure Regulating and Shutoff Systems ENG Bleed Air Switch Lights (ON Lights)	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-11-01A	Bleed Air System Control Panel	___ PRSOV / PRSOVC INOP
36-11-01B	Bleed Air System Control Panel	___ PRSOV / PRSOVC ENG Bleed Air Switch OFF Light(s) INOP
36-11-01C	Bleed Air System Control Panel	___ PRSOV / PRSOVC ENG Bleed Air Switch ON Light(s) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-10

(O) PROCEDURES

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is **not** allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure **must** be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position associated ENG Bleed air switch OFF for the inoperative system.
NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.
2. For takeoff, use the APU as an air source.
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches CLOSED.
 - d. EICAS advisory alerting message BLEED LOSS WING L (R) will be displayed. Perform the associated Delta 777 QRH Non-Normal procedure.
 - e. After takeoff with flaps up:
 - 1) Position L ISLN and R ISLN switches to AUTO.
 - 2) Position Wing Anti-Ice switch to AUTO.
 - 3) Configure the APU as required.
3. In the event of inflight failure of the opposite engine or the engine bleed air system, use the APU to maintain cabin pressurization at or below FL220:
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position both ENG Bleed switches OFF.
 - d. Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
 - e. Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
4. Prior to Landing, use the APU as an air source.
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches to AUTO.
 - d. In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

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36-11-01A	PRESSURE REGULATING AND SHUTOFF SYSTEMS (PRSOV, PRSOVC)
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 6,800 lbs. 2. Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 900 lbs. 2. Reduce T/O CLIMB LIMIT by 900 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

36-11-01A	PRESSURE REGULATING AND SHUTOFF SYSTEMS (PRSOV, PRSOVC)
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 8,200 lbs. 2. Reduce T/O CLIMB LIMIT by 8,200 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 900 lbs. 2. Reduce T/O CLIMB LIMIT by 900 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

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36-11-01A	PRESSURE REGULATING AND SHUTOFF SYSTEMS (PRSOV, PRSOVC)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 14,800 lbs. 2. Reduce T/O CLIMB LIMIT by 14,800 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 5,350 lbs. 2. Reduce T/O CLIMB LIMIT by 5,350 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

(M) PROCEDURES

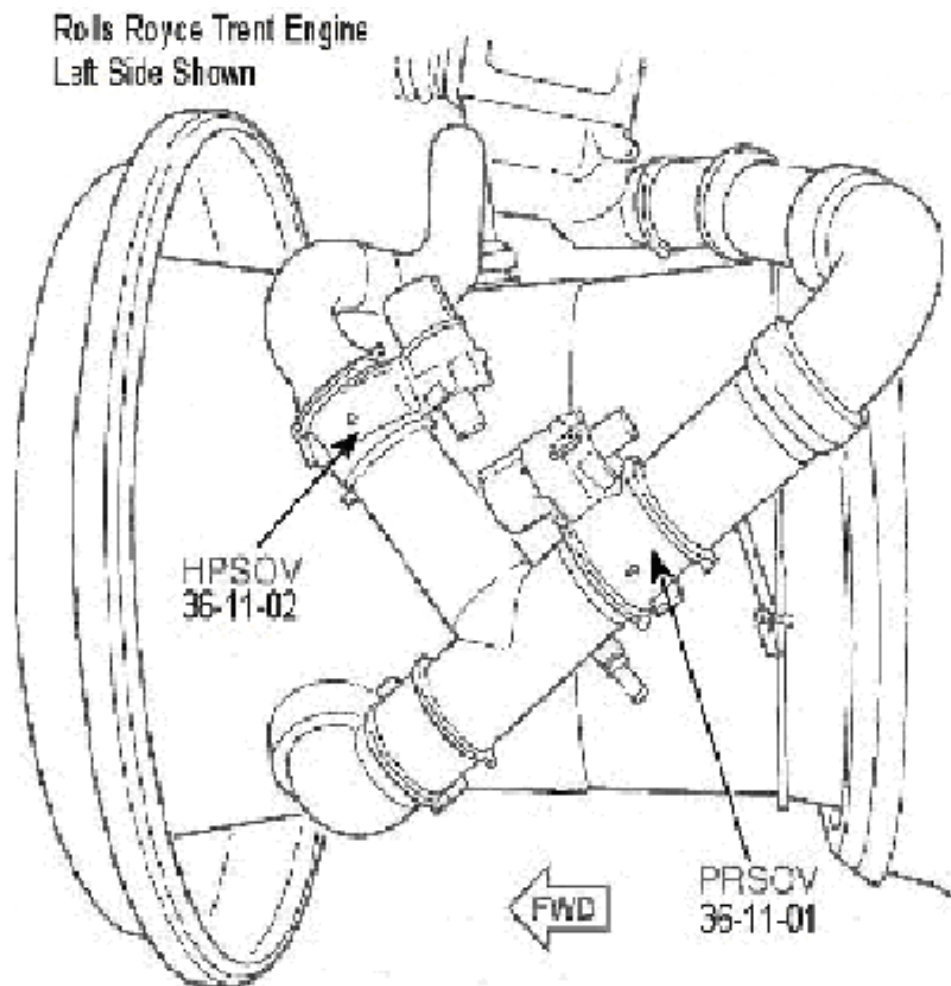
- NOTE 1: For a pack to be operating normally, certain items associated with that system must be operative. [Refer to MEL 21-51-01](#) for a listing of those items.
- NOTE 2: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.
- NOTE 3: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight. This requires that the associated Engine Idle Selection System also be [deferred per MEL 73-21-01](#).

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(M) PROCEDURES (Cont'd)**For RR Engines (-200ER)**[Link to Learning Video – \(36-11-01A PRSOV\)](#)

Lock the inoperative Pressure Regulating and Shutoff Valve (PRSOV) in the CLOSED position.

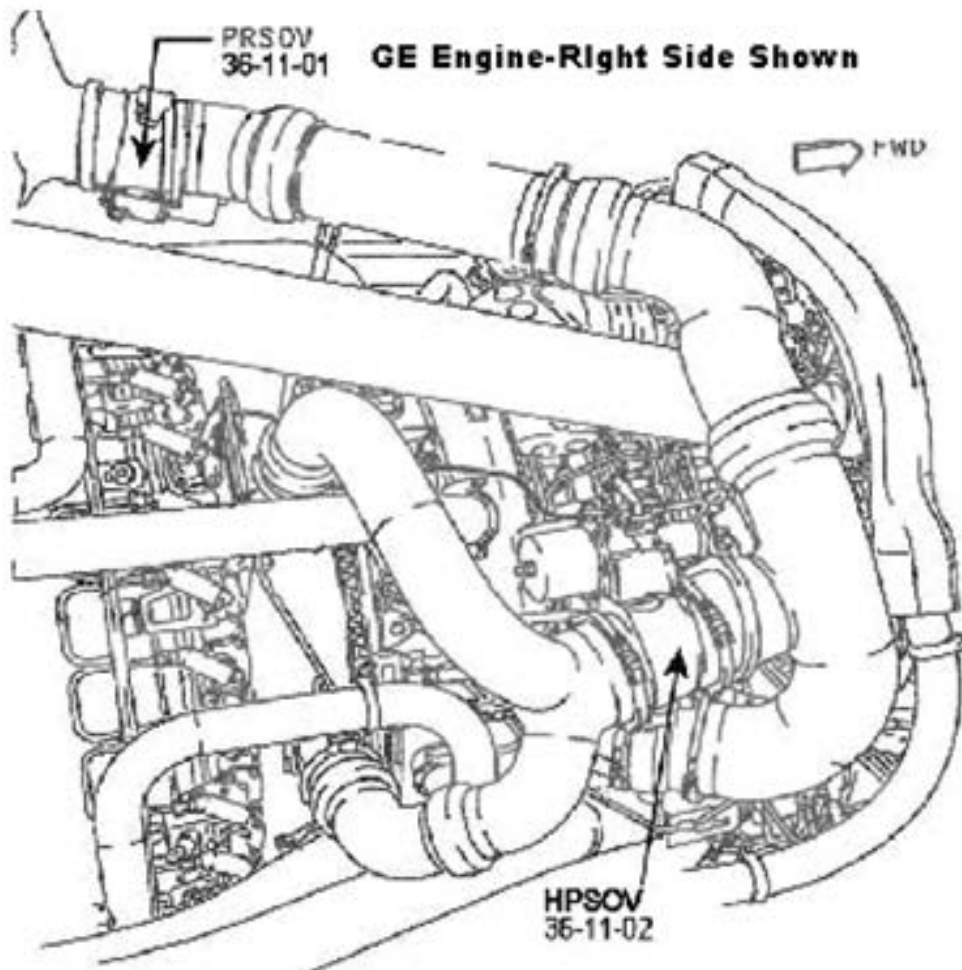
1. Deactivate the associated thrust reverser for ground maintenance.
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
4. Lock the PRSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valve.
5. Close the opened thrust reverser sleeve and fan cowl panel.
6. Activate the associated thrust reverser.

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(M) PROCEDURES (Cont'd)**For GE Engines (-200LR)**

Lock the inoperative Pressure Regulating and Shutoff Valve (PRSOV) in the CLOSED position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
5. Lock the PRSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valve.
6. Close the opened thrust reverser sleeve and fan cowl panel.
7. Activate the associated thrust reverser.
8. Activate the leading edge slats.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-11-02A	High Pressure Shutoff Valves (HPSOV) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) One may be inoperative provided: a) Inoperative HPSOV is locked CLOSED, b) Opposite engine bleed system operates normally, c) Both outflow valves operate normally, and d) Associated engine bleed air is cycled OFF, then ON at 55% N1 or greater before takeoff. NOTE 1: If MEL Item 36-11-01 is already on deferral, this MEL Item may not be used on the same engine. NOTE 2: If MEL item 36-11-01 is already on deferral, MEL item 36-11-02B must be used in lieu of MEL item 36-11-02A.
36-11-02B	High Pressure Shutoff Valves (HPSOV) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) One may be inoperative provided: a) Inoperative HPSOV is locked closed, b) Associated PRSOV is locked closed, c) Opposite engine bleed system operates normally, d) Associated engine bleed air switch remains OFF, e) Left and right bleed isolation systems operate normally, f) Center bleed isolation system operates normally, g) Both packs operate normally, h) Both outflow valves operate normally, i) APU is used as air source for center system hydraulic demand pumps for takeoff and landing, j) Appropriate performance adjustments are applied, and k) The associated Engine Idle Selection System is deferred per MEL 73-21-01 .

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-11-02A	Bleed Air System Control Panel	___ High Pressure Shutoff Valve (HPSOV) INOP
36-11-02B	Bleed Air System Control Panel	___ High Pressure Shutoff Valve (HPSOV) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-16

(O) PROCEDURES

36-11-02A

NOTE 1: Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

NOTE 2: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

NOTE 3: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure **must** be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. After engine start, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

NOTE: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.

2. Before takeoff, at 55% N1 or greater, select the associated ENG Bleed switch OFF, then ON.
3. In the event of an engine bleed failure on the opposite engine, maintain a minimum of 76% N1 on the engine with the inoperative HPSOV when the associated Engine Bleed switch is selected ON.
4. Prior to landing:
 - a. If the APU is available:
 - 1) Position APU Bleed switch to AUTO.
 - 2) Start the APU if it is not running.
 - 3) Position L ISLN and R ISLN switches to AUTO.
 - 4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.
 - b. If the APU is not available:
 - 1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON.

36-11-02B

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position associated ENG Bleed air switch OFF for the inoperative system.

NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

2. For takeoff, use the APU as an air source.
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches CLOSED.
 - d. EICAS advisory alerting message BLEED LOSS WING L (R) will be displayed. Perform the associated Delta 777 QRH Non-Normal procedure.
 - e. After takeoff with flaps up:
 - 1) Position L ISLN and R ISLN switches to AUTO.
 - 2) Position Wing Anti-Ice switch to AUTO.
 - 3) Configure the APU as required.

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3. In the event of inflight failure of the opposite engine or the engine bleed air system, use the APU to maintain cabin pressurization at or below FL220:
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position both ENG Bleed switches OFF.
 - d. Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
 - e. Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
4. Prior to Landing, use the APU as an air source.
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches to AUTO.
 - d. In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-02B	HIGH PRESSURE SHUTOFF VALVES (HPSOV)
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage. 2. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 6,800 lbs. 2. Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 900 lbs. 2. Reduce T/O CLIMB LIMIT by 900 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

36-11-02B	HIGH PRESSURE SHUTOFF VALVES (HPSOV)
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage. 2. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 8,200 lbs. 2. Reduce T/O CLIMB LIMIT by 8,200 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 900 lbs. 2. Reduce T/O CLIMB LIMIT by 900 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-18

36-11-02B	HIGH PRESSURE SHUTOFF VALVES (HPSOV)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage. 2. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 14,800 lbs. 2. Reduce T/O CLIMB LIMIT by 14,800 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 5,350 lbs. 2. Reduce T/O CLIMB LIMIT by 5,350 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

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(M) PROCEDURES

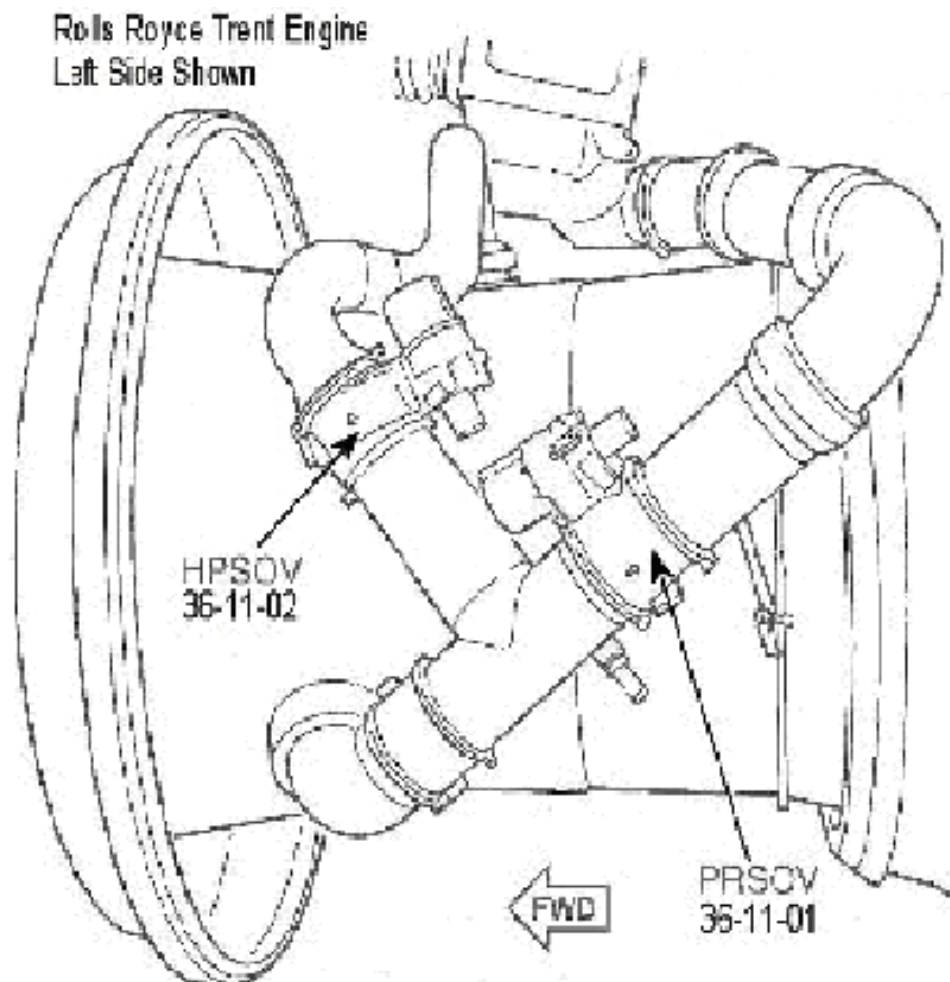
36-11-02A

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

For RR Engines (-200ER)[Link to Learning Video – \(36-11-02A HPSOV\)](#)

Lock the inoperative High Pressure Shutoff Valve (HPSOV) in the CLOSED position.

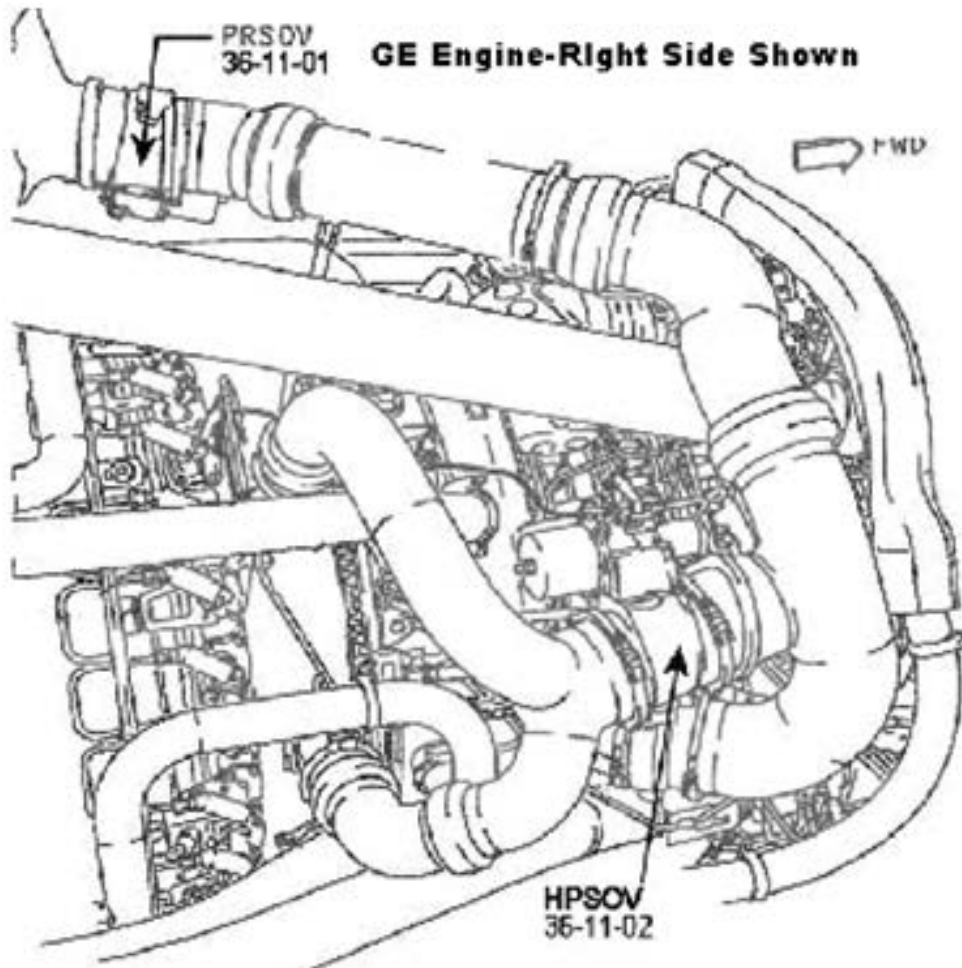
1. Deactivate the associated thrust reverser for ground maintenance.
2. Gain access to the HPSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
3. Lock the HPSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valve.
4. Close the opened thrust reverser sleeve and fan cowl panel.
5. Activate the associated thrust reverser.

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(M) PROCEDURES (Cont'd)**For GE Engines (-200LR)**

Lock the inoperative High Pressure Shutoff Valve (HPSOV) in the CLOSED position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Gain access to the HPSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
4. Lock the HPSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valve.
5. Close the opened thrust reverser sleeve and fan cowl panel.
6. Activate the associated thrust reverser.
7. Activate the leading edge slats.
8. With both engines shutdown, position associated flight deck Bleed Air panel (P11) ENG bleed switch ON to OFF and back ON.



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(M) PROCEDURES (Cont'd)

36-11-02B

NOTE 1: For a pack to be operating normally, certain items associated with that system must be operative.
[Refer to MEL 21-51-01](#) for a listing of those items.

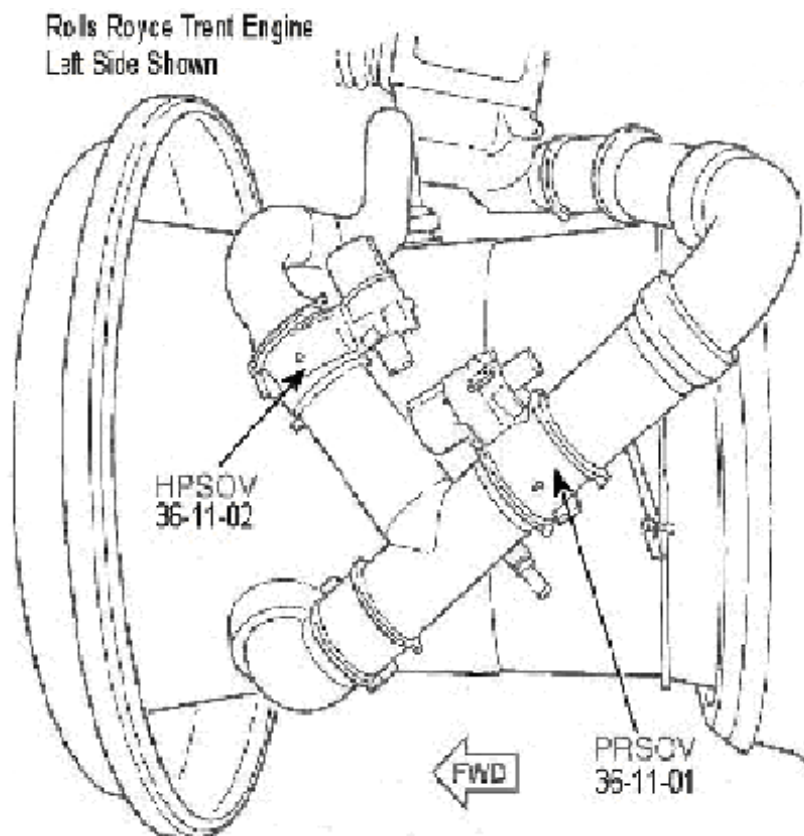
NOTE 2: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.

NOTE 3: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight. This requires that the associated Engine Idle Selection System also be [deferred per MEL 73-21-01](#).

For RR Engines (-200ER)[Link to Learning Video – \(36-11-02B HPSOV\)](#)[Link to Learning Video – \(36-11-01A PRSOV\)](#)

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and associated Pressure Regulating and Shutoff Valve (PRSOV) in the CLOSED position.

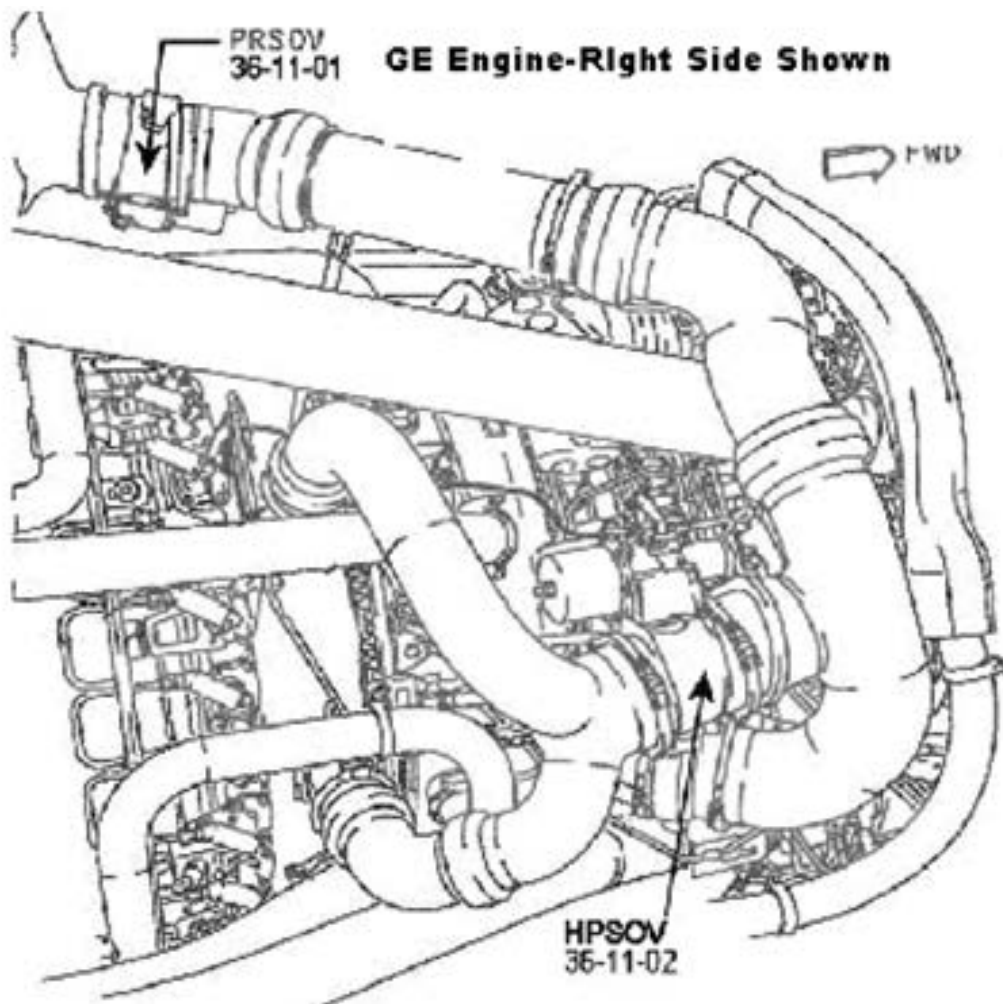
1. Deactivate the associated thrust reverser for ground maintenance.
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
4. Lock the HPSOV and PRSOV in the CLOSED positions by following the MANUAL LOCKING instructions placard on the valve.
5. Close the opened thrust reverser sleeve and fan cowl panel.
6. Activate the associated thrust reverser.

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(M) PROCEDURES (Cont'd)**For GE Engines (-200LR)**

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and associated Pressure Regulating and Shutoff Valve (PRSOV) in the CLOSED position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
5. Lock the HPSOV and PRSOV in the CLOSED positions by following the MANUAL LOCKING instructions placard on the valve.
6. Close the opened thrust reverser sleeve and fan cowl panel.
7. Activate the associated thrust reverser.
8. Activate the leading edge slats.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-11-03	Intermediate Pressure Check Valves (IPCV) (-200ER, -200LR) "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) May be inoperative OPEN provided: a) Associated HPSOV is locked CLOSED, b) Associated PRSOV is locked CLOSED, c) Opposite engine bleed system operates normally, d) Associated engine bleed air switch remains OFF, e) Left and right bleed isolation systems operate normally, f) Center bleed isolation system operates normally, g) Both packs operate normally, h) Both outflow valves operate normally, i) APU is used as air source for center system hydraulic demand pumps for takeoff and landing, j) Appropriate performance adjustments are applied, and k) The associated Engine Idle Selection System is deferred per MEL 73-21-01 .

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-11-03	Bleed Air System Control Panel	___ Intermediate Pressure Check Valve (IPCV) INOP

(O) PROCEDURES

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure **must** be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position associated ENG Bleed air switch OFF for the inoperative system.

NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

2. For takeoff, use the APU as air source.
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches CLOSED.
 - d. EICAS advisory alerting message BLEED LOSS WING L (R) will be displayed. Perform the associated Delta 777 QRH Non-Normal procedure.
 - e. After takeoff with flaps up:
 - 1) Position L ISLN and R ISLN switches to AUTO.
 - 2) Position Wing Anti-Ice switch to AUTO.
 - 3) Configure the APU as required.

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3. In the event of inflight failure of the opposite engine or the engine bleed air system, use the APU to maintain cabin pressurization at or below FL220:
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position both ENG Bleed switches OFF.
 - d. Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
 - e. Position L ISLN and R ISLN switches to AUTO for remainder of flight (including landing).
4. Prior to Landing, use the APU as an air source.
 - a. Position APU bleed air switch to AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches to AUTO.
 - d. In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-11-03 INTERMEDIATE PRESSURE CHECK VALVES (IPCV)	
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage. 2. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 6,800 lbs. 2. Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 900 lbs. 2. Reduce T/O CLIMB LIMIT by 900 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

36-11-03 INTERMEDIATE PRESSURE CHECK VALVES (IPCV)	
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage. 2. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 8,200 lbs. 2. Reduce T/O CLIMB LIMIT by 8,200 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 900 lbs. 2. Reduce T/O CLIMB LIMIT by 900 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

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36-11-03	INTERMEDIATE PRESSURE CHECK VALVES (IPCV)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage. 2. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACK ON 1. Reduce RATOW by 14,800 lbs. 2. Reduce T/O CLIMB LIMIT by 14,800 lbs. TAKEOFF – PACKS OFF 1. Reduce RATOW by 5,350 lbs. 2. Reduce T/O CLIMB LIMIT by 5,350 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

(M) PROCEDURES

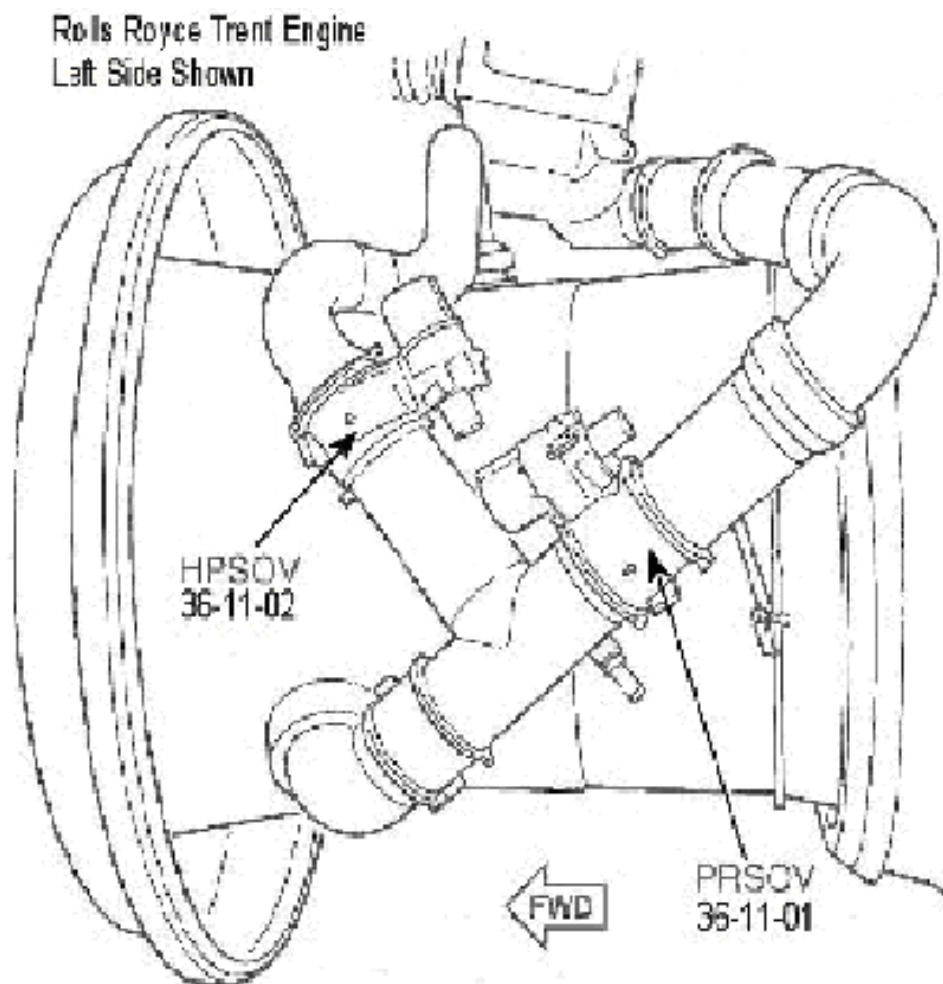
- NOTE 1: For a pack to be operating normally, certain items associated with that system must be operative. [Refer to MEL 21-51-01](#) for a listing of those items.
- NOTE 2: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.
- NOTE 3: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight. This requires that the associated Engine Idle Selection System also be [deferred per MEL 73-21-01](#).

CONTINUED NEXT PAGE

(M) PROCEDURES (Cont'd)**For RR Engines (-200ER)**[Link to Learning Video – \(36-11-02B HPSOV\)](#)[Link to Learning Video – \(36-11-01A PRSOV\)](#)

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve in the CLOSED position.

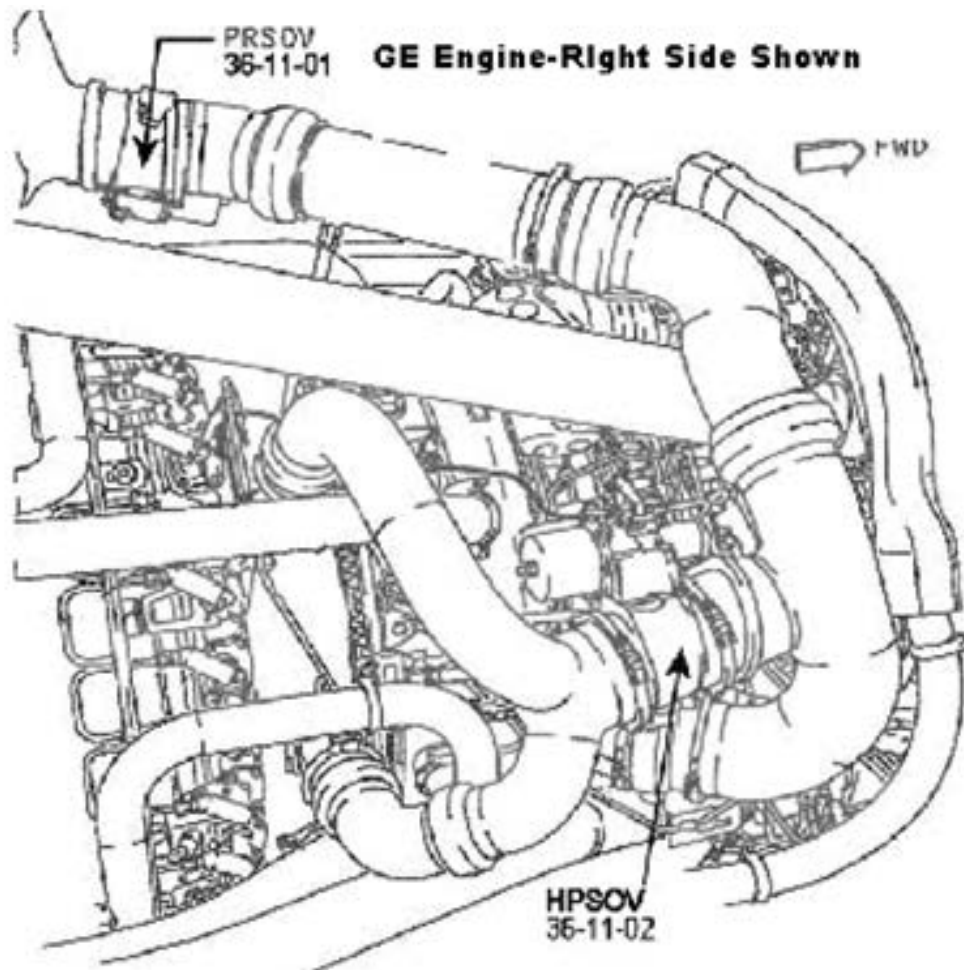
1. Deactivate the associated thrust reverser for ground maintenance.
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
4. Lock the HPSOV and PRSOV in the CLOSED positions by following the MANUAL LOCKING instructions placard on the valve.
5. Close the opened thrust reverser sleeve and fan cowl panel.
6. Activate the associated thrust reverser.

**CONTINUED NEXT PAGE**

For GE Engines (-200LR)

Lock the inoperative High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve in the CLOSED position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
5. Lock the HPSOV and PRSOV in the CLOSED positions by following the MANUAL LOCKING instructions placard on the valve.
6. Close the opened thrust reverser sleeve and fan cowl panel.
7. Activate the associated thrust reverser.
8. Activate the leading edge slats.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-11-04	Precoolers "DISP.APPR.REQ'D."	N	2	1 C	(O)(M) Airplane may be operated with damage to one precooler provided: a) It is verified that precooler airflow is not completely blocked, b) Precooler bleed air leakage is verified within normal limits, and c) Opposite engine bleed system operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-11-04	Bleed Air System Control Panel	___ Precooler INOP

(O) PROCEDURES

In the event of inflight failure of the opposite engine or engine bleed air system, the air demand may exceed the capability of the engine with damaged precooler, which may result in bleed system shutdown. The APU can be used to maintain cabin pressurization at or below FL220.

1. Position APU bleed air switch to AUTO
2. Start the APU if it is not running.
3. Position both ENG bleed switches OFF.
4. Position WING ANTI-ICE selector OFF (wing anti-ice is not available for remainder of flight).

36-11-04	PRECOOLERS
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-29

(M) PROCEDURES

NOTE 1: This MEL item allows dispatch with damage to one precooler that reduces cooling airflow. If a precooler is inoperative (cooling airflow blocked), the associated engine bleed system is rendered inoperative and must be repaired or dispatched per [MEL item 36-00-01](#).

NOTE 2: If precooler bleed leakage is not within normal limits the airplane must be repaired.

NOTE 3: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.

The damaged precooler must be inspected to verify that:

1. Precooler airflow is not completely blocked.
2. Precooler leakage remains within normal limits.
 - a. Small air leaks are satisfactory.
 - b. Large air leaks must be repaired.

NOTE: Large air leakage is when you feel the airflow with your hand at a distance of 12 inches or greater from a point on the duct joint.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-11-05	Fan Air Modulation Valves (FAMV) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative provided: a) Valve is locked full OPEN, b) Opposite engine bleed system operates normally, and c) Appropriate performance adjustments are applied. NOTE: This MEL Item may not be used on the same engine if MEL Item 36-11-01 is already in use on that engine.

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-11-05	Bleed Air System Control Panel	___ Fan Air Modulation Valve (FAMV) INOP

(O) PROCEDURES

NOTE: Aft cabin temperature control may be degraded when dispatching with right FAMV locked full open.

1. Operate the wing anti-ice manually.
 - a. Position WING ANTI-ICE selector OFF.
 - b. With flaps up, if wing anti-ice is required (do not use during takeoff and landing):
 - 1) Position the ENG Bleed switch associated with the inoperative FAMV OFF.

NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

- 2) Position WING ANTI-ICE selector ON, then OFF as required.
- 3) Prior to landing, position the ENG Bleed switch associated with the inoperative FAMV ON.

36-11-05	FAN AIR MODULATION VALVES (FAMV)
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,400 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.9%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 3,300 lbs. 2. Reduce T/O CLIMB LIMIT by 3,300 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 3,300 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 3,300 lbs.

CONTINUED NEXT PAGE

36-11-05 FAN AIR MODULATION VALVES (FAMV)	
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,400 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.9%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 5,100 lbs. 2. Reduce T/O CLIMB LIMIT by 5,100 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 5,100 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 5,100 lbs.

36-11-05 FAN AIR MODULATION VALVES (FAMV)	
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 10,100 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.6%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.8%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 13,300 lbs. 2. Reduce T/O CLIMB LIMIT by 13,300 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 13,300 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 13,300 lbs.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-32

(M) PROCEDURES

NOTE: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.

For RR Engines (-200ER)

Lock the inoperative Fan Air Modulating Valve (FAMV) in the OPEN position.

1. Deactivate the associated thrust reverser for ground maintenance.
2. Gain access to the FAMV by opening the appropriate fan cowl panel and thrust reverser sleeve.
3. Lock the FAMV in the OPEN position by following the MANUAL LOCKING instructions placard on the valve.
4. Close the opened thrust reverser sleeve and fan cowl panel.
5. Activate the associated thrust reverser.

For GE Engines (-200LR)

Lock the inoperative Fan Air Modulating Valve (FAMV) in the OPEN position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Gain access to the FAMV by opening the appropriate fan cowl panel and thrust reverser sleeve.
4. Lock the FAMV in the OPEN position by following the MANUAL LOCKING instructions placard on the valve.
5. Close the opened thrust reverser sleeve and fan cowl panel.
6. Activate the associated thrust reverser.
7. Activate the leading edge slats.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-12-01A	Left and Right Isolation Systems (Valve and/or Indication) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative provided: a) Valve is locked CLOSED after engine start, b) Associated valve switch remains in the CLOSED position, c) Center bleed isolation system operates normally, d) Both engine bleed systems operate normally, e) Isolation valve on opposite side is selected CLOSED for takeoff and landing, and selected AUTO with flaps up, and f) APU is used as air source for center system hydraulic demand pumps for takeoff and landing.
36-12-01B	Left and Right Isolation Systems (Valve and/or Indication) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative locked OPEN provided: a) Both center system hydraulic demand pumps operate normally, and b) Appropriate performance adjustments are applied.
36-12-01C	Left and Right Isolation Systems ISLN Switch Lights (CLOSED Lights)	Y	2	0	C
36-12-01D	Left and Right Isolation Systems ISLN Switch Lights (AUTO Lights)	Y	2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-12-01A	Bleed Air System Control Panel	___ Isolation Valve / Indication System INOP
36-12-01B	Bleed Air System Control Panel	___ Isolation Valve / Indication System INOP
36-12-01C	Bleed Air System Control Panel	___ Isolation Valve / Indication System ISLN Switch CLOSED Light(s) INOP
36-12-01D	Bleed Air System Control Panel	___ Isolation Valve / Indication System ISLN Switch AUTO Light(s) INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-34

(O) PROCEDURES

36-12-01A

NOTE 1: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

NOTE 2: APU or crossbleed air is not available for starting the associated engine when the L or R isolation valve is locked closed.

NOTE 3: The flight deck Air Synoptic may display the inoperative valve as open.

For takeoff and landing use the APU as air source.

1. Position APU bleed air switch to AUTO.
2. Start the APU if it is not running.
3. Position L ISLN and R ISLN switches CLOSED.
4. After takeoff is completed, position the operative ISLN switch AUTO (inoperative ISLN switch remains CLOSED) and configure the APU as required.

CONTINUED NEXT PAGE

36-12-01A LEFT AND RIGHT ISOLATION SYSTEMS – VALVE AND/OR INDICATION (LOCKED CLOSED)	
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None
	LANDING None

36-12-01B

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

Position C ISLN switch CLOSED for takeoff and landing.

36-12-01B LEFT AND RIGHT ISOLATION SYSTEMS – VALVE AND/OR INDICATION (LOCKED OPEN)	
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 9,600 lbs. 2. Reduce T/O CLIMB LIMIT by 1,400 lbs.
	LANDING None

CONTINUED NEXT PAGE

36-12-01B	LEFT AND RIGHT ISOLATION SYSTEMS – VALVE AND/OR INDICATION (LOCKED OPEN)
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 9,600 lbs. 2. Reduce T/O CLIMB LIMIT by 1,700 lbs. LANDING None

(M) PROCEDURES

36-12-01A

Lock the inoperative isolation valve in the CLOSED position after engine start:

1. Gain access to the inoperative isolation valve by opening the appropriate Blowout Door (195QL for left valve or 196QR for right valve).
2. Lock the isolation valve in the CLOSED position by following the MANUAL LOCK instructions placard on the valve.

NOTE: APU or crossbleed air is not available for starting the associated engine when the L or R isolation valve is locked closed. For isolation valve locked CLOSED, the associated engine **must** be started and left running before locking the valve CLOSED.

3. Position associated BLEED AIR Panel (P5) Bleed ISLN switch to CLOSED.
4. Close the opened Blowout Door.

36-12-01B

Lock the inoperative isolation valve in the OPEN position.

1. Gain access to the inoperative isolation valve by opening the appropriate Blowout Door (195QL for left valve or 196QR for right valve).
2. Lock the isolation valve in the OPEN position by following the MANUAL LOCK instructions placard on the valve.
3. Position associated BLEED AIR Panel (P5) Bleed ISLN switch to AUTO.
4. Close the opened Blowout Door.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-12-02A	Center Isolation System (Valve and/or Indication) "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided: a) Valve is locked CLOSED after engine start, b) Both center system hydraulic demand pumps operate normally, c) Left and right isolation valves operate normally, d) Both engine bleed systems operate normally, and e) Appropriate performance adjustments are applied.
36-12-02B	Center Isolation System (Valve and/or Indication)	N	1	0	C (O)(M) May be inoperative provided: a) Valve is locked OPEN, b) Left and right isolation valves are selected CLOSED for takeoff and landing, c) APU is used as air source for center system hydraulic demand pumps for takeoff and landing, and d) Left or right isolation valve is selected AUTO with flaps up.
36-12-02C	Center Isolation System ISLN Switch Light (CLOSED Light)	Y	1	0	C
36-12-02D	Center Isolation System ISLN Switch Light (AUTO Light)	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-12-02A	Bleed Air System Control Panel	Center Isolation Valve / Indication System INOP
36-12-02B	Bleed Air System Control Panel	Center Isolation Valve / Indication System INOP
36-12-02C	Bleed Air System Control Panel	Center Isolation Valve / Indication System ISLN Switch CLOSED Light INOP
36-12-02D	Bleed Air System Control Panel	Center Isolation Valve / Indication System ISLN Switch AUTO Light INOP

(O) PROCEDURES

36-12-02A

NOTE 1: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

NOTE 2: APU or crossbleed air is not available for starting the right engine when the center isolation valve is locked CLOSED.

NOTE 3: The flight deck Air Synoptic may display the inoperative valve as open.

CONTINUED NEXT PAGE

36-12-02A	CENTER ISOLATION SYSTEM / VALVE AND/OR INDICATION
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 9,600 lbs. 2. Reduce T/O CLIMB LIMIT by 1,400 lbs. LANDING None

36-12-02A	CENTER ISOLATION SYSTEM VALVE AND/OR INDICATION
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 9,600 lbs. 2. Reduce T/O CLIMB LIMIT by 1,700 lbs. LANDING None

36-12-02B

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

For takeoff and landing use the APU as an air source.

1. Position APU bleed air switch AUTO.
2. Start the APU if it is not running.
3. Position L ISLN and R ISLN switches CLOSED.
4. After takeoff is completed, position L ISLN or R ISLN (one) switch AUTO and configure the APU as required.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-39

(M) PROCEDURES

36-12-02A

Lock the center isolation valve in the CLOSED position after engine start.

1. Gain access to center isolation valve by opening Bleed Air Valve Door 196NR.
2. Lock the isolation valve in the CLOSED position by following the MANUAL LOCK instructions placard on the valve.

NOTE: APU or crossbleed air is not available for starting the right engine when center isolation valve is locked CLOSED. For center isolation valve locked CLOSED, the right engine must be started and left running before locking the valve CLOSED.

3. Position BLEED AIR Panel (P5) Bleed C ISLN switch to CLOSED.
4. Close Bleed Air Valve Door 196NR.

36-12-02B

Lock the center isolation valve in the OPEN position.

1. Gain access to center isolation valve by opening Bleed Air Valve Door 196NR.
2. Lock the isolation valve in the OPEN position by following the MANUAL LOCK instructions placard on the valve.
3. Position BLEED AIR Panel (P5) Bleed C ISLN switch to AUTO.
4. Close Bleed Air Valve Door 196NR.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
36-12-03A	APU Bleed Air Shutoff System (Valve and/or Indication) "DISP.APPR.REQ'D."	N	1	0	C	(O)(M) May be inoperative provided: a) Other procedures do not require APU as a pneumatic source, b) Valve is locked CLOSED, c) APU bleed switch remains OFF, and d) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized NOTE: APU may be used for electrical power.
36-12-03B	APU Bleed Air Shutoff System (Valve Indication) "DISP.APPR.REQ'D."	N	1	0	C	(O)(M) May be inoperative provided: a) Other procedures do not require APU as a pneumatic source, b) APU bleed air valve is verified to operate normally PRIOR TO EACH DEPARTURE (Log Book Entry Required), c) APU bleed switch remains OFF for flight, and d) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized Repetitive Check Required (Yellow Placard) NOTE: APU may be used for electrical power, both inflight and on ground. APU may be used for pneumatic power for GROUND OPERATIONS ONLY.
36-12-03C	APU Bleed Air Shutoff System APU Switch Light (OFF Light)	Y	1	0	C	
36-12-03D	APU Bleed Air Shutoff System APU Switch Light (AUTO Light)	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-12-03A	Bleed Air System Control Panel	APU Bleed Air Shutoff Valve / Indication System INOP
36-12-03B	Bleed Air System Control Panel	APU Bleed Air Shutoff Valve Indication System INOP
36-12-03C	Bleed Air System Control Panel	APU Bleed Air Shutoff System APU Switch Light OFF Light INOP
36-12-03D	Bleed Air System Control Panel	APU Bleed Air Shutoff System APU Switch Light AUTO Light INOP

CONTINUED NEXT PAGE

(O) PROCEDURES

36-12-03A

NOTE 1: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

NOTE 2: APU may be used for electrical power, both inflight and on the ground. Additionally, pneumatic starting of the APU is **not** possible.

1. Dispatch is **not** allowed if APU is required as a bleed air source for other procedures. MEL dispatch procedures for the following inoperative equipment may require APU bleed air availability:

MEL Item	Associated Status Message
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. Position APU Bleed switch OFF.

NOTE: The BLEED OFF APU advisory level EICAS message will be displayed.

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

CONTINUED NEXT PAGE

(O) PROCEDURES (Cont'd)

36-12-03B

NOTE 1: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

NOTE 2: Flight deck APU bleed air valve indications on the overhead panel (P5), Air Synoptic and EICAS Air Supply Maintenance page may not agree with the actual status of the valve. Additionally, if the APU bleed air valve is commanded open during ground operations and the valve indications incorrectly indicate the valve is closed, the BLEED OFF APU advisory level EICAS message may be displayed.

NOTE 3: **PRIOR TO EACH DEPARTURE** - APU bleed air valve must be verified by maintenance to operate normally.

1. Dispatch is **not** allowed if APU is required as a bleed air source by other procedures and the valve indications are inoperative. MEL dispatch procedures for the following inoperative equipment may require APU bleed air availability.

MEL Item	Associated Status Message
24-11-01	ELEC GEN SYS L or R IDG VALVE CLOSED L or R
24-25-01	ELEC BACKUP GEN L or R ELEC BACKUP SYS
29-11-03	HYD PUMP DEM C1 or C2
36-11-01	BLEED PRSOV L or R
36-11-02	BLEED HPSOV L or R
36-11-03	None
36-12-01	BLEED ISLN VALVE L or R
36-12-02	BLEED ISLN VALVE C
36-22-01	BLEED TEMP SENSOR L or R

2. Position APU Bleed switch OFF before takeoff. APU Bleed switch remains OFF for the flight.

NOTE: APU may be used for electrical power both inflight and on the ground, and as a pneumatic power source for ground operations only. Inflight pneumatic starting of the APU is not available with the APU Bleed switch OFF.

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

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-43

(M) PROCEDURES

36-12-03A

Lock the APU bleed air shutoff valve in the CLOSED position.

1. Gain access to the APU bleed air shutoff valve by opening the Controls Bay Access Door 313AL.
2. Lock the APU shutoff valve in the CLOSED position by following the MANUAL LOCK instructions placard on the valve.
3. Position the BLEED AIR Panel (P5) APU Bleed switch OFF.
4. Close the Controls Bay Access Door 313AL.

36-12-03B

1. Start the APU.
2. Remove all other pneumatic sources from the airplane.
 - a. Remove ground air supply if connected.
 - b. If engine(s) is running, position Bleed Air panel (P5) ENG bleed switch OFF.
3. Position the BLEED AIR Panel (P5) APU Bleed switch to AUTO.
4. Gain access to the APU bleed air shutoff valve by opening the Controls Bay Access Door 313AL.
5. Observe the APU bleed air shutoff valve knob pointer and ensure the pointer indicates the valve is OPEN.
6. Position the BLEED AIR Panel (P5) APU Bleed switch OFF.
7. Observe the APU bleed air shutoff valve knob pointer and ensure the pointer indicates the valve is CLOSED.
8. Close the Controls Bay Access Door 313AL.
9. Position the BLEED AIR Panel (P5) APU Bleed switch to AUTO.
10. Return APU to normal operating conditions as required.

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-44

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-20-01	Air Synoptic Display	Y	1	0 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-20-01	Center Display Control Panel	Air Synoptic Display INOP

OPERATIONS NOTE:

If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) may restore the missing data. Synoptic Displays containing missing data may continue to be used to the extent remaining data is useful.

NOTE: Airplane system faults will be annunciated by EICAS alerting and status messages.

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-45

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
36-21-01	Manifold Pressure / Flow Sensing Systems	N	2	1	C	May be inoperative provided the associated pack flow control valve inlet pressure sensor operates normally.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-21-01	Bleed Air System Control Panel	___ Manifold Pressure / Flow Sensing System INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
36-21-02	Intermediate Pressure Sensing Systems	N	2	1	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-21-02	Bleed Air System Control Panel	___ Intermediate Pressure Sensing System INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
36-22-01A	Manifold Temperature Sensing Systems "DISP.APPR.REQ'D."	N	2	1	C (O)(M) One may be inoperative provided: a) Associated HPSOV is locked CLOSED, b) Opposite engine bleed system operates normally, c) Both outflow valves operate normally, d) Associated engine bleed air switch is cycled OFF, then ON at 55% N1 or greater before takeoff, and e) Appropriate performance adjustments are applied.
36-22-01B	Manifold Temperature Sensing Systems "DISP.APPR.REQ'D."	N	2	1	C (O)(M) One may be inoperative provided: a) Associated HPSOV is locked closed, b) Associated PRSOV is locked closed, c) Opposite engine bleed system operates normally, d) Associated engine bleed air switch remains OFF, e) Left and right bleed isolation systems operate normally, f) Center bleed isolation system operates normally, g) Both packs operate normally, h) Both outflow valves operate normally, i) APU is used as air source for center system hydraulic demand pumps for takeoff and landing, j) Appropriate performance adjustments are applied, and k) The associated Engine Idle Selection System is deferred per MEL 73-21-01 .

MEL ITEM	TAB LOCATION	PLACARD TEXT
36-22-01A	Bleed Air System Control Panel	___ Manifold Temp Sensing System INOP
36-22-01B	Bleed Air System Control Panel	___ Manifold Temp Sensing System INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-48

(O) PROCEDURES

36-22-01A

NOTE 1: Whenever power is set below 55% N1, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with the HPSOV locked closed. The engine bleed valve can be reopened by cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

NOTE 2: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight prior to cycling the ENG bleed switch OFF, then ON at 55% N1 or greater.

NOTE 3: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. After engine start, the BLEED OFF ENG L or R advisory message will be displayed for the bleed system with HPSOV locked closed.

NOTE: When this condition occurs, the left and right bleed air manifolds will automatically be pressurized by bleed pressure from the opposite engine. Taxi and descent can be accomplished in this single bleed source configuration to avoid repetitive cycling of the Engine Bleed switch.

2. Before takeoff, at 55% N1 or greater, select the associated ENG Bleed switch OFF, then ON.
3. Operate the wing anti-ice manually.

- a. Position WING ANTI-ICE selector OFF.

- b. For flaps up and wing anti-ice required (do not use during takeoff and landing):

- 1) Position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor OFF.

NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

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

- d. Prior to landing, position the ENG Bleed switch associated with the inoperative Bleed Temp Sensor ON.

4. In the event of an engine bleed failure on the engine opposite to the inoperative Bleed Temp Sensor, maintain a minimum of 76% N1 on the engine with the inoperative Bleed Temp Sensor when the associated Engine Bleed switch is selected ON.

5. Prior to landing:

- a. If the APU is available:

- 1) Position APU Bleed switch to AUTO.

- 2) Start the APU if it is not running.

- 3) Position L ISLN and R ISLN switches to AUTO.

- 4) In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

- b. If the APU is not available:

- 1) Prior to selecting flaps 1, if the BLEED OFF ENG L or R advisory message is displayed, open the associated engine bleed valve by cycling the respective ENG bleed switch OFF, then ON.

CONTINUED NEXT PAGE

36-22-01A MANIFOLD TEMPERATURE SENSING SYSTEMS	
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,400 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.9%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 3,300 lbs. 2. Reduce T/O CLIMB LIMIT by 3,300 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 3,300 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 3,300 lbs.

36-22-01A MANIFOLD TEMPERATURE SENSING SYSTEMS	
EFFECTIVITY	-200ER with -892 Engines
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 2,400 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.9%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.9%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 5,100 lbs. 2. Reduce T/O CLIMB LIMIT by 5,100 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 5,100 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 5,100 lbs.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-50

36-22-01A	MANIFOLD TEMPERATURE SENSING SYSTEMS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Reduce ENROUTE LIMIT WT by 10,100 lbs. 2. Increase BLOCK FUEL by 0.5%. 3. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.6%. 4. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.8%.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 13,300 lbs. 2. Reduce T/O CLIMB LIMIT by 13,300 lbs. LANDING 1. Reduce RWY ALLOWABLE LANDING WT by 13,300 lbs. 2. Reduce LANDING CLIMB LIMIT WT by 13,300 lbs.

CONTINUED NEXT PAGE

36-22-01B

NOTE: (-200LR only) The APU to Pack Takeoff Procedure is not allowed. If the WDR requires APU to Pack Takeoff, the Packs Off Takeoff Procedure must be used to obtain equivalent takeoff performance. Refer to Vol 1, SP.2.

1. Position associated ENG Bleed air switch OFF for the inoperative system.

NOTE: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight.

2. For takeoff, use the APU as air source.
 - a. Position APU bleed air switch AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches CLOSED.
 - d. EICAS advisory alerting message BLEED LOSS WING L (R) will be displayed. Perform the associated Delta 777 QRH Non-Normal procedure.
 - e. After takeoff with flaps up:
 - 1) Position L ISLN and R ISLN switches AUTO.
 - 2) Position Wing Anti-Ice switch AUTO.
 - 3) Configure the APU as required.
3. In the event of inflight failure of the opposite engine or the engine bleed air system, use the APU to maintain cabin pressurization at or below FL220:
 - a. Position APU bleed air switch AUTO.
 - b. Start the APU if it is not running.
 - c. Position both ENG Bleed switches OFF.
 - d. Position WING ANTI-ICE selector OFF (wing anti-ice will not be available for remainder of flight).
 - e. Position L ISLN and R ISLN switches AUTO for remainder of flight (including landing).
4. Prior to Landing, use the APU as an air source.
 - a. Position APU bleed air switch AUTO.
 - b. Start the APU if it is not running.
 - c. Position L ISLN and R ISLN switches AUTO.
 - d. In the event of failure of the opposite engine or the engine bleed air system, position both ENG Bleed switches OFF.

36-22-01B	MANIFOLD TEMPERATURE SENSING SYSTEMS
EFFECTIVITY	-200ER with -895 Engines
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 245 lbs. for each hour of APU usage. For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – PACKS ON - Reduce RATOW by 6,800 lbs. - Reduce T/O CLIMB LIMIT by 6,800 lbs. TAKEOFF – PACKS OFF - Reduce RATOW by 900 lbs. - Reduce T/O CLIMB LIMIT by 900 lbs. LANDING - Reduce RWY ALLOWABLE LANDING WT by 6,800 lbs. - Reduce LANDING CLIMB LIMIT WT by 6,800 lbs.

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36-22-01B MANIFOLD TEMPERATURE SENSING SYSTEMS
EFFECTIVITY -200ER with -892 Engines

FLIGHT PLANNING REQUIREMENTS Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.

NOTES None

AWABS Performance corrections have been applied.

TAKEOFF PERFORMANCE WORKSHEET TAKEOFF – PACKS ON

1. Reduce RATOW by 8,200 lbs.
2. Reduce T/O CLIMB LIMIT by 8,200 lbs.

TAKEOFF – PACKS OFF

1. Reduce RATOW by 900 lbs.
2. Reduce T/O CLIMB LIMIT by 900 lbs.

LANDING

1. Reduce RWY ALLOWABLE LANDING WT by 8,200 lbs.
2. Reduce LANDING CLIMB LIMIT WT by 8,200 lbs.

36-22-01B MANIFOLD TEMPERATURE SENSING SYSTEMS
EFFECTIVITY -200LR

FLIGHT PLANNING REQUIREMENTS Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
For ETOPS operations dispatched into known or forecast icing conditions, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.3%.

NOTES None

AWABS Performance corrections have been applied.

TAKEOFF PERFORMANCE WORKSHEET TAKEOFF – PACKS ON

1. Reduce RATOW by 14,800 lbs.
2. Reduce T/O CLIMB LIMIT by 14,800 lbs.

TAKEOFF – PACKS OFF

1. Reduce RATOW by 5,350 lbs.
2. Reduce T/O CLIMB LIMIT by 5,350 lbs.

LANDING

1. Reduce RWY ALLOWABLE LANDING WT by 14,800 lbs.
2. Reduce LANDING CLIMB LIMIT WT by 14,800 lbs.

(M) PROCEDURES

36-22-01A

NOTE: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.

For RR Engines (-200ER)

Lock the associated High Pressure Shutoff Valve (HPSOV) in the CLOSED position.

1. Deactivate the associated thrust reverser for ground maintenance.
2. Gain access to the HPSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
3. Lock the HPSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valve.
4. Close the opened thrust reverser sleeve and fan cowl panel.
5. Activate the associated thrust reverser.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-53

(M) PROCEDURES (Cont'd)

36-22-01A

For GE Engines (-200LR)

Lock the associated High Pressure Shutoff Valve (HPSOV) in the CLOSED position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Gain access to the HPSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
4. Lock the HPSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valve.
5. Close the opened thrust reverser sleeve and fan cowl panel.
6. Activate the associated thrust reverser.
7. Activate the leading edge slats.

36-22-01B

NOTE 1: For a pack to be operating normally, certain items associated with that system must be operative.
[Refer to MEL 21-51-01](#) for a listing of those items.

NOTE 2: For an engine bleed system to be operating normally, certain items associated with that system must be operative. [Refer to MEL 36-00-01](#) for a listing of those items.

NOTE 3: The ENG IDLE DISAGREE advisory message will be displayed when idle thrust is selected inflight. This requires that the associated Engine Idle Selection System also be [deferred per MEL 73-21-01](#).

For RR Engines (-200ER)

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the CLOSED position.

1. Deactivate the associated thrust reverser for ground maintenance.
2. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
3. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
4. Lock the HPSOV and PRSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valves.
5. Close the opened thrust reverser sleeve and fan cowl panel.
6. Activate the associated thrust reverser.

For GE Engines (-200LR)

Lock the associated High Pressure Shutoff Valve (HPSOV) and Pressure Regulating and Shutoff Valve (PRSOV) in the CLOSED position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Position associated BLEED AIR Panel (P5) ENG Bleed switch OFF.
4. Gain access to the HPSOV and PRSOV by opening the appropriate fan cowl panel and thrust reverser sleeve.
5. Lock the HPSOV and PRSOV in the CLOSED position by following the MANUAL LOCKING instructions placard on the valves.
6. Close the opened thrust reverser sleeve and fan cowl panel.
7. Activate the associated thrust reverser.
8. Activate the leading edge slats.

 DELTA	B777 Minimum Equipment List	ATA 36 Pneumatics	R14 05/09/16 Page 36-54

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	B777 Minimum Equipment List	ATA 38 Water / Waste	R14 05/09/16 Page 38-1

ATA 38 Contents

38-10-01A	Potable Water Systems.....	38-2
38-10-01C	Potable Water Indication System	38-2
38-30-01A	Lavatory Waste Systems (Including Wheelchair Accessible Lavatories)	38-4

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS	
38-10-01A	Potable Water Systems "DISP.APPR.REQ'D."	N	1	-	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 the system which operates normally may be used.
38-10-01B	Potable Water Systems "DISP.APPR.REQ'D."	N	1	0	C	(O)(M) May be inoperative provided: a) System is drained, b) Procedures are established to ensure that system is not serviced, and c) Appropriate performance adjustments are applied.
38-10-01C	Potable Water Indication System	Y	1	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
38-10-01A	Logbook	Potable Water ____ INOP
38-10-01B	Logbook	Potable Water System INOP
38-10-01C	Logbook	Potable Water Indication System INOP

(O) PROCEDURES

38-10-01B

Captain to brief Purser / FL as follows:

- Each hour, a small bottle or cup of water must be poured down every lavatory toilet hourly to prevent clogging.
- Galley water is unavailable and coffee makers cannot be used.

CONTINUED NEXT PAGE

38-10-01B	POTABLE WATER SYSTEMS
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None OTHER CORRECTIONS (Manual Weight & Balance Worksheet only) Use applicable OEW correction for "Potable Water System Drained" in ALM – Weight and Balance Section.

(M) PROCEDURES

38-10-01A

1. Deactivate inoperative system component(s) and isolate as necessary.
2. Ensure system is properly serviced and under pressure.
3. Check deactivated component(s) for leakage. No leakage is allowed.
 - a. Leak must be isolated prior to dispatch.

OR

- b. Entire system must be drained and deferred per [MEL 38-10-01B](#).

38-10-01B

1. Drain potable water system (Ref. AMM 12-14-01/301).
2. Install INOPERATIVE - DO NOT SERVICE placard on the inside of exterior service panels to ensure system is not serviced.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
38-30-01A	Lavatory Waste Systems (Including Wheelchair Accessible Lavatories) "Contact MCC"	N	-	-	C (O)(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 the system which operates normally may be used.
38-30-01B	Lavatory Waste Systems (Including Wheelchair Accessible Lavatories) "DISP.APPR.REQ'D."	N	-	-	C (M) Associated lavatory system may be inoperative provided: a) Associated components are deactivated or isolated to prevent leaks, b) The Pilot-In-Command will determine if flight duration is acceptable with both FWD lavatories unusable, and c) Associated lavatory door is locked CLOSED and placarded INOPERATIVE – DO NOT ENTER. NOTE: These provisions are not intended to prohibit inspections by crewmembers.

MEL ITEM	TAB LOCATION	PLACARD TEXT
38-30-01A	Logbook	___ Lavatory System ___ INOP
38-30-01B	Logbook	___ Lavatory System(s) INOP

OPERATIONS NOTE:

No changes to security procedures or passenger seating are required for an inoperative forward lavatory.

(O) PROCEDURES

38-30-01A

Captain to brief Purser / FL that Flight Attendants will lock affected lavatories below 16,000 feet and unlock affected lavatories above 16,000 feet.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 38 Water / Waste	R14 05/09/16 Page 38-5

(M) PROCEDURES

38-30-01A

1. Deactivate inoperative system component(s) and isolate as necessary (ref. AMM 38-32-00).
2. Ensure system is properly serviced.
3. Check deactivated component(s) for leakage. No leakage allowed.
4. If a lavatory service panel leak is known, suspected or reported, use MEL 38-30-01B.
5. If the inoperative component is a lavatory waste system vacuum blower, perform the following steps below as appropriate:
 - a. For Lavatory System 1, pull and secure the associated VAC BLO LAV SYS 1 circuit breaker on the Left Power Management Panel P110.
 - b. For Lavatory System 2 & 3, pull and secure the associated VAC BLO LAV SYS 2 & 3 circuit breaker(s) on the Right Power Management Panel P210.

NOTE 1: An inoperative System 1 vacuum blower will normally affect the Premium 2 (first class middle), Economy 3 (economy middle) and Economy 5 (economy right side aft by 4R door) lavatories.

NOTE 2: An inoperative System 2 vacuum blower will normally affect the Premium 1 (first class left side by 1R door) and Economy 1 (economy middle left by 3L door) lavatories.

NOTE 3: An inoperative System 3 vacuum blower will normally affect the Premium 3 (first class right side by 2R door), Economy 2 (economy middle right side by 3R door) and Economy 4 (economy left aft side by 4L door) lavatories.

38-30-01B

NOTE: Individual lavatories may be inoperative, or all lavatories associated with an inoperative waste tank may be inoperative.

1. Deactivate inoperative system component(s) as necessary (ref. AMM 38-32-00). No leakage allowed.
2. For known, suspected or reported leaks at a lavatory servicing panel, associated waste tank(s) must be drained per AMM 12-17-01.

CAUTION: Do not add the precharge chemical to inoperative waste tanks that are drained for dispatch.

3. Lock lavatory door closed and install INOPERATIVE – DO NOT ENTER placard on the exterior of each inoperative lavatory.
4. If waste tank is drained, install WASTE TANK “X” INOPERATIVE – DO NOT SERVICE placard on the inside of exterior service panels.

 DELTA	B777 Minimum Equipment List	ATA 38 Water / Waste	R14 05/09/16 Page 38-6

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	B777 Minimum Equipment List	ATA 45 Central Maintenance	R14 05/09/16 Page 45-1

ATA 45 Contents

45-10-01	Central Maintenance Computing System (CMCS)	45-2
45-11-01	Maintenance Access Terminal (MAT)	45-3
45-13-01	(PMAT) Side Display (-200LR).....	45-4

	B777 Minimum Equipment List	ATA 45 Central Maintenance	R14 05/09/16 Page 45-2

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
45-10-01	Central Maintenance Computing System (CMCS)	N		1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
45-10-01	MAT	Central Maintenance Computing System (CMCS) INOP

	B777 Minimum Equipment List	ATA 45 Central Maintenance	R14 05/09/16 Page 45-3

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
45-11-01	Maintenance Access Terminal (MAT)	N	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
45-11-01	MAT	MAT INOP

	B777 Minimum Equipment List	ATA 45 Central Maintenance	R14 05/09/16 Page 45-4

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
45-13-01	(PMAT) Side Display (-200LR)	N	1	0	D (M) May be inoperative deactivated.

MEL ITEM	TAB LOCATION	PLACARD TEXT
45-13-01	PMAT	PMAT Side Display INOP

(M) PROCEDURES

Deactivate the inoperative side display by pulling and securing the F/O SIDE DSPL circuit breaker on the P11 panel.

	B777 Minimum Equipment List	ATA 46 Information Systems	R9 07/07/11 Page 46-1

**THERE ARE NO ATA 46 ITEMS IN THE B777
MINIMUM EQUIPMENT LIST**

 DELTA	B777 Minimum Equipment List	ATA 46 Information Systems	R9 07/07/11 Page 46-2

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	B777 Minimum Equipment List	ATA 47 Inert Gas Systems	R14 05/09/16 Page 47-1

ATA 47 Contents

47-11-01A	Nitrogen Generation System (NGS).....	47-2
47-11-01B	Nitrogen Generation Performance	47-2

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	NITROGEN GENERATION SYSTEM (NGS)				
47-11-01A	Nitrogen Generation System (NGS)	N	1	0	A (M) May be inoperative provided: a) NGS shutoff valve is deactivated closed, and b) Repairs are made within ten flight days.
47-11-01B	Nitrogen Generation Performance	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
47-11-01A	Center Display Control Panel	Nitrogen Generation System INOP
47-11-01B	Center Display Control Panel	Nitrogen Generation Performance Degraded

(M) PROCEDURES

47-11-01A

Deactivate the NGS shutoff valve in the closed position as follows:

1. Gain access to the NGS shutoff valve through the following access door:

Number	Name / Location
195BL	ECS High Pressure Connection Door

NOTE: The NGS shutoff valve is found aft of the thermal control unit (TCU), between the bleed air inlet duct.

WARNING: DO NOT TOUCH THE COMPONENTS OF THE NITROGEN GENERATION SYSTEM WHEN THEY ARE HOT. WHEN THE COMPONENTS ARE HOT, THEY CAN CAUSE INJURIES TO PERSONNEL.

2. Use a wrench to rotate the manual lock arm to the CLOSED position.
3. Align the hole in the manual lock arm with the threaded boss on the NGS shutoff valve.
4. Remove the manual lockbolt from the NGS shutoff valve body.

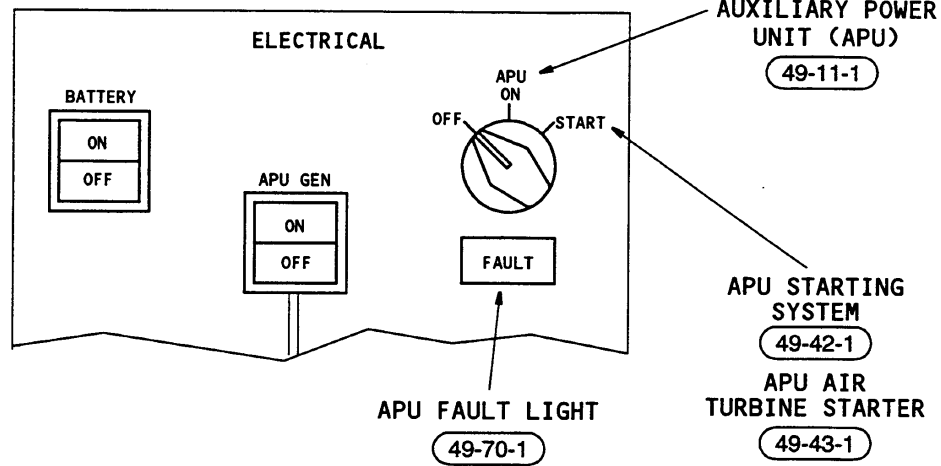
NOTE: The manual lock bolt is normally attached with a lanyard.

5. Install the manual lockbolt through the hole in the manual lock arm.
6. Tighten the bolt to 25 +/-5 in-lb.

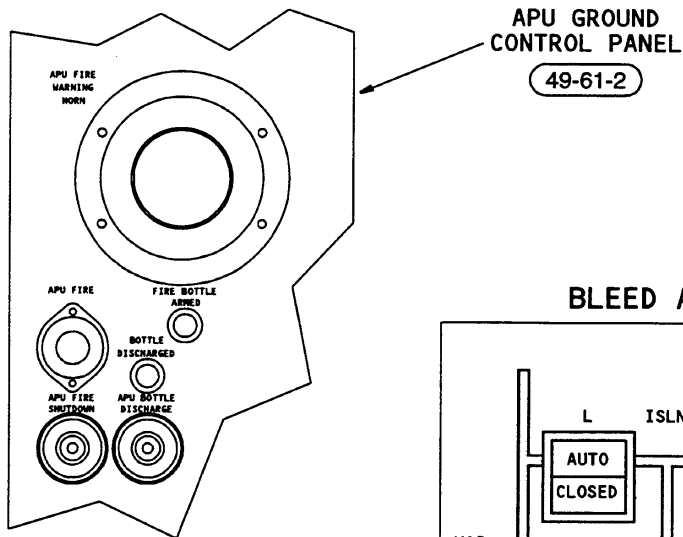
ATA 49 Contents

	AUXILIARY POWER UNIT	49-4
49-11-01A	Auxiliary Power Unit (APU)	49-4
49-11-01B	APU System – Cold Soak Not Verified	49-4
49-15-01A	APU Air Inlet Door Actuation System.....	49-7
49-15-01C	APU Air Inlet Door Actuation Position Indication Switch.....	49-7
49-42-01A	APU Starting System (Includes Electric Starter)	49-11
49-43-01	APU Air Turbine Starter.....	49-13
49-52-01	APU Bleed Air System	49-14
49-52-02	APU Bleed Air Check Valve	49-15
49-61-01	APU Controller	49-16
49-61-02	APU Ground Control Panel	49-17
49-70-01	APU FAULT Light.....	49-18
49-71-01	APU EGT Indication	49-19
49-73-01	APU RPM Indication.....	49-20
49-94-01	APU Oil QTY Indication.....	49-21
49-94-02	APU OIL PRESS Indication	49-22

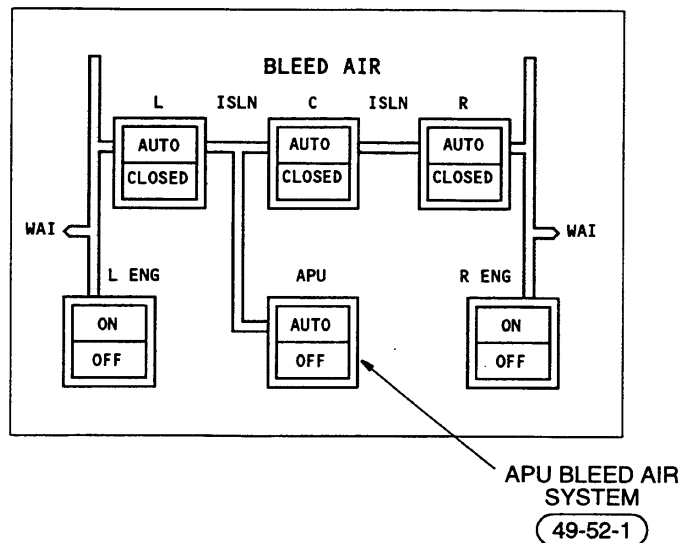
ELECTRICAL PANEL (P5)



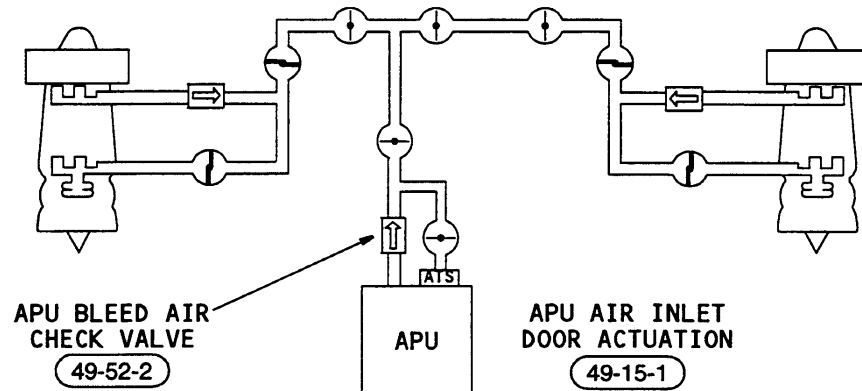
SERVICE AND APU SHUTDOWN PANEL (P40) (NOSE GEAR)



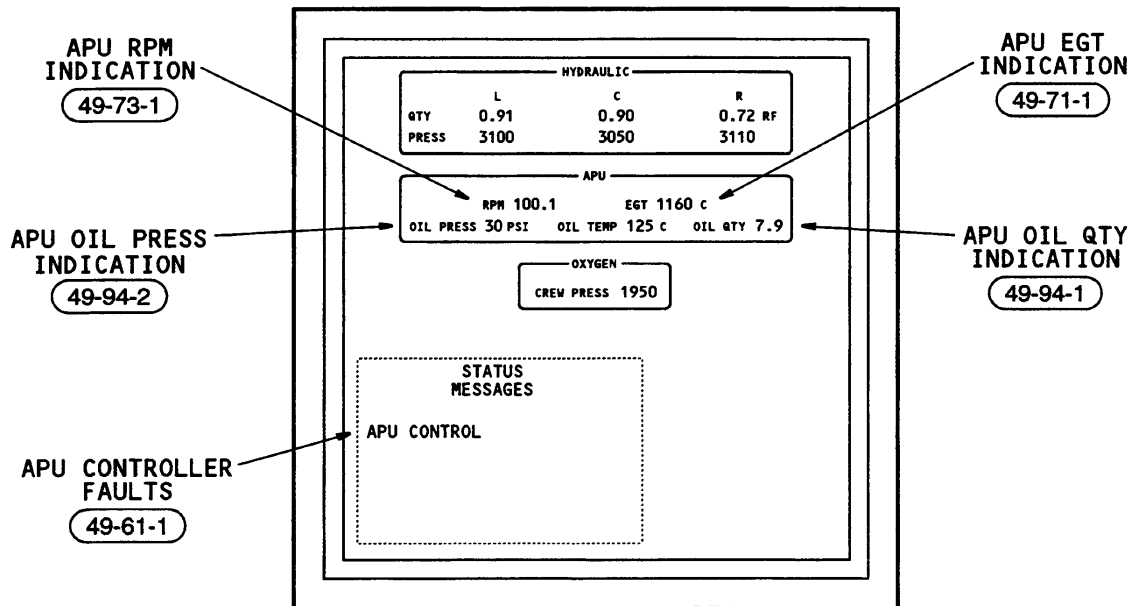
BLEED AIR PANEL (P5)



AIR SUPPLY SYSTEM



MFD - EICAS STATUS PAGE



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
AUXILARY POWER UNIT					
49-11-01A	Auxiliary Power Unit (APU) "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Other procedures do not require its use, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized Theater Restrictions May Apply
49-11-01B	APU System – Cold Soak Not Verified "DISP.APPR.REQ'D." Administrative Control Item	Y	1	1	B (O) APU is fully operational, but inflight verification of cold soak start capability has not been accomplished. a) Other procedures do not require use of APU, b) Flight remains within 180 minutes of landing at a suitable airport. c) APU remains OFF after takeoff until cold soak start is attempted, and d) Cold soak inflight start of APU may be accomplished after at least two flight hours at or above FL270. <u>Polar Operations</u> Not Authorized Theater Restrictions May Apply

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-11-01A	Near APU Start Switch	APU INOP
49-11-01B	Near APU Start Switch	APU System – Cold Soak Not Verified

MAINTENANCE NOTE:

APU REMOTE SHUTDOWN message indicates that the APU shutdown switch on the nose landing gear Service and APU Shutdown Panel has been activated. The message may be cleared by running the fire/overheat test which is initiated by pressing the fire / overheat test switch.

(O) PROCEDURES

49-11-01A

NOTE 1: If APU to Pack Takeoff (-200LR) Supplementary Procedure is required for takeoff per the WDR, the Packs Off Takeoff Supplementary Procedure must be used instead. The Packs Off Takeoff Supplementary Procedure can be found in the Delta 777 Operations Manual (Vol. 1), Supplementary Procedures.

CONTINUED NEXT PAGE

NOTE 2: Dispatch is not allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

For dispatch when the APU is inoperative and its use is not required by other procedures:

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory EICAS messages are not displayed 30 seconds after both engines have been started.

49-11-01B

NOTE: Dispatch is not allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

1. The flight must remain within 180 minutes of landing at a suitable airport.
2. Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory EICAS messages are not displayed 30 seconds after both engines have been started.
3. APU is shut down after pushback (or after takeoff if APU is required).
4. For an inflight cold soak start, see B777 Volume 1, Supplementary Procedures, Engines, APU.

CONTINUED NEXT PAGE

49-11-01B APU SYSTEM – COLD SOAK NOT VERIFIED	
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 2.5%. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-15-01A	APU Air Inlet Door Actuation System "DISP.APPR.REQ'D."	N	1	0	C (O) May be inoperative with door in any position provided: a) Other procedures do not require the use of the APU, b) APU is not used, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized
49-15-01B	APU Air Inlet Door Actuation System "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be inoperative provided door is deactivated in the full open position.
49-15-01C	APU Air Inlet Door Actuation Position Indication Switch	N	1	0	C (M) May be inoperative provided: a) APU inlet door is verified to operate normally PRIOR TO EACH DEPARTURE (Log Book Entry Required), and b) Both ELMS P310 panel channels operate normally. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-15-01A	Near APU Start Switch	1. APU Air Inlet Door Actuation System INOP. 2. Do not use APU.
49-15-01B	Near APU Start Switch	APU Air Inlet Door Actuation System INOP
49-15-01C	Near APU Start Switch	APU Air Inlet Door Actuation Position Indication Switch INOP

(O) PROCEDURES

49-15-01A

NOTE: If APU to Pack Takeoff (-200LR) Supplementary Procedure is required for takeoff per the WDR, the Packs Off Takeoff Supplementary Procedure must be used instead. The Packs Off Takeoff Supplementary Procedure can be found in the Delta 777 Operations Manual (Vol. 1), Supplementary Procedures.

CONTINUED NEXT PAGE

1. If APU air inlet door is inoperative closed or partially open, the APU cannot be used. Dispatch is not allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

2. For dispatch when the APU cannot be used and its use is not required by other procedures:
 - a. The flight must remain within 180 minutes of landing at a suitable airport.
 - b. Verify that the Backup AC electrical power system operates normally. Confirm that ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory EICAS messages are not displayed 30 seconds after both engines have been started.

49-15-01A	APU AIR INLET DOOR ACTUATION SYSTEM
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 2.5% for APU Air Inlet Door not closed.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

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(O) PROCEDURES (Cont'd.)

49-15-01B

49-15-01B APU AIR INLET DOOR ACTUATION SYSTEM	
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 2.5%. 2. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

(M) PROCEDURES

49-15-01B

Manually position and deactivate the APU air inlet door in the fully OPEN position.

1. Position APU selector on the P5 overhead panel to OFF.
2. Pull the P49 Panel APUC 2 circuit breaker.
3. Pull the P310 Panel DC FUEL PUMP and APUC 1 circuit breakers.
4. Pull and secure the P310 Panel APU INLET DR ACTR circuit breaker.
5. Pull the P320 Panel APU OIL HTR ASSY circuit breaker.
6. Open left and right APU Access Doors (315AL and 316AR).
7. Remove access cover from the inlet door actuator assembly.

CAUTION: Do not apply more than 10 in-lbs of torque on the transfer cover socket. Damage can occur if you apply too much torque on the transfer cover socket.

8. Turn the transfer cover socket on the inlet door actuator counterclockwise until MAN shows in the window of the transfer socket.

NOTE: The manual drive socket will show.

9. Turn the manual drive socket counter clockwise until the torque value suddenly increases.

CAUTION: Do not apply more than 65 in-lbs of torque on the manual drive socket. The torque that is necessary to turn the crank will suddenly increase when the inlet door is fully open. Damage can occur if you apply too much torque on the manual drive socket.

10. Turn the transfer cover socket clockwise until ELEC shows in the forward window of the transfer cover.
11. Replace access cover on the inlet door actuator assembly.
12. Close left and right APU access doors.
13. Close the P49 Panel APUC 2 circuit breaker.
14. Close the P310 Panel DC FUEL PUMP and APUC 1 circuit breakers (APU INLET DR ACTR circuit breaker remains open for dispatch).
15. Close the P320 Panel APU OIL HTR ASSY circuit breaker.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-10

49-15-01C

PRIOR TO EACH DEPARTURE - For an inoperative APU air inlet door actuator position switch, verify the APU door operates normally.

1. If the APU is running:

- a. The APU air inlet door must be open for the APU to run.
- b. Use a CDU to display the APU Maintenance page on a Multi-Function Display (MFD).
- c. Verify the INLET DOOR POSITION on the APU Maintenance page indicates OPEN.
- d. Position the APU selector on the Overhead Electrical panel (P5) OFF and wait 120 seconds.

NOTE: If it is desired to retain AC power on the airplane, ensure another AC power source is available before positioning the APU selector OFF. If AC power will not be retained on the airplane, use the left inboard MFD to display the APU Maintenance page.

- e. Verify that the INLET DOOR POSITION on the APU Maintenance page indicates CLOSED.
- f. Visually verify that the APU air inlet door is closed. The air inlet door is located on the upper right-hand side of the tail cone.
- g. Establish electrical power as required.

NOTE: Prolonged operation with the battery powering the standby busses can deplete the battery.

2. If the APU is not running:

- a. Establish electrical power by applying external power or starting an engine (AMM 24-22-00/201).

NOTE: If external power is not available and starting an engine is inconvenient, the standby busses may be powered by momentarily positioning the Overhead Maintenance panel (P61) STANDBY POWER switch to BAT.

- b. Use a CDU to display the APU Maintenance page on an MFD.

NOTE: Use the left inboard MFD if AC power is not applied to the airplane.

- c. Verify the INLET DOOR POSITION on the APU Maintenance page indicates CLOSED.
- d. Position the APU selector to ON or start the APU (AMM 49-11-00/201).

NOTE: The APU air inlet door will open in 5 to 45 seconds if the APU selector is positioned to ON or the APU is started.

- e. Wait 45 seconds, and then verify the INLET DOOR POSITION on the APU Maintenance page indicates OPEN.
- f. Visually verify the APU air inlet door is open.
- g. If the APU is not started, establish electrical power as required.

NOTE: Prolonged operation with the battery powering the standby busses can deplete the battery.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-42-01A	APU Starting System (Includes Electric Starter) "DISP.APPR.REQ'D."	N	1	0	C (O)(M) May be dispatched with APU START SYS faults provided APU is started before departure and operated continuously throughout the flight.
49-42-01B	APU Starting System (Includes Electric Starter) "DISP.APPR.REQ'D."	Y	1	0	C (O) May be dispatched with APU START SYS faults provided: a) Other procedures do not require use of the APU, b) Backup AC power system is verified to operate normally PRIOR TO EACH DEPARTURE, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-42-01A	Near APU Start Switch	APU Starting System INOP
49-42-01B	Near APU Start Switch	APU Starting System INOP

(O) PROCEDURES

49-42-01A

Start the APU before departure and operate the APU continuously throughout the flight.

49-42-01A	APU STARTING SYSTEM (INCLUDES ELECTRIC STARTER)
EFFECTIVITY	All
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 2.5%. 2. Increase BLOCK FUEL by 245 lbs. for each hour of APU usage.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

CONTINUED NEXT PAGE

49-42-01B

- Dispatch is not allowed under this MEL if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU availability.

MEL Item	Equipment
24-11-01	Engine Driven Generator Systems
24-25-01	Backup Electrical Power System
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

- The flight must remain within 180 minutes of landing at a suitable airport.
- PRIOR TO EACH DEPARTURE** - Verify the Backup AC electrical power system operates normally. Confirm the ELEC BACKUP SYS or ELEC BACKUP GEN L or R status and advisory messages are not displayed 30 seconds after both engines have been started.

(M) PROCEDURES

49-42-01A

NOTE: Some electric starter failures may result in damage to the APU if it is used. If the APU fails to start electrically but does start pneumatically, and if the APU is required for flight, the possibility of APU damage can be reduced by doing the following steps:

- Perform the APU Magnetic Chip Collector Inspection.
- If the Chip Collector Inspection is satisfactory, then:
 - Position the APU Maintenance switch on the Overhead Maintenance Panel (P61) NORM.
 - Position the APU selector on the Overhead Panel (P5) OFF.
 - Remove the end cap from the electric starter motor on the APU.
 - Use a socket and ratchet on the shaft for the electric starter to turn the APU counterclockwise, facing aft.
 - The APU should turn freely. Verify the APU is turning freely by visual inspection of the power section compressor blades through the bottom access panel of the APU inlet duct.
 - If the APU does not turn freely, serious damage can occur if the APU is operated. Dispatch aircraft with APU Inoperative ([MEL 49-11-01](#)).
 - Remove the socket and ratchet, replace the electric starter end cap, and install bottom access panel.

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-13

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-43-01	APU Air Turbine Starter	Y	1	0	C May be inoperative provided electric starter operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-43-01	Near APU Start Switch	APU Air Turbine Starter INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-52-01	APU Bleed Air System "DISP.APPR.REQ'D."	Y	1	0	C (O) May be inoperative provided: a) Other procedures do not require APU as a pneumatic source, and b) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized NOTE: The APU may be used as an electrical power source.

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-52-01	Bleed Air System Control Panel	APU Bleed Air System INOP

(O) PROCEDURES

NOTE 1: If APU-to-Pack is required for takeoff per the WDR, the PKOF procedure must be used instead.

NOTE 2: The APU bleed air system may or may not be completely inoperative when the APU BLEED AIR status message is displayed depending on the actual fault causing the message. The APU bleed air system may be used for ground operation only if available (e.g., ground main engine starts and pack operation). However, restrictions detailed below apply if dispatched per this MEL item.

- Dispatch is not allowed if other procedures require APU as source of pneumatic power.
- MEL dispatch procedures for the following inoperative equipment require APU bleed air to operate normally:

MEL Item	Equipment
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-52-02	APU Bleed Air Check Valve "DISP.APPR.REQ'D."	N	1	0	C
					(O) May be inoperative provided: a) APU bleed air switch remains OFF except for main engine start, b) Other procedures do not require use of the APU as a pneumatic source, and c) Flight remains within 180 minutes of landing at a suitable airport. <u>Polar Operations</u> Not Authorized NOTE: The APU may be used for electrical power. Air Turbine Starter is not available with APU bleed air shutoff valve closed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-52-02	Near APU Start Switch	APU Bleed Air Check Valve INOP

MAINTENANCE NOTE

The APU may be used as a bleed air source on the ground provided no other bleed source is on the airplane. The APU bleed switch must be positioned OFF after main engine start. Retaining the APU bleed switch OFF whenever another bleed source is on the airplane will prevent an inadvertent APU air start. Positioning the APU bleed switch AUTO (open) with an engine running can seriously damage the APU.

(O) PROCEDURES

NOTE: If APU-to-Pack is required for takeoff per the WDR, the PKOF procedure must be used instead.

1. APU available for electrical power only. APU BLEED AIR switch must remain OFF after main engine start.
2. Air Turbine Starter for the APU is not available.
3. Dispatch is not allowed if APU is required for other procedures. MEL dispatch procedures for the following inoperative equipment require APU bleed air availability.

MEL Item	Equipment
29-11-03	Center System Demand Air Driven Pumps
36-11-01	Engine Pressure Regulating and Shutoff Systems
36-11-03	Engine Intermediate Pressure Check Valves
36-12-01	Left and Right Bleed Air Isolation Systems
36-12-02	Center Bleed Air Isolation System

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-16

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-61-01	APU Controller	Y	1	0 C	May be dispatched with APU CONTROL faults.

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-61-01	Near APU Start Switch	APU Controller Fault(s) ____ Displayed

MAINTENANCE NOTE:

Continued APU operation following display of maintenance messages 49-12990 (APU Lube Filter Clogged) or 49-12950 (APU Generator Filter Clogged) may increase the potential for filter bypass differential pressure to be reached resulting in metal contamination circulating to additional areas of the APU.

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-61-02	APU Ground Control Panel	N	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-61-02	Logbook	APU Ground Control Panel INOP

MAINTENANCE NOTE:

This MEL item allows dispatch with any or all of the APU ground control panel functions (APU Fire Warning Horn, APU Fire Warning Light, APU Fire Bottle Discharge Switch, APU Shutdown Switch, APU Fire Bottle Armed Light and APU Bottle Discharged Light) inoperative.

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-18

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			Y	1	0	REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS					
49-70-01	APU FAULT Light						

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-70-01	Near APU FAULT Light	APU FAULT Light INOP

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-19

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-71-01	APU EGT Indication	N	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-71-01	Center Display Control Panel	APU EGT Indication INOP

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-20

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			N	1	REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS					
49-73-01	APU RPM Indication						

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-73-01	Center Display Control Panel	APU RPM Indication INOP

	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-21

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
49-94-01	APU Oil QTY Indication	N	1	0	C
					(M) May be inoperative provided APU Oil quantity is verified adequate ONCE EACH FLIGHT DAY (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-94-01	Center Display Control Panel	APU Oil QTY Indication INOP

(M) PROCEDURES

ONCE EACH FLIGHT DAY - Use APU oil tank sight gauge to ensure oil quantity is adequate for flight(s) intended.

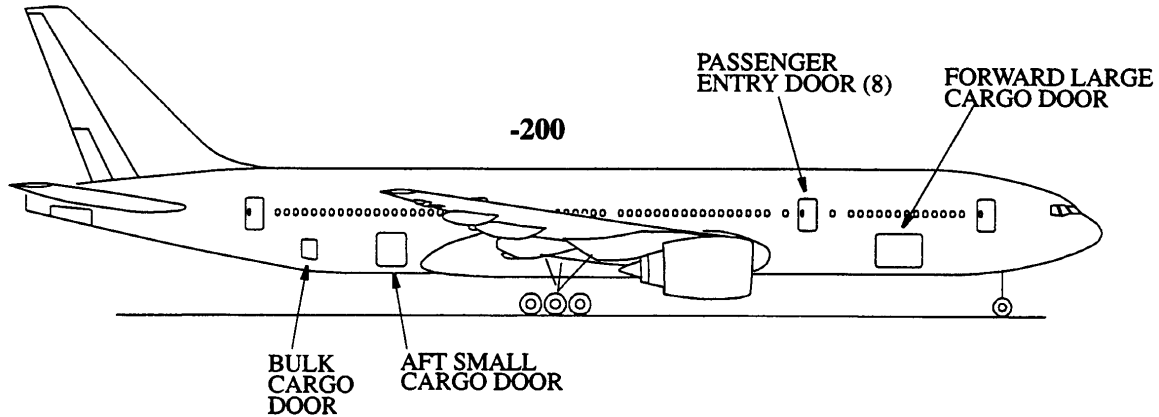
	B777 Minimum Equipment List	ATA 49 Auxiliary Power Unit (APU)	R14 05/09/16 Page 49-22

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD			N	1	0	REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION	REMARKS OR EXCEPTIONS					
49-94-02	APU OIL PRESS Indication						

MEL ITEM	TAB LOCATION	PLACARD TEXT
49-94-02	Center Display Control Panel	APU OIL PRESS Indication INOP

ATA 52 Contents

52-00-01	Doors Synoptic Display	52-5
52-11-01A	Main Entry Doors / Slides.....	52-6
52-11-02	Main Entry Doors Pressure Stop Assemblies	52-9
52-11-03	Main Entry Door Hold-Open Mechanisms.....	52-10
52-11-04	Main Entry Door Hold-Open Release Handles	52-11
52-11-05	Main Entry Door Flight Lock Systems	52-12
52-34-01	Forward Cargo Door Hook / Latch System (Electric Mode).....	52-13
52-34-02	Forward Cargo Door Lift System (Electric Mode)	52-14
52-34-03	Forward Cargo DOOR LATCHED Light.....	52-15
52-36-01	Bulk Cargo Door Counterbalance Mechanism.....	52-16
52-37-01	Aft Large Cargo Door Hook / Latch System (Electric Mode)	52-17
52-37-02	Aft Large Cargo Door Lift System (Electric Mode)	52-18
52-37-03	Aft Large Cargo DOOR LATCHED Light	52-19
	BOEING ENHANCED FLIGHT DECK SECURITY DOOR (-200LR).....	52-20
52-51-02A	BOEING Enhanced Flight Deck Security Door Automatic Locking System	52-20
52-51-02B	Flight Deck Access System (Keypad, Door Chime).....	52-20
52-51-02C	Flight Deck Access System LEDs.....	52-20
	BOEING ENHANCED FLIGHT DECK SECURITY DOOR (-200LR).....	52-21
52-51-02D	Flight Deck Access System Switch Guard	52-21
52-51-02E	Flight Deck Door LOCK FAIL Light	52-21
52-51-02F	Flight Deck Door AUTO UNLK Light.....	52-21
52-51-02G	Flight Deck Door Lock Control Selector	52-21
52-51-02H	Pressure Rate-Of-Change Sensing Module	52-21
52-51-03	Boeing Enhanced Flight Deck Security Door Dead Bolt (-200LR).....	52-24
	JAMCO FLIGHT DECK SECURITY DOOR (-200ER)	52-25
52-51-04A	JAMCO Flight Deck Security Door Automatic Locking System	52-25
52-51-04B	Door Automatic Locking Solenoids	52-25
52-51-04C	Door Aural Warning System.....	52-25
52-51-04D	Door LOCK FAIL Light	52-25
52-51-04E	Door AUTO UNLK Light	52-25
	JAMCO FLIGHT DECK SECURITY DOOR (-200ER)	52-26
52-51-04F	Door UNLK Switch Position	52-26
52-51-04G	Cabin Keypad.....	52-26
52-51-04H	Keypad Indicator Lights.....	52-26
52-51-05	JAMCO Flight Deck Security Door Mechanical Latch Pin Lock (-200ER)	52-29
52-71-01	Door Indication Systems	52-30
52-71-02	Main Entry Door Status Annunciation and Alerting System (Flight Attendant).....	52-31



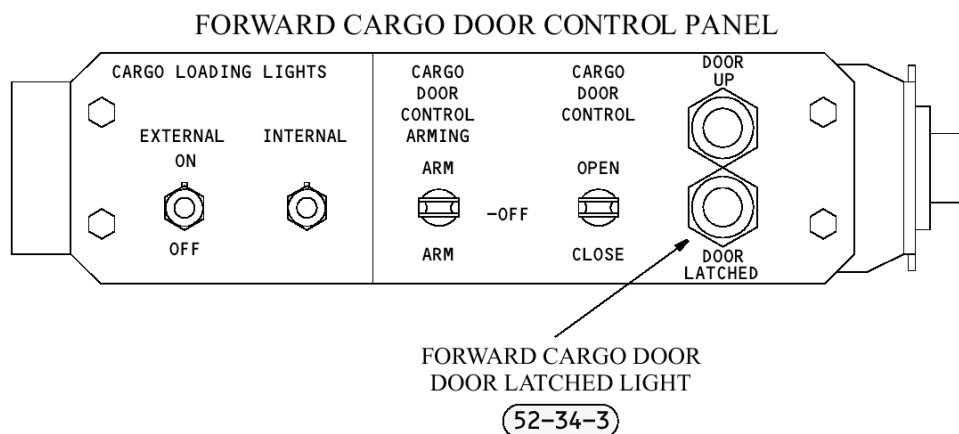
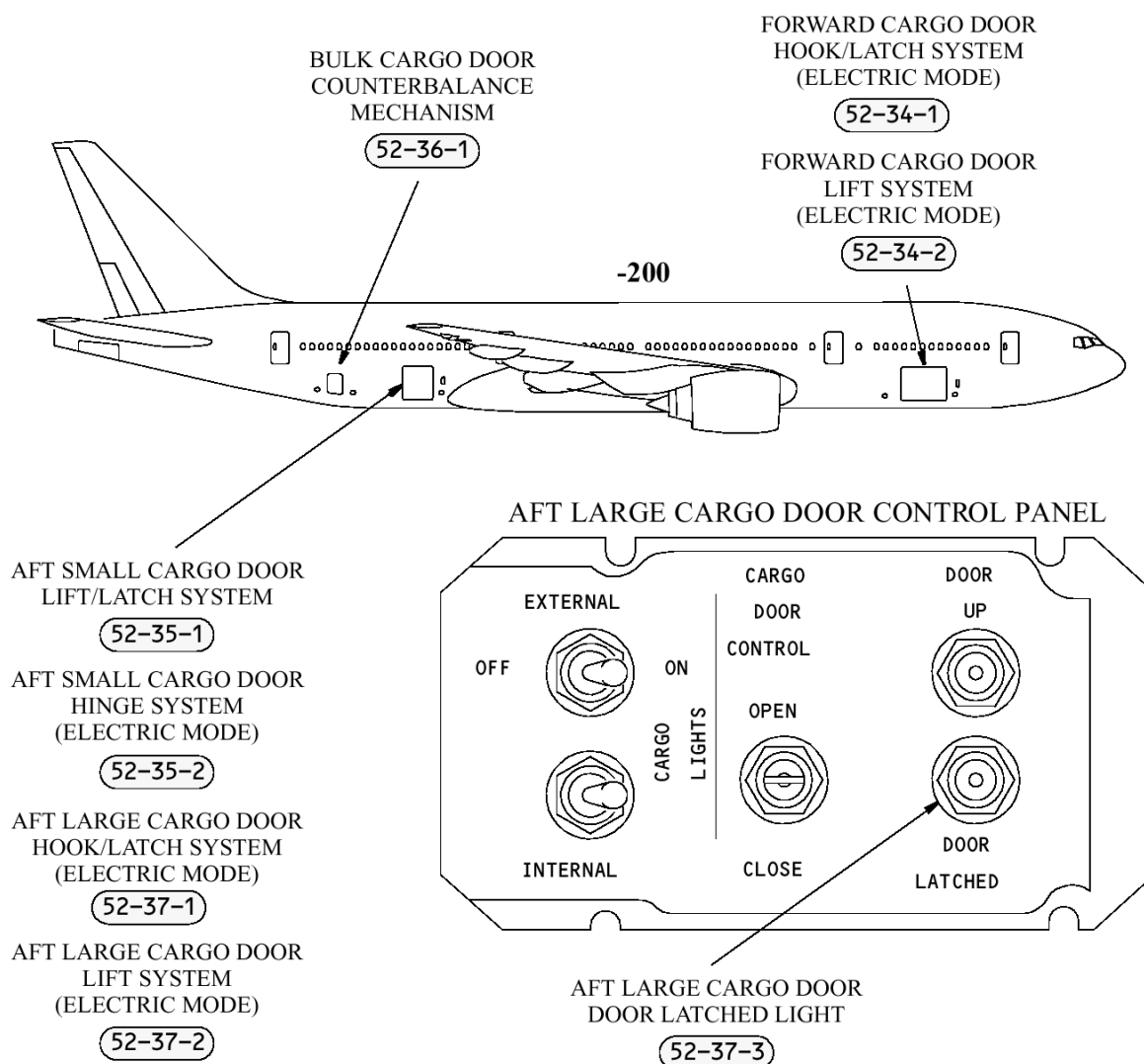
PASSENGER ENTRY DOORS OR SLIDE/RAFTS (52-11-1)

PASSENGER ENTRY DOORS PRESSURE STOP ASSEMBLIES (52-11-2)

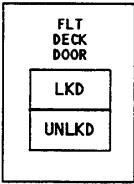
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PASSENGER ENTRY DOORS HOLD-OPEN RELEASE HANDLES (52-11-4)

PASSENGER ENTRY DOOR FLIGHT LOCK SYSTEMS (52-11-5)

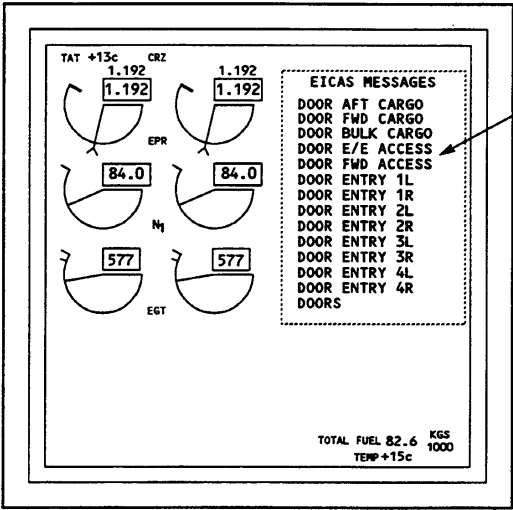


AFT AISLE STAND (P8)



FLIGHT DECK DOOR
LOCK SYSTEM
(52-51-1)

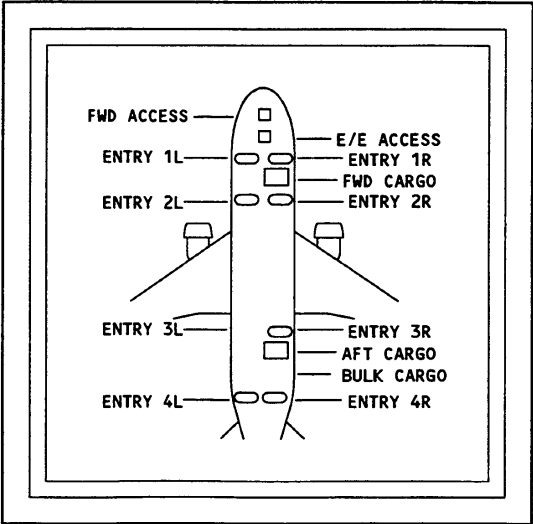
EICAS DISPLAY
(-200 SHOWN)



DOOR INDICATION SYSTEMS
(52-71-1)

DOORS SYNOPTIC DISPLAY
(-200 SHOWN)

(52-00-1)



	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-5

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-00-01	Doors Synoptic Display	Y	1	0 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-00-01	Center Display Control Panel	Doors Synoptic Display INOP

OPERATIONS NOTE:

If the Synoptic Display is missing data, selecting an alternate location for the display (L INBD, LWR CTR, or R INBD) may restore the missing data. Synoptic Displays containing missing data may continue to be used to the extent remaining data is useful.

NOTE: Airplane system faults will be annunciated by EICAS alerting and status messages.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
52-11-01A	Main Entry Doors / Slides "DISP.APPR.REQ'D."	N 8	7 A	(O)(M) One door/slide may be inoperative or slide missing provided: a) All other main entry doors are fully operational, b) Affected door is not used for passenger loading, c) A conspicuous barrier strap or rope and a placard stating that the door is inoperative shall be placed across the inoperative door, d) Emergency exit sign and floor proximity lights associated with the inoperative exit must be covered to obscure the sign and lights, e) Passengers must be briefed not to use affected door, f) Passenger seats associated with the inoperative door shall be blocked off with conspicuous tapes or ropes that contrast with the airplane interior before loading passengers. Only the seats in these areas shall be blocked; main passenger aisles, cross aisles and exit areas must not be blocked. g) Conspicuous signs and placards shall be placed in appropriate locations to indicate seats are not to be occupied by passengers, h) Seated capacity must not exceed rated capacity of remaining pairs of exits, i) For extended overwater operations, occupancy shall not exceed the normal rated capacity of the slide/rafts, or the remaining slide/rafts, or the rated overload capacity of the slide/rafts remaining after loss of one additional slide/rafts of greatest capacity, whichever is least, and j) Repairs are made within one flight day. NOTE 1: Blocked seating listed in the Aircraft Loading Manual (ALM) meet the requirements of provisos f), h), and i). Refer to ALM, Section 477 for blocked seating tables, and procedures to be used for Weight and Balance, NOTE 2: Flight attendants may be stationed in the vicinity of each door within blocked areas. NOTE 3: Weight and Balance Manifest must be revised as necessary to ensure proper loading limits are observed. NOTE 4: A door with an inoperative EPAS must be considered inoperative.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-11-01B	Main Entry Doors/Slides "DISP.APPR.REQ'D."	Y	8	1 C	(O)(M) May be inoperative or slides missing provided: a) No passengers are carried, b) A maximum of 19 persons authorized by 14 CFR (121.583) for non-passenger carrying operations are carried, c) Affected door is not used for authorized persons loading, d) A conspicuous barrier strap or rope and a placard stating that the door is inoperative shall be placed across the inoperative door, e) Emergency exit sign and floor proximity lights associated with the inoperative exit must be covered to obscure the sign and lights, f) Each person carried has unobstructed access from their seat to an operative door, g) Safety briefing includes location of inoperative door and instructions not to use them, h) Inoperative doors are not to be used for loading, i) Captain will brief persons authorized to be carried on flight about safety and evacuation procedures, and j) Arming of the passenger entry doors using the mode select handles in the automatic position (red band) prior to taxi, takeoff and landing includes the inoperative doors with or without the escape slide removed.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-11-01A	Center Display Control Panel	___ Main Entry Door or Slide INOP / Missing
52-11-01B	Center Display Control Panel	___ Main Entry Door or Slide INOP / Missing

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-8

(O) PROCEDURES

52-11-01A

1. Passenger entry door Emergency Power Assist Systems (EPAS) and emergency evacuation slide systems must be armed with the mode select handles in the ARMED or AUTOMATIC position prior to taxi, takeoff and landing whenever passengers are carried. Girt bar indication flags are visible through windows in the doorway liners when the door and slides are in the ARMED or AUTOMATIC mode.

NOTE: This includes inoperative doors with escape slides removed.

2. Flight crew members and passengers must be briefed prior to takeoff and landing regarding exit that cannot be used for emergency evacuation.
3. Refer to [ALM, Section 477](#) for blocked seating layout and Weight & Balance data.

52-11-01B

Refer to REMARKS or EXCEPTIONS section on Page 52-7.

(M) PROCEDURES

52-11-01A

NOTE: If a main entry door's Emergency Power Assist System (EPAS) is inoperative, that associated entry door is considered inoperative.

1. Cover the emergency exit sign of the affected door so that it is not visible.
2. Cover or otherwise obscure the floor proximity escape path marking system lights unique to the inoperative door.
3. Block the inoperative door with a conspicuous barrier strap or rope and placard INOPERATIVE.
4. Block unusable passenger seats with conspicuous tape or ropes and placard DO NOT OCCUPY.
5. Refer to [ALM, Section 477](#) for blocked seating layout. Section 477.2 (General) and 477.3 (Limitations/Procedures) provides specific instructions and materials needed for blocking seats and obscuring signs.

52-11-01B

1. Cover the emergency exit sign of the affected door so that it is not visible.
2. Cover or otherwise obscure the floor proximity escape path marking system lights unique to the inoperative door.
3. Block the inoperative door with a conspicuous barrier strap or rope and placard INOPERATIVE.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-11-02	Main Entry Doors Pressure Stop Assemblies "DISP.APPR.REQ'D."	N	128	120	C (O)(M) One forward or aft stop per door (total of 8 stops per airplane) may be missing or inoperative provided: a) There are no visible defects on remaining stops for the affected door(s), b) Both cabin altitude auto controllers operate normally, c) For inoperative or missing pressure stops 1, 2, 7 and 8, limit maximum cabin differential pressure to 2.5 psi, and d) For inoperative or missing pressure stops 3, 4, 5 and 6, limit maximum cabin differential pressure to 5.4 psi.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-11-02	Logbook	___ Main Entry Door Pressure Stop(s) Missing / INOP

(O) PROCEDURES

Airplane altitude is limited as follows to assure maximum cabin differential pressure (Delta P) limit is not exceeded by automatic cabin pressure control.

1. Before takeoff, set the landing altitude to 8,000 feet.
2. For a maximum Delta P of 2.5 psi, do not exceed 14,500 feet airplane pressure altitude.
3. For a maximum Delta P of 5.4 psi, do not exceed 24,500 feet airplane pressure altitude.
4. At top of descent, reset the landing altitude to the actual field elevation for the destination airport.

(M) PROCEDURES

Visually inspect remaining pressure stops on affected door(s) and door frame(s) to ensure there are no other defects.

NOTE: Door stops are numbered 1 to 8 from bottom to top on both forward and aft edges of door.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
52-11-03	Main Entry Door Hold-Open Mechanisms	N	8	4	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-11-03	Logbook	___ Main Entry Door Hold-Open Mechanism(s) INOP

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-11

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
52-11-04	Main Entry Door Hold-Open Release Handles	N	8	4	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-11-04	Logbook	___ Main Entry Door Hold-Open Release Handle(s) INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-11-05	Main Entry Door Flight Lock Systems	N	8	0	C
					(O)(M) May be inoperative provided: a) Each affected door is verified to be capable of being unlatched and opened PRIOR TO EACH DEPARTURE (Log Book Entry Required), and b) Crew member monitors the affected door handle(s) when cabin differential pressure is less than 1.5 psi. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-11-05	Center Display Control Panel	___ Main Entry Door(s) Flight Lock System INOP

(O) PROCEDURES

- Each affected door must be monitored by a crew member (can be also be a non-working FA/Pilot) when cabin differential pressure is less than 1.5 psi to ensure door handle is not operated by passengers.
- Flight crew should inform flight attendant crew when monitoring is required.

(M) PROCEDURES

If desired, gain access to the inoperative flight lock actuator and disconnect, cap and stow the actuator's electrical connector.

PRIOR TO EACH DEPARTURE - Verify the associated passenger entry door(s) is capable of being unlatched and opened.

- Position the door mode select handle to MANUAL / DISARMED.

CAUTION: Do not rotate the door handle to the OPEN position with door mode select lever in the AUTOMATIC / ARMED position. Door will open rapidly and slide will deploy and inflate.

- Rotate the inside door handle to the OPEN position. Open door slightly.
- Close door and rotate handle back to CLOSED position.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-13

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-34-01	Forward Cargo Door Hook / Latch System (Electric Mode)	N	1	0	C (M) May be inoperative provided: a) Manual mode operates normally, b) There is no damage to the hook / latch mechanism, and c) Door is manually latched and locked using the maintenance manual procedure.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-34-01	Logbook	Forward Cargo Door Hook / Latch System INOP

(M) PROCEDURES

1. Visually inspect door hook / latch mechanism.
2. Refer to manual door operation placards installed on cargo door.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-14

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-34-02	Forward Cargo Door Lift System (Electric Mode)	N	1	0	C (M) May be inoperative provided: a) Manual mode operates normally, b) There is no damage to the door lift system, and c) Door is manually closed, latched and locked using the maintenance manual procedure.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-34-02	Logbook	Forward Cargo Door Lift System Electric Mode INOP

(M) PROCEDURES

1. Visually inspect door lift system components.
2. Refer to manual door operation placards installed on cargo door.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-15

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-34-03	Forward Cargo DOOR LATCHED Light	N	1	0	C (M) May be inoperative provided the forward cargo door is verified to be closed, latched, and locked PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-34-03	Logbook	Forward Cargo DOOR LATCHED Light INOP

(M) PROCEDURES

PRIOR TO EACH DEPARTURE:

1. Close and latch the door using normal procedures.
2. Check that the outside skin of the door is aligned and faired with surrounding body skin.
3. Check that the vent door is open.
4. Rotate the lock handle to the CLOSED position.
5. Check that the lock handle is fully closed and faired with the outside skin of the door.
6. Check that the lock handle release lever is faired with the lock handle and outside skin of the door.
7. Check that the vent door is fully closed.
8. Check that the latches are in the fully latched position and that the locks are in the locked position by visual inspection through the witness ports at the lower edge of the door.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-16

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-36-01	Bulk Cargo Door Counterbalance Mechanism	N	1	0	C (M) May be inoperative provided a safety hold open device is used when door is in the open position.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-36-01	Logbook	Bulk Cargo Door Counterbalance Mechanism INOP

(M) PROCEDURES

1. Secure the door in the open position with the safety strap installed in the bulk compartment (located in ceiling above door; attaches to aft, lower stop fitting).
2. Install placard adjacent to door handle stating: DOOR COUNTERBALANCE INOPERATIVE. USE EXTREME CAUTION WHEN OPENING AND CLOSING DOOR.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-17

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-37-01	Aft Large Cargo Door Hook / Latch System (Electric Mode)	N	1	0	C (M) May be inoperative provided: a) Manual mode operates normally, b) There is no damage to the hook / latch mechanism, and c) Door is manually latched and locked using the maintenance manual procedure.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-37-01	Logbook	Aft Large Cargo Door Hook / Latch System INOP

(M) PROCEDURES

1. Visually inspect door hook / latch mechanism.
2. Refer to manual door operation placards installed on cargo door.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-18

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-37-02	Aft Large Cargo Door Lift System (Electric Mode)	N	1	0	C (M) May be inoperative provided: a) Manual mode operates normally, b) There is no damage to the door lift system, and c) Door is manually closed, latched and locked using the maintenance manual procedure.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-37-02	Logbook	Aft Large Cargo Door Lift System Electric Mode INOP

(M) PROCEDURES

1. Visually inspect door lift system components.
2. Refer to manual door operation placards installed on cargo door.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-19

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-37-03	Aft Large Cargo DOOR LATCHED Light	N	1	0	C (M) May be inoperative provided the aft large cargo door is verified to be closed, latched, and locked PRIOR TO EACH DEPARTURE. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-37-03	Logbook	Aft Large Cargo DOOR LATCHED Light INOP

(M) PROCEDURES

PRIOR TO EACH DEPARTURE:

1. Close and latch the door per normal procedures.
2. Check that the outside skin of the door is aligned and faired with surrounding body skin.
3. Check that the vent door is open.
4. Rotate the lock handle to the CLOSED position.
5. Check that the lock handle is fully closed and faired with the outside skin of the door.
6. Check that the lock handle release lever is faired with the lock handle and outside skin of the door.
7. Check that the vent door is fully closed (the upper edge of the vent door may not be fully faired).
8. Check that the latches are in the fully latched position and that the locks are in the locked position by visual inspection through the witness ports at the lower edge of the door.



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
BOEING ENHANCED FLIGHT DECK SECURITY DOOR (-200LR)					
52-51-02A	BOEING Enhanced Flight Deck Security Door Automatic Locking System "Contact MCC"	Y	1	0	A (O)(M) May be inoperative provided: a) Automatic locking system is deactivated, b) Door dead bolt operates normally and is used to lock the door, c) Refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, for locking and unlocking the door using the dead bolt, and d) Repairs are made within two flight days. NOTE: Ensure the Flight Deck Access System switch is in the OFF position (guard extended) when flight deck door is to be closed and not occupied.
52-51-02B	Flight Deck Access System (Keypad, Door Chime) "Contact MCC"	N	1	0	B (O)(M) May be inoperative provided: a) Keypad is deactivated, and b) Refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, for locking and unlocking the door using the dead bolt. NOTE: Ensure the Flight Deck Access System switch is in the OFF position (guard extended) when flight deck door is to be closed and not occupied.
52-51-02C	Flight Deck Access System LEDs	Y	3	0	C (O) Captain must brief the Purser / FL of the following procedures for inoperative keypad LEDs: <u>Red LED Inoperative:</u> Cabin crew to communicate with flight crew via interphone to confirm cockpit door lock status as necessary. <u>Green LED Inoperative:</u> Door is set to unlock 60 seconds after correct access code is entered on keypad. Use a watch to time the unlock sequence. Audible cues such as cockpit door unlock tone and mechanical sounds of door lock solenoid releasing will aid in determining when cockpit door is unlocked. <u>Amber LED Inoperative:</u> Sixty seconds after correct access code is entered on keypad, the green LED will illuminate and the door will unlock.

CONTINUED NEXT PAGE

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
BOEING ENHANCED FLIGHT DECK SECURITY DOOR (-200LR) (CONTINUED)							
52-51-02D	Flight Deck Access System Switch Guard	Y	1	0	C	May be inoperative or missing provided the flight deck door LOCK FAIL light operates normally.	
52-51-02E	Flight Deck Door LOCK FAIL Light "Contact MCC"	Y	1	0	B	(M) May be inoperative provided automatic lock controls are verified to operate normally.	
52-51-02F	Flight Deck Door AUTO UNLK Light "Contact MCC"	Y	1	0	B	(M) May be inoperative provided: a) Automatic lock controls are verified to operate normally, and b) Door chime operates normally.	
52-51-02G	Flight Deck Door Lock Control Selector "Contact MCC"	N	1	0	B	(O)(M) May be inoperative provided: a) Keypad is deactivated, b) Automatic lock controls are verified to operate normally, and c) Refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, for locking and unlocking the door using the dead bolt. NOTE: Ensure the Flight Deck Access System switch is in the OFF position (guard extended) when flight deck door is to be closed and not occupied.	
52-51-02H	Pressure Rate-Of-Change Sensing Module "Contact MCC"	N	1	0	A	(M) May be inoperative provided: a) Pressure sensing module is deactivated, and b) Repairs are made within two flight days.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-51-02A	Cockpit Door Lock Control Panel	Cockpit Door Automatic Locking System INOP
52-51-02B	Cockpit Door Lock Control Panel	Cockpit Door Access System INOP
52-51-02C	Cockpit Door Lock Control Panel	___ Cockpit Door Keypad LED(s) INOP
52-51-02D	Cockpit Door Lock Control Panel	Cockpit Door Access Switch Guard INOP
52-51-02E	Cockpit Door Lock Control Panel	Cockpit Door LOCK FAIL light INOP
52-51-02F	Cockpit Door Lock Control Panel	Cockpit Door AUTO UNLK light INOP
52-51-02G	Cockpit Door Lock Control Panel	Cockpit Door Lock Control Selector INOP
52-51-02H	Cockpit Door Lock Control Panel	Cockpit Door Pressure Rate-Of-Change Sensing Module INOP

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-22

(O) PROCEDURES

52-51-02A, 52-51-02B, 52-51-02C

Refer to REMARKS or EXCEPTIONS sections on Page 52-20.

52-51-02G

Refer to REMARKS or EXCEPTIONS sections on Page 52-21.

(M) PROCEDURES

52-51-02A

Deactivate the automatic locking system by positioning Flight Deck Access System switch OFF (guard extended).

NOTE: LOCK FAIL light will remain illuminated when the Flight Deck Access System switch is in the OFF position (guard extended).

52-51-02B

Deactivate the keypad.

1. Pull and secure the P110 panel F/D DR LOCK circuit breaker.
2. Remove the keypad.
3. Disconnect the electrical connector from the keypad.
4. Install the keypad.
5. Close the P110 panel F/D DR LOCK circuit breaker.

NOTE: Ensure the Flight Deck Access System switch is in the OFF position (guard extended) when flight deck door is to be closed and not occupied.

52-51-02E, 52-51-02F

Verify the automatic lock controls operate normally.

1. With the flight deck door open, supply electrical power on the airplane.
2. Position Flight Deck Access System switch NORM (guard closed).
3. Position the Flight Deck Door Lock selector AUTO.
4. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you can not rotate the strike).
5. Enter keypad access code and verify the door chime sounds.
6. Position the Flight Deck Door Lock selector DENY.
7. Before the DENY time delay has expired, enter the keypad access code and verify the door chime does not sound.
8. Position and hold Flight Deck Door Lock selector UNLKD.
9. Verify the electric strike is in the unlocked position (solenoid pin in the electric strike will retract down such that you can rotate the strike).
10. Position the Flight Deck Door Lock selector AUTO.
11. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you can not rotate the strike).

CONTINUED NEXT PAGE

 DELTA	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-23

52-51-02G

1. Deactivate the keypad.
 - a. Pull and secure the P110 panel F/D DR LOCK circuit breaker.
 - b. Remove the keypad.
 - c. Disconnect the electrical connector from the keypad.
 - d. Install the keypad.
 - e. Close the P110 panel F/D DR LOCK circuit breaker.

NOTE: Ensure the Flight Deck Access System switch is in the OFF position (guard extended) when flight deck door is to be closed and not occupied.
2. Verify the automatic lock controls operate normally.
 - a. With the flight deck door open, supply electrical power on the airplane.
 - b. Position Flight Deck Access System switch NORM (guard closed).
 - c. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you can not rotate the strike).
 - d. Position the Flight Deck Access System switch OFF (guard extended).
 - e. Verify the electric strike is in the unlocked position (solenoid pin in the electric strike will retract down such that you can rotate the strike).
 - f. Position Flight Deck Access System switch NORM (guard closed).
 - g. Verify the electric strike is in the locked position (solenoid pin in the electric strike will be extended up such that you can not rotate the strike).

52-51-02H

Deactivate the pressure sensing module (pressure sensor).

1. Pull and secure the P110 panel F/D DR LOCK circuit breaker.
2. Remove the pressure sensor.
3. Disconnect the electrical connector from the pressure sensor.
4. A closed circuit from the pressure sensor is required to keep the automatic locking system operating.
 - a. Fabricate a shorting plug using a connector part number equivalent to Government Designation M83513/04-A01N (detail specification MIL-DTL-83513).
 - b. Trim the excess wire to a 2 to 3 inch length.
 - c. Splice wires 4 and 6 together.
 - d. Insulate splice and wire pigtails.
 - e. Connect the shorting plug to the electrical connector and stow.
5. Install the pressure sensor.
6. Close P110 panel F/D DR LOCK circuit breaker.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-24

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
52-51-03	Boeing Enhanced Flight Deck Security Door Dead Bolt (-200LR)	Y	1	0	C	May be inoperative provided automatic locking system operates normally.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-51-03	Cockpit Door Lock Control Panel	Cockpit Door Dead Bolt INOP



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
JAMCO FLIGHT DECK SECURITY DOOR (-200ER)					
52-51-04A	JAMCO Flight Deck Security Door Automatic Locking System "Contact MCC"	Y	1	0	C (O)(M) May be inoperative provided: a) Automatic locking system is deactivated, b) Mechanical latch pin lock operates normally and is used to lock the door, and c) Refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, for locking and unlocking the flight deck door using the mechanical latch pin lock. NOTE: The FAA has authorized the use of the mechanical latch pin lock for MEL dispatch. Disregard "Latch Pin For Ground Use Only, Do Not Use During Flight" placard when dispatched under this MEL.
52-51-04B	Door Automatic Locking Solenoids	N	2	1	C (M) May be inoperative provided the remaining locking solenoid is verified to operate normally.
52-51-04C	Door Aural Warning System	Y	1	0	C (O)(M) May be inoperative provided: a) Door AUTO UNLK light is verified to operate normally, and b) Refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, when flight deck security door automatic locking system components are inoperative.
52-51-04D	Door LOCK FAIL Light	Y	1	0	C (M) May be inoperative off provided automatic lock controls are verified to operate normally.
52-51-04E	Door AUTO UNLK Light	Y	1	0	C (O)(M) May be inoperative off provided: a) Automatic lock controls are verified to operate normally, b) Door aural warning system operates normally, and c) Refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, when flight deck security door automatic locking system components are inoperative.

CONTINUED NEXT PAGE



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
	JAMCO FLIGHT DECK SECURITY DOOR (-200ER) (CONTINUED)				
52-51-04F	Door UNLK Switch Position	Y	1	0	C (O)(M) May be inoperative provided: a) Door can be opened manually from the flight deck, b) Remaining automatic lock controls are verified to operate normally, and c) Refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, when flight deck security door automatic locking system components are inoperative.
52-51-04G	Cabin Keypad	Y	1	0	C (O) May be inoperative provided flight crewmembers refer to 777 QRH, Non-Normal Checklist, LOCK FAIL, when flight deck security door automatic locking system components are inoperative.
52-51-04H	Keypad Indicator Lights	Y	3	0	C (O)(M) May be inoperative provided: a) Keypad is verified to operate normally, and b) Captain must brief the Purser / FL of the following procedures for inoperative keypad LEDs: <u>Red LED Inoperative:</u> Cabin crew to communicate with flight crew via interphone to confirm cockpit door lock status as necessary. <u>Green LED Inoperative:</u> Door is set to unlock 60 seconds after correct access code is entered on keypad. Use a watch to time the unlock sequence. Audible cues such as cockpit door unlock tone and mechanical sounds of door lock solenoid releasing will aid in determining when cockpit door is unlocked. <u>Amber LED Inoperative:</u> Sixty seconds after correct access code is entered on keypad, the green LED will illuminate and the door will unlock.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-27

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-51-04A	Cockpit Door Lock Control Panel	Cockpit Door Automatic Locking System INOP
52-51-04B	Cockpit Door Lock Control Panel	Cockpit Door Automatic Locking Solenoid INOP
52-51-04C	Cockpit Door Lock Control Panel	Cockpit Door Aural Warning System INOP
52-51-04D	Cockpit Door Lock Control Panel	Cockpit Door LOCK FAIL Light INOP
52-51-04E	Cockpit Door Lock Control Panel	Cockpit Door AUTO UNLK Light INOP
52-51-04F	Cockpit Door Lock Control Panel	Cockpit Door UNLK Switch Position INOP
52-51-04G	Cockpit Door Lock Control Panel	Cabin Keypad INOP
52-51-04H	Cockpit Door Lock Control Panel	Cabin Keypad Indicator Light(s) INOP

(O) PROCEDURES

52-51-04A, 52-51-04C, 52-51-04E

Refer to REMARKS or EXCEPTIONS section on Page 52-25.

52-51-04F, 52-51-04G, 52-51-04H

Refer to REMARKS or EXCEPTIONS section on Page 52-26.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-28

(M) PROCEDURES

52-51-04A

Pull and secure two circuit breakers identified as FLT DECK DR PWR-1 on the P11-3 Overhead C/B panel and the FLT DECK DR PWR-2 on the P11-6 Overhead C/B panel.

52-51-04B

1. For primary solenoid inoperative, pull and secure FLT DECK DR PWR-1 C/B.
 - a. Close flight deck door and verify door is locked.
2. For secondary solenoid inoperative, pull and secure FLT DECK DR PWR-2 C/B.
 - a. Close flight deck door and verify door is locked.

52-51-04C

1. Close and lock the flight deck door.
2. Have an assistant select the proper code on the keypad.
3. Verify the AUTO UNLK light illuminates.

52-51-04D

1. Close P11 Overhead C/B panel circuit breakers identified as FLT DECK DR PWR-1 FLT DECK DR PWR-2.
2. Open FLT DECK DR PWR-1 C/B.
3. Close flight deck door and verify door is locked.
4. Close FLT DECK DR PWR-1 and open FLT DECK DR PWR-2 C/B.
5. Close flight deck door and verify door is locked.
6. Close FLT DECK DR PWR-2 C/B.
7. Select UNLK on cockpit door control panel located on P5 overhead panel.
8. Verify door unlocks.

52-51-04E

1. With flight deck door automatic locking system energized, close the flight deck door.
2. Select the UNLK positions on the rotary switch on the door lock controller panel on the P5 pilots overhead panel and verify the flight deck door unlocks.
3. Close and lock the flight deck door.
4. Have an assistant select the proper code on the keypad.
5. Verify the door aural warning tone sounds intermittently with increasing volume for 60 seconds followed by a door unlock condition.

52-51-04F

1. Close P11 Overhead C/B panel circuit breakers identified as FLT DECK DR PWR-1 FLT DECK DR PWR-2.
2. Open FLT DECK DR PWR-1 C/B.
3. Close flight deck door and verify door is locked.
4. Close FLT DECK DR PWR-1 and open FLT DECK DR PWR-2 C/B.
5. Close flight deck door and verify door is locked.
6. Close FLT DECK DR PWR-2 C/B.

52-51-04H

1. Close and lock the flight deck door.
2. Have an assistant select the proper code on the keypad.
3. Verify that door unlocks after a 60 second time delay.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-29

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-51-05	JAMCO Flight Deck Security Door Mechanical Latch Pin Lock (-200ER)	Y	1	0	C (M) May be inoperative provided automatic locking system operates normally.

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-51-05	Cockpit Door Lock Control Panel	Cockpit Security Door Mechanical Latch Pin Lock INOP

(M) PROCEDURES

1. Verify two circuit breakers identified as FLT DECK DR PWR-1 on the P11-3 Overhead C/B panel and the FLT DECK DR PWR-2 on the P11-6 Overhead C/B panel are closed.
2. Close flight deck door and verify door is locked.
3. Select UNLK on cockpit door control panel located on P5 overhead panel.
4. Verify door unlocks.
5. Close flight deck door.
6. Have an assistant select the proper code on the keypad.
7. Verify the following:
 - a. The AUTO UNLK light illuminates
 - b. The door aural warning tone sounds intermittently with increasing volume for 60 seconds.
 - c. Door unlocks after 60 second time delay.
8. Close flight deck door.
9. Have an assistant select the proper code on the keypad.
10. Prior to the end of the 60 second time delay, select DENY on the door control panel on P5 overhead panel.
11. Verify door unlock sequence terminates and door remains locked.

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
52-71-01	Door Indication Systems	N - 0	C	(M) May be inoperative provided associated door is verified closed, latched, and locked PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-71-01	Center Display Control Panel	___ Door Indication System(s) INOP

(M) PROCEDURES

PRIOR TO EACH DEPARTURE:

NOTE: If a door alert level message is displayed without the associated status message after the door is closed, latched and locked, the airplane should **not** be dispatched until the message is resolved. The Bulk Cargo Door, Forward Access Door, Main Equipment Center Access Door and Overwing Slide Compartment Doors are not included in this condition.

1. Passenger Entry Doors:

- Open the affected door(s) in MANUAL / DISARMED mode, then close and latch.
- Check that the door interior liner is aligned and faired with the doorway lining.
- Check that the OPEN arrow on the hinge arm linings is aligned and continuous at crossover from forward section of lining to aft section of lining.
- Position the door mode select handle to AUTOMATIC / ARMED, and check that the yellow flags are visible in the viewing windows immediately forward and aft of door at floor level.
- Check that the outside skin of the door is aligned and faired with the surrounding body skin.
- Check that the vent door is fully closed.

2. Forward and Aft Large Cargo Door:

- Close and latch the affected door(s) using normal procedures.
- Check that the outside skin of the door is aligned and faired with surrounding body skin.
- Rotate the lock handle to the OPEN position.
- Check that the vent door is open.
- Rotate the lock handle back to the CLOSED position.
- Check that the lock handle is fully closed and faired with the outside skin of the door.
- Check that the lock handle release lever is faired with the lock handle and outside skin of the door.
- Check that the vent door is fully closed (the upper edge of the vent door may not be fully faired).
- Check that the latches are in the fully latched position and that the locks are in the locked position by visual inspection through the witness ports at the lower edge of the door.

3. Bulk Cargo Door, Forward Access Door, and Main Equipment Center Access Door:

- Close and latch the affected door(s) using normal procedures.
- Check that the outside skin of the door is aligned and faired with the surrounding body skin.
- Check that the latch handle is fully closed and faired with the door skin.
- Push on the door to verify it is latched.

	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-31

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
52-71-02	Main Entry Door Status Annunciation and Alerting System (Flight Attendant)	Y	1	0	C (O) May be inoperative provided: a) For the ARM / DISARM door status annunciation inoperative, door status indications on the door must be used, and b) Both arm / disarm witness ports near the bottom of each door must be checked: a. Witness ports Yellow = door armed b. Witness ports Clear = door disarmed

MEL ITEM	TAB LOCATION	PLACARD TEXT
52-71-02	L1 Flight Attendant Door Status Annunciation Panel	Main Entry Door Status Annunciation and Alerting System INOP

NOTE: This item is intended for the ARM / DISARM door status annunciations on the attendant switch panel at Door L1.

(O) PROCEDURES

Refer to REMARKS or EXCEPTIONS section above.

 DELTA	B777 Minimum Equipment List	ATA 52 Doors	R14 05/09/16 Page 52-32

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	B777 Minimum Equipment List	ATA 53 Fuselage	R14 05/09/16 Page 53-1

ATA 53 Contents

53-00-00V	RVSM Status.....	53-2

NUMBER INSTALLED			NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD			REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION			REMARKS OR EXCEPTIONS
53-00-00V	RVSM Status "DISP.APPR.REQ'D." Administrative Control Item	N	-	(O)(M) Authorized by MCC when: a) RVSM operations cannot be used, b) No specific MEL item applies, and c) The aircraft must remain at or below FL280. NOTE: This Item Number is only used for restricting the RVSM status of the aircraft and MCC authorization is required prior to its usage or removal. <u>RVSM Operations</u> Not Authorized

MEL ITEM	TAB LOCATION	PLACARD TEXT
53-00-00V	Adjacent to each PFD	RVSM OPERATIONS NOT AUTHORIZED

(O) PROCEDURES

- RVSM operations – Not Authorized.
- Limit altitude to FL280 or below.
- [Refer to Airway Manual, Airspace & Enroute Navigation, for RVSM procedures and contingencies.](#)

(M) PROCEDURES

- The AMT will be instructed by MCC to create a new log page in the aircraft logbook using the appropriate MEL Item Number.
- The deferral code VSM must also be entered on the log page and the placard when deferring this item.
- MCC authorization is required prior to its usage or removal.

	B777 Minimum Equipment List	ATA 56 Windows	R14 05/09/16 Page 56-1

ATA 56 Contents

56-11-01	Flight Deck Window Indication Systems (Side No. 2).....	56-2

	B777 Minimum Equipment List	ATA 56 Windows	R14 05/09/16 Page 56-2

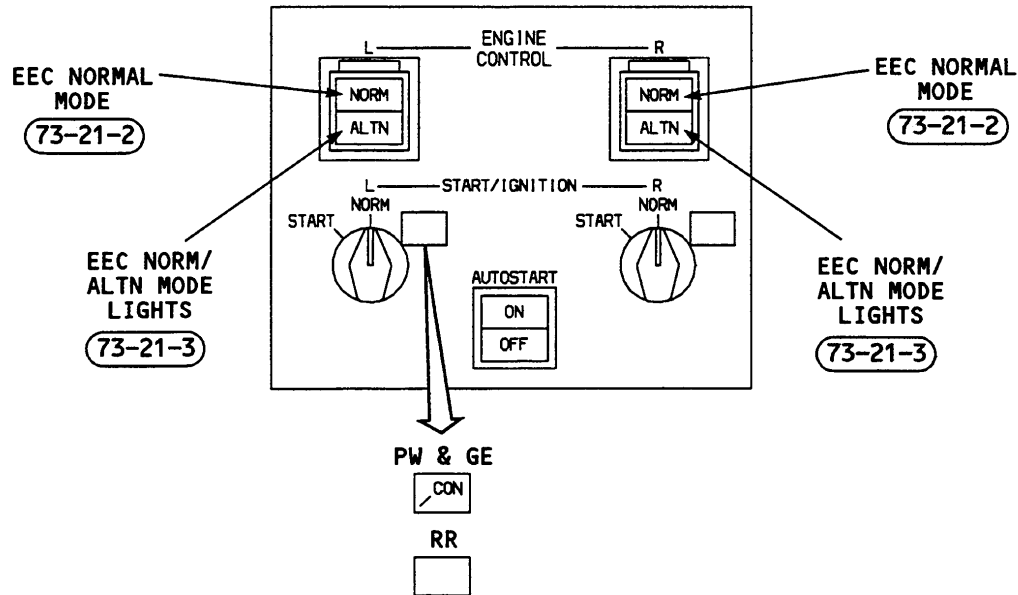
NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
56-11-01	Flight Deck Window Indication Systems (Side No. 2)	N		2	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
56-11-01	Center Display Control Panel	___ Flight Deck Window Indication Systems INOP

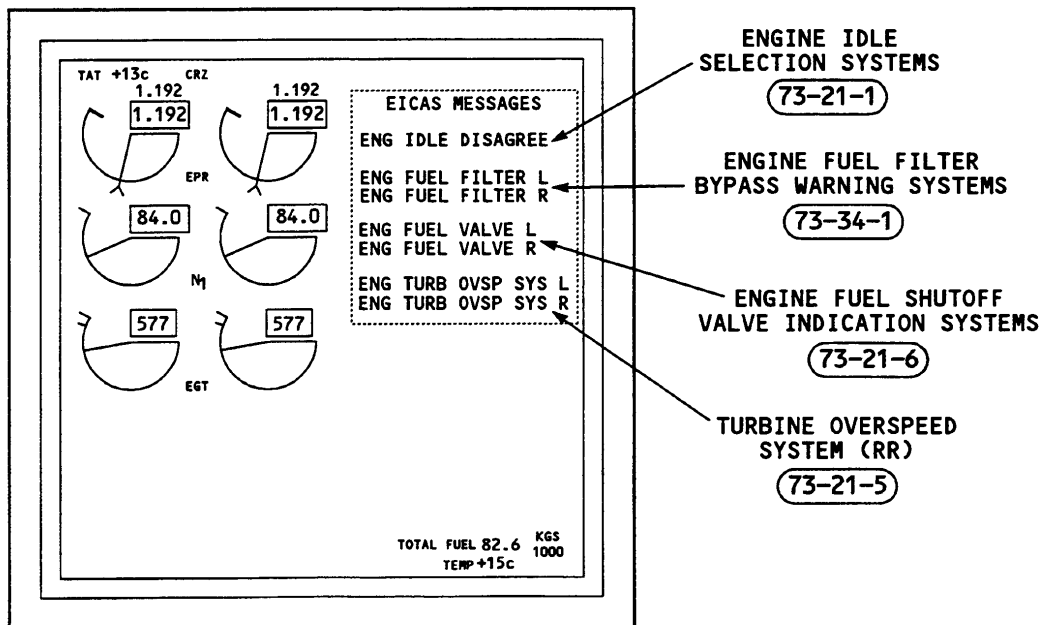
ATA 73 Contents

73-21-01	Engine Idle Selection Systems.....	73-5
73-21-02A	Electronic Engine Controls (EEC) Normal Mode (GE) (-200LR)	73-6
73-21-02B	Electronic Engine Controls (EEC) Normal Mode (RR) (-200ER)	73-6
73-21-03A	Electronic Engine Controls (EEC) Mode Switch Lights (ALTN Lights)	73-8
73-21-03B	Electronic Engine Controls (EEC) Mode Switch Lights (NORM Lights)	73-8
73-21-04A	EEC C1 Faults (-200ER)	73-9
73-21-05	Turbine Overspeed Systems (-200ER)	73-10
73-21-06	Engine Fuel Shutoff Valve Indication Systems	73-11
73-21-07	Engine Thrust Control Malfunction Accommodation (TCMA) Functions (-200LR)	73-12
73-31-01	Fuel Flow Indications.....	73-13
73-34-01A	Engine Fuel Filter Bypass Warning Systems (-200ER)	73-14

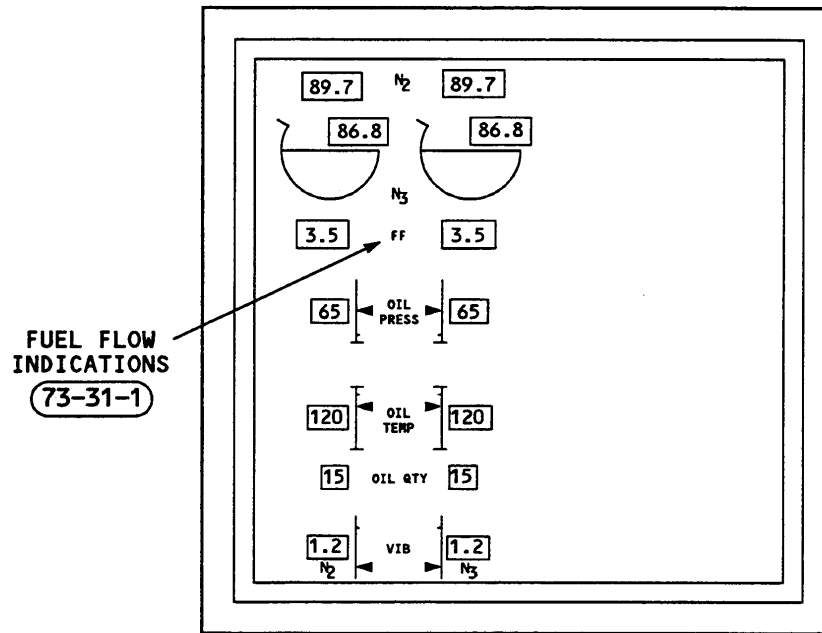
EEC AND START/IGNITION PANEL (P5)



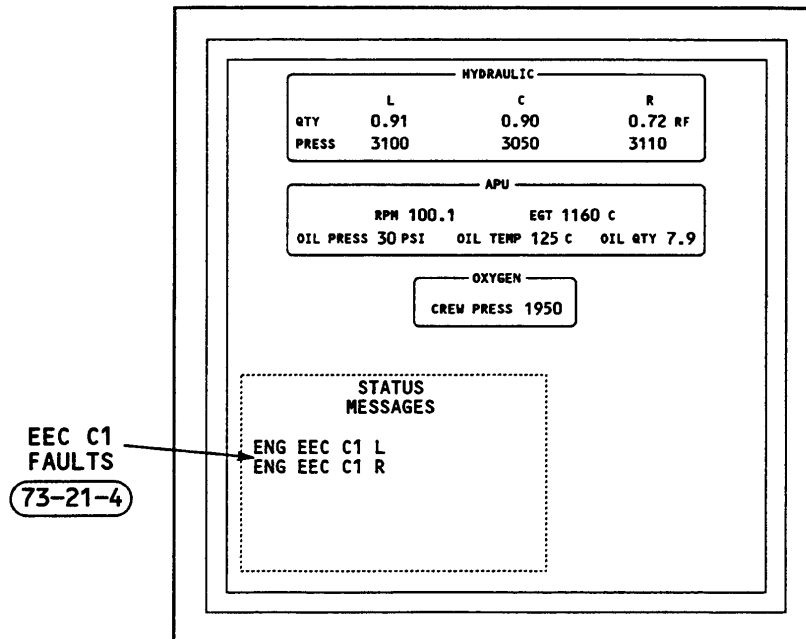
EICAS DISPLAY



MULTI-FUNCTION DISPLAY

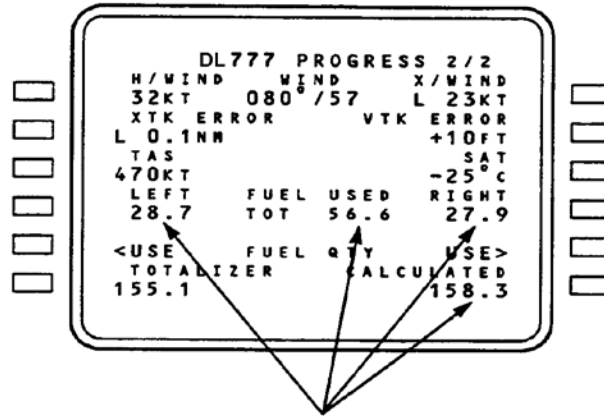


MFD - EICAS STATUS PAGE



ENGINE FUEL & CONTROL

CDU PROGRESS PAGE 2



FUEL FLOW
INDICATIONS

73-31-1

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
73-21-01	Engine Idle Selection Systems "DISP.APPR.REQ'D."	Y	2	0	C (O) May be inoperative provided appropriate performance adjustments are applied.

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-21-01	Fuel Control Panel	___ Engine Idle Selection System(s) INOP

(O) PROCEDURES

73-21-01	ENGINE IDLE SELECTION SYSTEMS
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 1,900 lbs. per affected engine.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

73-21-01	ENGINE IDLE SELECTION SYSTEMS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	Increase BLOCK FUEL by 375 lbs. per affected engine.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
73-21-02A	Electronic Engine Controls (EEC) Normal Mode (GE) (-200LR) "DISP.APPR.REQ'D."	Y	2	0	B (O) Normal (NORM) mode may be inoperative provided: a) Autothrottle system operates normally, b) LPT Turbine Case Cooling Air Flow Systems on both engines operate normally, c) Both engines are operated in the alternate (ALTN) mode, and d) Appropriate performance adjustments are applied.
73-21-02B	Electronic Engine Controls (EEC) Normal Mode (RR) (-200ER) "DISP.APPR.REQ'D."	Y	2	0	C (O) Normal (NORM) mode may be inoperative provided: a) Autothrottle system operates normally, b) N2 Indication on affected engine operates normally, c) Both engines are operated in the alternate (ALTN) mode, and d) Airplane is dispatched in accordance with the appropriate AFM Alternate EEC Mode Operation Appendix. (Refer to Delta ODM, Abnormals Section).

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-21-02A	Near EEC MODE Switches	___ Engine EEC Normal Mode INOP
73-21-02B	Near EEC MODE Switches	___ Engine EEC Normal Mode INOP

NOTE: The GROUND TEST ENABLE Status message indicates the overhead maintenance panel (P61) GND TEST switch is in the ENABLE position. The message may be cleared by returning the switch to the NORM position.

(O) PROCEDURES

73-21-02A

NOTE 1: Derated and/or reduced thrust takeoffs and takeoff thrust bumps are not allowed.

NOTE 2: Thrust rating protection is not provided in alternate mode (for manual thrust settings) and maximum rated thrust is reached at a thrust lever position less than full forward.

1. Base performance on EECs operating in alternate mode.
2. Position both EEC Mode switches to ALTN.
3. Selection of TOB (if available) is not allowed. Select TO for takeoff.
4. For takeoff, engage autothrottles and arm VNAV.

CONTINUED NEXT PAGE

73-21-02A ELECTRONIC ENGINE CONTROLS (EEC) NORMAL MODE	
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 1.2%
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None
	LANDING None

73-21-02B

NOTE 1: Derated and/or reduced thrust takeoffs and takeoff thrust bumps are not allowed.

NOTE 2: Thrust rating protection is not provided in alternate mode (for manual thrust settings) and maximum rated thrust is reached at a thrust lever position less than full forward.

NOTE 3: Use of autothrottles when dispatching with EECs in alternate mode makes it easier to maintain thrust at the reference limit.

1. Position both EEC Mode switches to ALTN.
2. For THRUST ASYM COMP advisory and status messages displayed, position the THRUST ASYM COMP switch to OFF then to AUTO to restore Thrust Asymmetry Compensation functionality.
3. Prior to autothrottle engagement for takeoff, advance thrust levers to approximately 50% N1.

73-21-02B ELECTRONIC ENGINE CONTROLS (EEC) NORMAL MODE	
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	Reduce ENROUTE LIMIT WT by 55,300 lbs.
NOTES	Make a notation on the Flight Plan when Enroute Climb is limiting.
AWABS	1. Performance weight corrections have been applied. 2. Refer to ODM – Abnormal section for N1 settings and V-speed corrections.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF 1. Reduce RATOW by 50,800 lbs. 2. Reduce T/O CLIMB LIMIT by 51,400 lbs.
	LANDING Reduce LANDING CLIMB LIMIT WT by 58,000 lbs.
	OTHER CORRECTIONS Refer to ODM – Abnormal section for N1 settings and V-speed corrections.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
73-21-03A	Electronic Engine Controls (EEC) Mode Switch Lights (ALTN Lights)	Y	2	0	C	
73-21-03B	Electronic Engine Controls (EEC) Mode Switch Lights (NORM Lights)	Y	2	0	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-21-03A	Near EEC MODE Switches	___ Engine EEC ALTN Light(s) INOP
73-21-03B	Near EEC MODE Switches	___ Engine EEC NORM Light(s) INOP

	B777 Minimum Equipment List	ATA 73 Engine Fuel & Control	R14 05/09/16 Page 73-9

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
73-21-04A	EEC C1 Faults (-200ER) "Contact MCC"	Y	2	0	A May be dispatched with C1 faults provided repairs are made within 300 flight hours or 20 flight days, whichever occurs first.
73-21-04B	EEC C1 Faults (-200LR) "Contact MCC"	Y	2	0	A May be dispatched with C1 faults provided repairs are made within 150 flight hours or 10 flight days, whichever occurs first.

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-21-04A	Near EEC MODE Switches	___ Engine EEC C1 Fault(s)
73-21-04B	Near EEC MODE Switches	___ Engine EEC C1 Fault(s)

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
73-21-05	Turbine Overspeed Systems (-200ER)	Y	2	1	C		

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-21-05	Center Display Control Panel	Turbine Overspeed System INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
73-21-06	Engine Fuel Shutoff Valve Indication Systems	N	2	1 C	(O)(M) May be inoperative provided the associated valve is verified to operate normally ONCE EACH FLIGHT DAY (Logbook Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-21-06	Center Display Control Panel	___ Engine Fuel Shutoff Valve Indication System INOP

(O) PROCEDURES

The ENG FUEL VALVE L or R advisory message will be displayed.

(M) PROCEDURES

ONCE EACH FLIGHT DAY:

- Start the associated engine and allow engine to stabilize at ground idle.
- Open the P11 panel FUEL SPAR VALVE circuit breaker for the associated engine.
- After minimum engine operating time, position the associated engine FUEL CONTROL switch to CUTOFF and confirm engine shutdown.
- For engine not shutdown, the fuel shutoff valve is not operating normally.
 - Monitor EGT and be prepared to motor the engine.
 - Close the P11 panel FUEL SPAR VALVE circuit breaker.
 - The engine may continue to operate for one minute.
- Confirm the associated FUEL SPAR VALVE L or R status message is displayed.
- Erase the latched FUEL SPAR VALVE L or R status message.
- After engine has stopped rotating, close the P11 panel FUEL SPAR VALVE circuit breaker.

	B777 Minimum Equipment List	ATA 73 Engine Fuel & Control	R14 05/09/16 Page 73-12

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
73-21-07	Engine Thrust Control Malfunction Accommodation (TCMA) Functions (-200LR)	Y	2	1	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-21-07	Center Display Control Panel	___ TCMA Functions INOP

	B777 Minimum Equipment List	ATA 73 Engine Fuel & Control	R14 05/09/16 Page 73-13

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
73-31-01	Fuel Flow Indications "DISP.APPR.REQ'D."	Y	2	1 C	One may be inoperative provided: a) Flight deck fuel tank quantity indicating systems operate normally, and b) Flight remains within 180 minutes of landing at a suitable airport.

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-31-01	Center Display Control Panel	___ Engine Fuel Flow Indication INOP

OPERATIONS NOTE:

FMC Calculated Fuel, associated engine Fuel Used and Fuel Used Total indications will be inoperative.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
73-34-01A	Engine Fuel Filter Bypass Warning Systems (-200ER)	N	2	1	C (M) May be inoperative provided: a) It is verified that the malfunction is in the alerting system, and b) Fuel is drained from filter plug and checked for contaminants PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)
73-34-01B	Engine Fuel Filter Bypass Warning Systems (-200LR)	N	2	1	C (M) May be inoperative provided fuel is drained from filter plug and checked for contaminants PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
73-34-01A	Center Display Control Panel	___ Engine Fuel Filter Bypass Warning System INOP
73-34-01B	Center Display Control Panel	___ Engine Fuel Filter Bypass Warning System INOP

(M) PROCEDURES

PRIOR TO EACH DEPARTURE:

73-34-01A

1. Verify that the malfunction is in the alerting system.
 - a. If MAT is available:
 - 1) For left engine, confirm maintenance message 73-70131 is displayed and 73-90121 is not displayed.
 - 2) For right engine, confirm maintenance message 73-70132 is displayed and 73-90122 is not displayed.
 - b. Do a continuity check of the fuel filter differential pressure switch:
 - 1) Open the associated right fan cowl panel.
 - 2) Gain access to the associated engine's Electronic Engine Control (EEC).
 - 3) Disconnect electrical connector DM73003E.
 - 4) Measure the resistance between pin 39 and pin 40 on electrical connector DM73003E.
 - 5) If resistance is less than 100 ohms, the malfunction is in the alerting system.
 - 6) Measure the resistance between pin 39 and the connector backshell on the electrical connector DM73003E.
 - 7) If resistance is less than 100K ohms, the malfunction is in the alerting system.
 - 8) Connect electrical connector DM73003E to the EEC (Ref. AMM 70-50-02/201).
 - 9) Close the associated right fan cowl panel

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 73 Engine Fuel & Control	R14 05/09/16 Page 73-15

2. Check fuel for contaminants at the associated low pressure fuel pump filter, which is installed in the fuel oil heat exchanger (FOHE).
 - a. Open the associated right fan cowl panel.
 - b. Drain a small amount of fuel from the fuel filter and examine for contaminants:
 - 1) Remove fuel filter plug and drain a small amount of fuel into a container.
NOTE: Water is not a contaminant that can cause a fuel filter bypass.
 - 2) Examine the fuel for contaminants (visible particles of solid material).
 - 3) Install fuel filter drain plug with a new seal.
 - c. Close the associated right fan cowl panel

73-34-01B

PRIOR TO EACH DEPARTURE:

NOTE: Dispatch is not allowed with ENG FUEL FILTER L or R status message displayed. Check fuel for contamination.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated thrust reverser for ground maintenance.
3. Open the associated left and right fan cowl panels.
4. Open the associated right thrust reverser.
5. Drain a small amount of fuel from the engine fuel filter bowl and examine for contaminants.
 - a. Remove fuel filter bleeder drain plug and drain a small amount of fuel into a container.
NOTE: Water is not a contaminant that can cause a fuel filter bypass.
 - b. Examine the fuel for contaminants (visible particles of solid material).
 - c. Install fuel filter bleeder drain plug with new preformed packing.
6. Close the associated right thrust reverser.
7. Close the associated left and right fan cowl panels.
8. Re-activate the associated thrust reverser after ground maintenance.
9. Activate the leading edge slats.

 DELTA	B777 Minimum Equipment List	ATA 73 Engine Fuel & Control	R14 05/09/16 Page 73-16

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	B777 Minimum Equipment List	ATA 74 Engine Ignition	R14 05/09/16 Page 74-1

ATA 74 Contents

74-00-01A	Ignition Systems	74-2

	B777 Minimum Equipment List	ATA 74 Engine Ignition	R14 05/09/16 Page 74-2

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
74-00-01A	Ignition Systems “Contact MCC”	Y	4	3	B	One may be inoperative provided associated engine anti-ice system operates normally.
74-00-01B	Ignition Systems “DISP.APPR.REQ'D.”	Y	4	3	B	One may be inoperative provided associated engine anti-ice system is inoperative with valve deactivated open and deferred per MEL 30-21-01.

MEL ITEM	TAB LOCATION	PLACARD TEXT
74-00-01A	Engine Start Panel	___ Engine ___ Ignition System INOP
74-00-01B	Engine Start Panel	___ Engine ___ Ignition System INOP

	B777 Minimum Equipment List	ATA 75 Engine Bleed Air	R14 05/09/16 Page 75-1

ATA 75 Contents

75-23-02	Core Compartment Cooling Vavles.....	75-2
75-24-01	Turbine Case Cooling Flow LPT Systems	75-3

	B777 Minimum Equipment List	ATA 75 Engine Bleed Air	R14 05/09/16 Page 75-2

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
75-23-02	Core Compartment Cooling Valves (-200LR)	N	2	0	C (M) May be inoperative locked open.

MEL ITEM	TAB LOCATION	PLACARD TEXT
75-23-02	Near Lower EICAS Display	___ Core Compartment Cooling Vavle(s) INOP

(M) PROCEDURES

Lock the inoperative Core Compartment Cooling (CCC) valve in the open position.

1. Deactivate the leading edge slats in the retracted position.
2. Deactivate the associated engine thrust reverser for ground maintenance.
3. Open the associated left and right fan cowl panels.
4. Open the associated right thrust reverser.
5. Lock the associated CCC valve (located on the forward engine core at 1:00) open by following the TO LOCK OPEN instructions placard on the valve.
6. Close the associated right thrust reverser.
7. Close the associated left and right fan cowl panels.
8. Re-activate the associated engine thrust reverser after ground maintenance.
9. Re-activate the leading edge slats.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
75-24-01	Turbine Case Cooling Flow LPT Systems (-200LR) "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Associated LPT ACC valve is locked in the closed position, and b) Both EECs operate in the normal mode.

MEL ITEM	TAB LOCATION	PLACARD TEXT
75-24-01	Near Lower EICAS Display	___ Turbine Case Cooling Flow LPT System(s) INOP

(O) PROCEDURES

75-24-01	TURBINE CASE COOLING FLOW LPT SYSTEMS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 0.8% for both valves deactivated closed. 2. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by an additional 1.8%.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

(M) PROCEDURES

Lock the inoperative turbine case cooling air flow valve in the closed position.

- Deactivate the leading edge slats in the retracted position.
- Deactivate the associated engine thrust reverser for ground maintenance.
- Lock the associated LPT ACC valve closed:
 - Open associated left and right fan cowl panels.
 - Open the associated right thrust reverser.
 - Lock the inoperative LPT ACC valve (located on the engine core at 3:00) in the closed position by following the placard instructions on the valve.
 - Close the associated right thrust reverser.
 - Close the associated left and right fan cowl panels.
- Re-activate the associated engine thrust reverser after ground maintenance.
- Re-activate the leading edge slats.

 DELTA	B777 Minimum Equipment List	ATA 75 Engine Bleed Air	R14 05/09/16 Page 75-4

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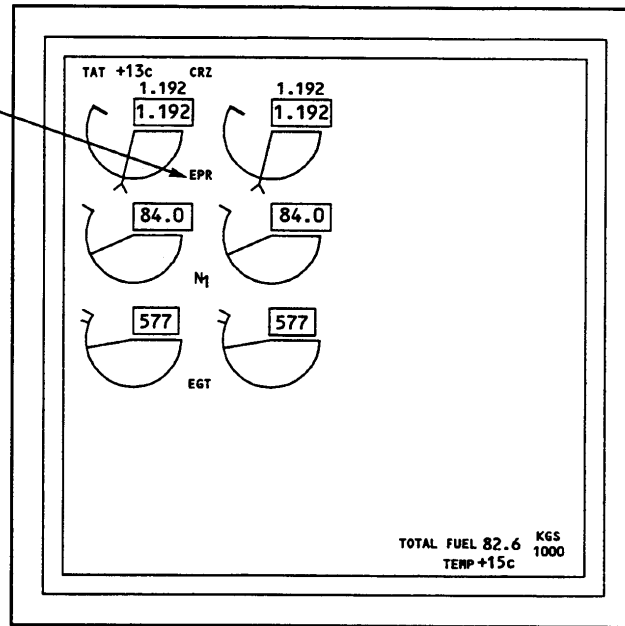
	B777 Minimum Equipment List	ATA 77 Engine Indicating	R14 05/09/16 Page 77-1

ATA 77 Contents

77-11-01	Engine Pressure Ratio (EPR) Indicating Systems (-200ER)	77-4
77-12-01	N2 Tachometer Systems.....	77-5
77-22-01	Engine Turbine Overheat Sensors (-200ER)	77-6
77-31-01	Engine Vibration Monitor Systems	77-7

EICAS DISPLAY

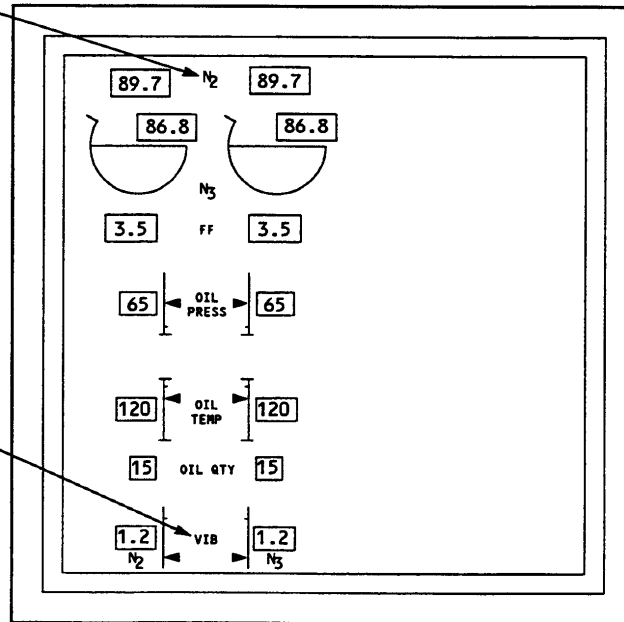
EPR INDICATING
SYSTEMS
(PW & RR)
(77-11-1)



MULTI-FUNCTION DISPLAY

N2 TACH
SYSTEMS
(RR)
(77-12-1)

ENGINE VIBRATION
MONITOR SYSTEMS
(77-31-1)



ENGINE INDICATING

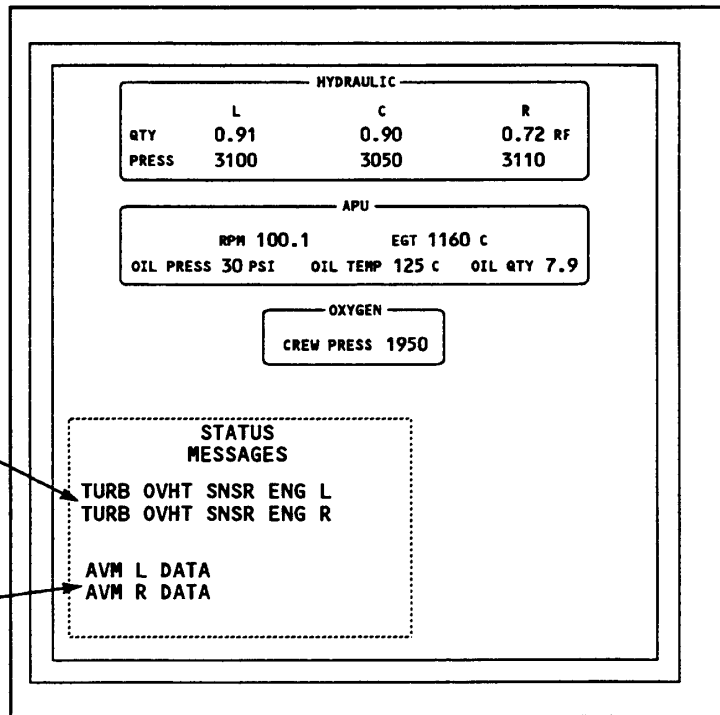
MFD - EICAS STATUS PAGE

ENGINE TURBINE
OVERHEAT SENSORS
(RR)

(77-22-1)

AVM
DATA

(77-31-2)



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
77-11-01	Engine Pressure Ratio (EPR) Indicating Systems (-200ER) "DISP.APPR.REQ'D."	Y	2	0	C (O) May be inoperative provided: a) Both engines are operated in the alternate (ALTN) mode, b) N2 indication on affected engine operates normally, and c) Airplane is dispatched in accordance with the appropriate AFM Alternate EEC Mode Operation Appendix. (Refer to Delta ODM, Abnormals Section.).

MEL ITEM	TAB LOCATION	PLACARD TEXT
77-11-01	Near EICAS Display	___ Engine EPR Indicating System(s) INOP

(O) PROCEDURES

Comply with applicable (O) [PROCEDURES in MEL 73-21-02B](#).

	B777 Minimum Equipment List	ATA 77 Engine Indicating	R14 05/09/16 Page 77-5

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH				
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY				
ITEM NO. NAME / DESCRIPTION					REMARKS OR EXCEPTIONS			
77-12-01	N2 Tachometer Systems "Contact MCC"	Y	2	1	B	May be inoperative provided EPR and Fuel Flow operate normally.		

MEL ITEM	TAB LOCATION	PLACARD TEXT
77-12-01	Center Display Control Panel	___ Engine N2 Tachometer System INOP

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
77-22-01	Engine Turbine Overheat Sensors (-200ER)	Y	4	2	C	One per engine may be inoperative.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
77-22-01	Center Display Control Panel	___ Engine Turbine Overheat Sensor(s) INOP

	B777 Minimum Equipment List	ATA 77 Engine Indicating	R14 05/09/16 Page 77-7

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
77-31-01	Engine Vibration Monitor Systems	Y	2	1 C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
77-31-01	Center Display Control Panel	___ Engine Vibration Monitor System INOP

MAINTENANCE NOTE:

If desired, the inoperative engine vibration monitor system may be deactivated. Maintenance is Required and Flight Crew May **Not** Placard.

1. For left engine vibration monitor inoperative, pull and secure P110 panel L ENG VIB MON circuit breaker.
2. For right engine vibration monitor inoperative, pull and secure P210 panel R ENG VIB MON circuit breaker.

 DELTA	B777 Minimum Equipment List	ATA 77 Engine Indicating	R14 05/09/16 Page 77-8

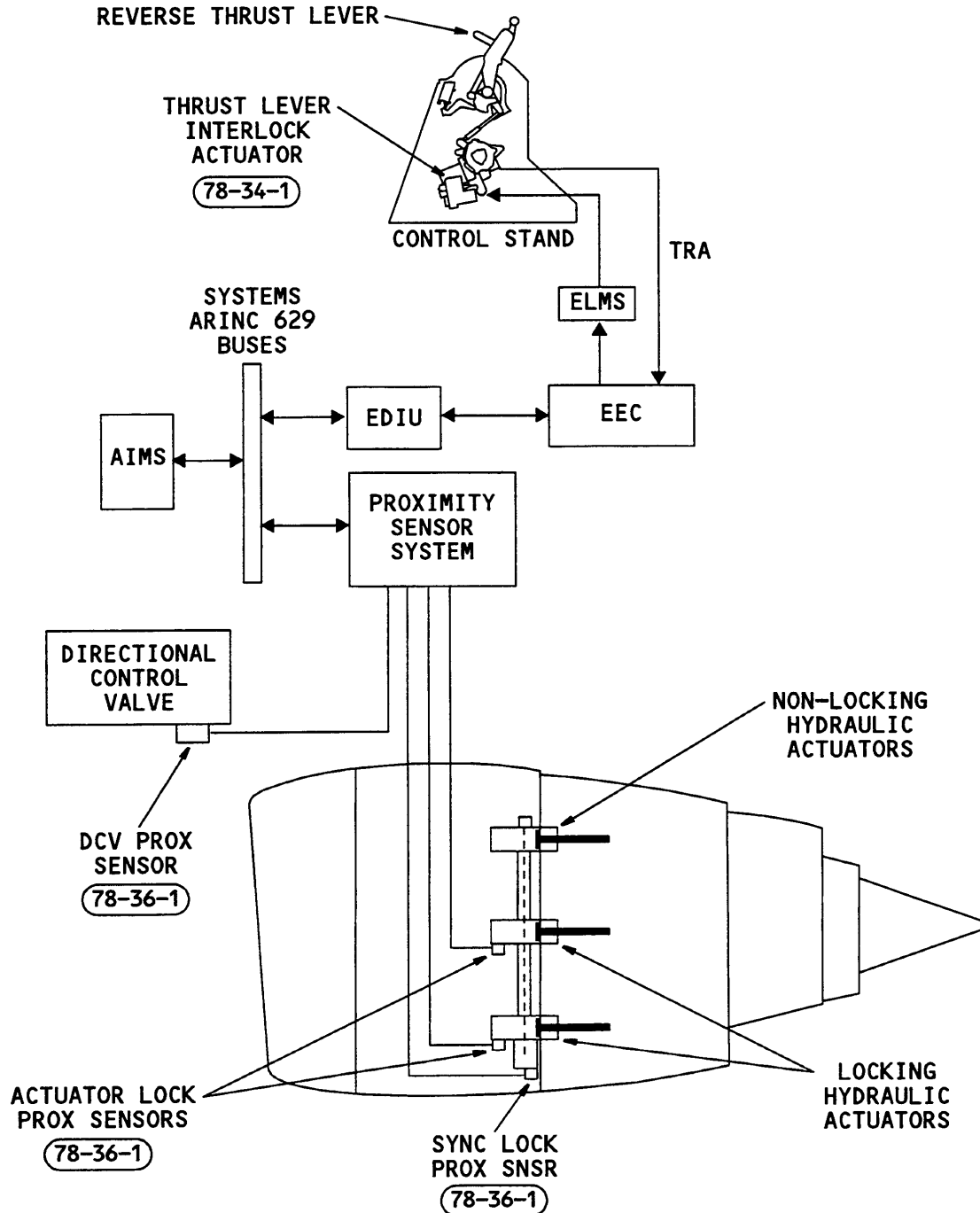
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ATA 78 Contents

78-31-01A	Thrust Reversers.....	78-3
78-34-01A	Reverse Thrust Lever Interlocks (-200ER)	78-7
78-36-01	Reverser Proximity Sensors.....	78-9

THRUST REVERSER SYSTEM

(78-31-1)



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
78-31-01A	Thrust Reversers (-200ER) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative provided: a) Both sync locks are verified in the locked position, b) One locking actuator on each sleeve is verified in the locked position, and c) Inoperative reverser is secured in the forward thrust position.
78-31-01B	Thrust Reversers (-200LR) "DISP.APPR.REQ'D."	N	2	1	C (O)(M) May be inoperative provided: a) Both sync locks are verified in the locked position, b) One locking actuator on each sleeve is verified in the locked position, c) Inoperative reverser is secured in the forward thrust position, and d) Appropriate performance adjustments are applied.

MEL ITEM	TAB LOCATION	PLACARD TEXT
78-31-01A	Above EICAS Display	___ Engine Thrust Reverser INOP
78-31-01B	Above EICAS Display	___ Engine Thrust Reverser INOP

(O) PROCEDURES

78-31-01A

After engine start, the associated ENG REV LIMITED L or R advisory message will be displayed.

CONTINUED NEXT PAGE

78-31-01B

After engine start, the associated ENG REV LIMITED L or R advisory message will be displayed.

78-31-01B	THRUST REVERSERS
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	- Performance weight corrections have been applied. - For Wet and Contaminated runways, reduce the AWABS V_1 by 3 KIAS. If the resulting V_1 is less than minimum V_{mcg}, takeoff is permitted with V_1 set equal to V_{mcg}. See ODM – Abnormal Section for Minimum Control Speed – Ground (V_{mcg}). - For Dry runways, no V_1 speed correction is necessary.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – Wet and Contaminated Runways Reduce RATOW by 15,200 lbs. TAKEOFF – Dry Runways None LANDING None OTHER CORRECTIONS - For Wet and Contaminated runways, reduce the ODM – Takeoff section V_1 by 3 KIAS. If the resulting V_1 is less than minimum V_{mcg}, takeoff is permitted with V_1 set equal to V_{mcg}. See ODM – Abnormal Section for Minimum Control Speed – Ground (V_{mcg}). - For Dry runways, no V_1 speed correction is necessary.

(M) PROCEDURES

78-31-01A

For RR Engines (-200ER)  [Link to Learning Video – \(78-31-01A Thrust Reverser\)](#)

Deactivate and secure the inoperative reverser.

- For left engine reverser, pull and secure P110 panel L ENG T/R CTRL circuit breaker.
- For right engine reverser, pull and secure P210 panel R ENG T/R CTRL circuit breaker.
- Gain access to the associated reverser isolation valve (left forward access door - strut aft fairing).
- Deactivate the isolation valve for flight by following the DEACTIVATED MODE instructions placard.
- Close the associated left forward access door - strut aft fairing.
- Open the associated left and right fan cowl panels.
- Remove deactivation pins and install the pins in the left and right reverser sleeves.
- Pressurize the associated hydraulic system.
- Verify that the sync lock and at least one of the two locking actuators on each reverser sleeve has the manual unlock handle in the locked position.
- Depressurize the hydraulic system.

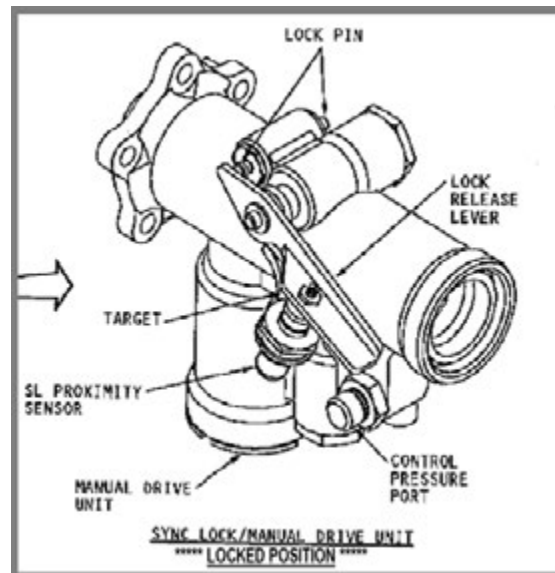
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11. Verify that associated engine thrust reverser left and right sleeve positions are within limits using the Electronic Propulsion Control System (EPCS) maintenance page 1/2.
 - a. If the associated engine thrust reverser left and right sleeve (T/RL and T/RR) positions for channels A and B are not within -5.0 to +5.0, deactivate the associated RVDT.

NOTE: A dual channel RVDT is installed on the non-locking (upper) hydraulic actuator of each sleeve, which results in four readouts per engine.
 - b. For deactivating the associated RVDT:

NOTE: Only one RVDT may be deactivated.

 - 1) Disconnect the electrical connector DM78002 for left sleeve or DM78003 for right sleeve from the RVDT.
 - 2) Cap the connector plug using conductive cap P/N MS27292-5.
 - 3) Stow the connector plug to adjacent structure using wire ties.
12. Close the associated left and right fan cowl panels.



78-31-01B

For GE Engines (-200LR)  [Link to Learning Video – \(78-31-01B Thrust Reverser\)](#)

Deactivate and secure the inoperative reverser.

1. For left engine reverser, pull and secure P110 panel L ENG T/R CTRL circuit breaker.
2. For right engine reverser, pull and secure P210 panel R ENG T/R CTRL circuit breaker.
3. Deactivate the leading edge slats in the retracted position.
4. Gain access to the associated reverser isolation valve (left forward access door - strut aft fairing).
5. Deactivate the isolation valve for flight by following the DEACTIVATED MODE instructions placard.
6. Close the associated left forward access door - strut aft fairing.
7. Open the associated left and right fan cowl panels.
8. Remove deactivation pins and install the pins in the left and right reverser sleeves.
9. Pressurize the associated hydraulic system.
10. Verify that the sync lock and at least one of the two locking actuators on each reverser sleeve has the manual unlock handle in the locked position.
11. Depressurize the hydraulic system.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 78 Engine Exhaust	R14 05/09/16 Page 78-6

12. Verify that associated engine thrust reverser left and right sleeve positions are within limits using the Electronic Propulsion Control System (EPCS) maintenance page 1/2.
 - a. If the associated engine thrust reverser left and right sleeve (T/RL and T/RR) positions for channels A and B are not within -7.0 to +7.0, deactivate the associated RVDT.

NOTE: A dual channel RVDT is installed on the non-locking (upper) hydraulic actuator of each sleeve, which results in four readouts per engine.
 - b. For deactivating the associated RVDT:

NOTE: Only one RVDT may be deactivated.

 - 1) Disconnect the electrical connector DM78002 for left sleeve or DM78003 for right sleeve from the RVDT.
 - 2) Cap the connector plug using conductive cap P/N MS27292-5.
 - 3) Stow the connector plug to adjacent structure using wire ties.
13. Close the associated left and right fan cowl panels.
14. Re-activate the leading edge slats.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
78-34-01A	Reverse Thrust Lever Interlocks (-200ER)	Y	2	1	C (O) One may be inoperative released or retracted.
78-34-01B	Reverse Thrust Lever Interlocks (-200LR)	Y	2	1	C (O) One may be inoperative released.
78-34-01C	Reverse Thrust Lever Interlocks (-200LR) "DISP.APPR.REQ'D."	Y	2	1	C (O) May be inoperative retracted provided appropriate performance adjustments are applied.

MEL ITEM	TAB LOCATION	PLACARD TEXT
78-34-01A	Center Display Control Panel	___ Engine Reverse Thrust Lever Interlock INOP
78-34-01B	Center Display Control Panel	___ Engine Reverse Thrust Lever Interlock INOP
78-34-01C	Center Display Control Panel	___ Engine Reverse Thrust Lever Interlock INOP

(O) PROCEDURES

78-34-01A

1. For interlock inoperative released, when using reverse thrust, pull the reverser levers up to the normal interlock position and apply reverse thrust as required when the operative interlock releases.
2. For interlock inoperative retracted, after engine start, the ENG REV LIMITED L or R advisory message may be displayed for the associated engine. When using reverse thrust, pull the reverse levers up to the normal interlock position and maintain idle reverse, unless asymmetric reverse thrust is required.

78-34-01B

When using reverse thrust, pull the reverser levers up to the normal interlock position and apply reverse thrust as required when the operative interlock releases.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 78 Engine Exhaust	R14 05/09/16 Page 78-8

78-34-01C

NOTE: After engine start, the ENG REV LIMITED L or R advisory message may be displayed for the associated engine.

1. When using reverse thrust, pull the reverse levers up to the normal interlock position and maintain idle reverse, unless asymmetric reverse thrust is required.
2. For a wet runway, apply the performance adjustments for one thrust reverser inoperative.

78-34-01C REVERSE THRUST LEVER INTERLOCKS	
EFFECTIVITY	-200LR
FLIGHT PLANNING REQUIREMENTS	None
NOTES	None
AWABS	1. Performance weight corrections have been applied. 2. For Wet and Contaminated runways, reduce the AWABS V_1 by 3 KIAS. If the resulting V_1 is less than minimum V_{mcg}, takeoff is permitted with V_1 set equal to V_{mcg}. See ODM – Abnormal Section for Minimum Control Speed – Ground (V_{mcg}). 3. For Dry runways, no V_1 speed correction is necessary.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF – Wet and Contaminated Runways Reduce RATOW by 15,200 lbs. TAKEOFF – Dry Runways None LANDING None OTHER CORRECTIONS 1. For Wet and Contaminated runways, reduce the ODM – Takeoff section V_1 by 3 KIAS. If the resulting V_1 is less than minimum V_{mcg}, takeoff is permitted with V_1 set equal to V_{mcg}. See ODM – Abnormal Section for Minimum Control Speed – Ground (V_{mcg}). 2. For Dry runways, no V_1 speed correction is necessary.

	B777 Minimum Equipment List	ATA 78 Engine Exhaust	R14 05/09/16 Page 78-9

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH			
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY			
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS	
78-36-01	Reverser Proximity Sensors	Y	14	12	C	One per engine may be inoperative.	

MEL ITEM	TAB LOCATION	PLACARD TEXT
78-36-01	Center Display Control Panel	___ Engine Reverser Proximity Sensor(s) INOP

 DELTA	B777 Minimum Equipment List	ATA 78 Engine Exhaust	R14 05/09/16 Page 78-10

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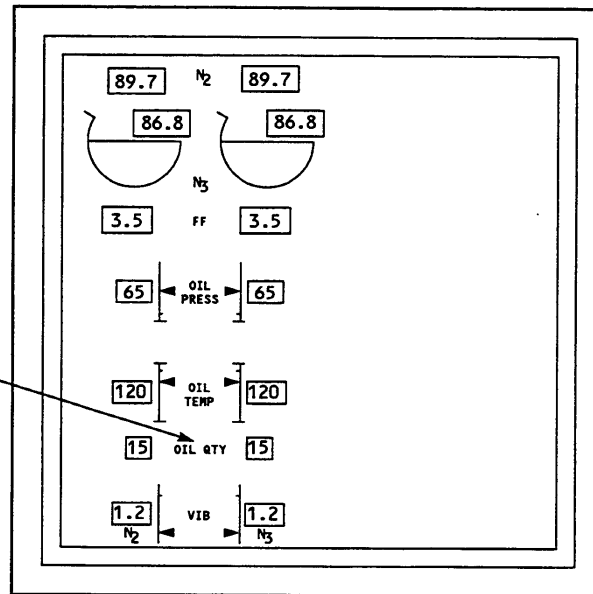
	B777 Minimum Equipment List	ATA 79 Engine Oil	R14 05/09/16 Page 79-1

ATA 79 Contents

79-21-01	Engine Air / Oil Heat Exchanger Valves (-200ER)	79-3
79-31-01	Engine Oil Quantity Indicating Systems	79-5
79-35-01A	Engine Oil Filter Bypass Warning Systems (-200ER)	79-6

MULTI-FUNCTION DISPLAY

ENGINE OIL
QUANTITY
INDICATING
SYSTEMS
(79-31-1)



ENGINE AIR/OIL HEAT
EXCHANGER VALVES
(RR)

(79-21-1)

ENG AIR/OIL VALVE L
ENG AIR/OIL VALVE R

ENGINE FUEL/OIL
COOLER BYPASS VALVES
(PW)

(79-21-2)

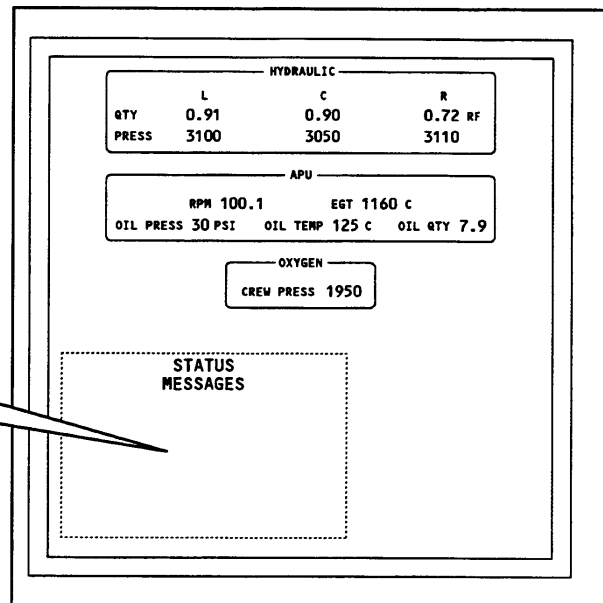
F/OIL VALVE CLOSED L
F/OIL VALVE CLOSED R

ENGINE OIL FILTER
BYPASS WARNING
SYSTEMS

(79-35-1)

ENG OIL FILT L
ENG OIL FILT R
ENG OIL FILT SNSR L
ENG OIL FILT SNSR R
ENG SCAV OIL FILT L
ENG SCAV OIL FILT R
ENG HP OIL FILT L
ENG HP OIL FILT R

MFD - EICAS STATUS PAGE



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
79-21-01	Engine Air / Oil Heat Exchanger Valves (-200ER) "DISP.APPR.REQ'D."	N	2	0	C (O)(M) May be inoperative provided: a) Associated valve is locked in the OPEN position, and b) Appropriate minimum fuel temperature is maintained during flight.

MEL ITEM	TAB LOCATION	PLACARD TEXT
79-21-01	Center Display Control Panel	___ Engine Air / Oil Heat Exchanger Valve(s) INOP

(O) PROCEDURES

Maintain fuel temperature above –37 degrees C during flight.

79-21-01	ENGINE AIR/OIL HEAT EXCHANGER VALVES
EFFECTIVITY	-200ER
FLIGHT PLANNING REQUIREMENTS	1. Increase BLOCK FUEL by 0.6% for both valves open. 2. For ETOPS operations, increase the ETP Engine Inoperative Critical Fuel Reserve by 0.6% for one or both valves inoperative.
NOTES	None
AWABS	Performance corrections have been applied.
TAKEOFF PERFORMANCE WORKSHEET	TAKEOFF None LANDING None

(M) PROCEDURES

Lock the inoperative air / oil heat exchanger valve(s) in the OPEN position.

- Gain access to the air / oil heat exchanger valve, which is located behind and below the engine oil tank, by opening the right fan cowl panel on the associated engine.
- Lock the air/oil heat exchanger valve in the open position:

For Lucas Air / Oil Heat Exchangers:

- Remove the cotter pin from the lockpin on the air/oil heat exchanger valve.
- Pull the lockpin out, remove the lockpin spacer and retain spacer for restoration:
 - Safety wire spacer to lockout pin lanyard in such a manner that it will not interfere with any engine components, controls, plumbing, wiring, etc.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 79 Engine Oil	R14 05/09/16 Page 79-4

- 2) Turn the manual turning device in the clockwise direction until valve is fully open and hold in this position until the lockpin has been installed (Use caution as the valve is heavily spring loaded).
- 3) Install the lockpin (without spacer) and release the manual turning device.
- 4) Install the cotter pin through the upper hole in the lockpin.
- 5) Verify that valve is locked by trying to turn the manual turning device in the counter-clockwise direction.

For Allied Signal Air / Oil Heat Exchangers:

- a. Loosen the manual lock detent bolt.
 - b. Turn the bolt until the arrows are aligned.
 - c. Push on manual lock to engage.
 - d. Tighten the manual lock detent bolt to 11-13 in-lbs.
3. Close the associated right fan cowl panel.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
79-31-01	Engine Oil Quantity Indicating Systems "Contact MCC"	N	2	1 A	(M) May be inoperative provided: a) It is verified PRIOR TO EACH DEPARTURE (Log Book Entry Required) that the oil tank is filled to the recommended capacity, b) Oil consumption is within limits, and c) Repairs are made within three flight days. Repetitive Check Required (Yellow Placard)

MEL ITEM	TAB LOCATION	PLACARD TEXT
79-31-01	Center Display Control Panel	___ Engine Oil Quantity Indicating System INOP

(M) PROCEDURES

NOTE: (-200LR only) Oil quantity indication is operating normally if switching the leads at the sensor restores the oil quantity indication.

- PRIOR TO EACH DEPARTURE** - Check engine oil level at the tank of the affected engine and service to capacity as required (ref. AMM 12-13-01 for servicing procedures and limitations).

NOTE: The AMM specifies time limits for oil servicing after engine shutdown. If it is necessary to run the engine prior to servicing, the flight crew may accomplish this task if qualified maintenance personnel are not available.

WARNING: WAIT A MINIMUM OF FIVE MINUTES AFTER ENGINE SHUTDOWN BEFORE REMOVING THE OIL TANK FILLER CAP TO ALLOW PRESSURE TO BLEED OFF. HOT OIL GUSHING FROM TANK MAY CAUSE SEVERE BURNS.

- Examine engine exterior and fan stream area for evidence of oil leakage.
- Contact MCC to ensure oil consumption of affected engine is within limits.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH		
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY		
ITEM NO.	NAME / DESCRIPTION					REMARKS OR EXCEPTIONS
79-35-01A	Engine Oil Filter Bypass Warning Systems (-200ER)	N	4	2	C	(M) One per engine 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 PRIOR TO EACH DEPARTURE (Log Book Entry Required). Repetitive Check Required (Yellow Placard)
79-35-01B	Engine Oil Filter Bypass Warning Systems (-200LR)	N	2	1	C	

MEL ITEM	TAB LOCATION	PLACARD TEXT
79-35-01A	Center Display Control Panel	___ Engine Oil Filter Bypass Warning System(s) INOP
79-35-01B	Center Display Control Panel	___ Engine Oil Filter Bypass Warning System(s) INOP

(M) PROCEDURES

79-35-01A

PRIOR TO EACH DEPARTURE - Verify that the malfunction is in the alerting system and inspect the master magnetic chip detector.

1. Verify that the malfunction is in the alerting system.
 - a. If MAT is available, verify a maintenance message is displayed for the associated engine as outlined below, indicating that the oil filter differential pressure switch is malfunctioning.

Scavenge filter -left engine: 79-84911
 Scavenge filter - right engine: 79-84912
 HP filter - left engine: 79-74411
 HP filter - right engine: 79-74412

If one of the messages above is displayed for the associated engine, proceed with this test, provided maintenance message 79-94861 (scavenge filter-left engine) or 79-94862 (scavenge filter-right engine) or 79-94361 (HP filter-left engine) or 79-94362 (HP filter-right engine) as applicable is not displayed. If one of the 79-94XXX messages as applicable is displayed, a plugged oil filter is possible and that problem must be resolved prior to dispatch with normal maintenance troubleshooting per the FIM.

- b. Open the left fan cowl panel and gain access to the associated engine Electronic Engine Control (EEC).

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 79 Engine Oil	R14 05/09/16 Page 79-7

- c. For the EICAS status message ENG SCAV OIL FILT L or ENG SCAV OIL FILT R displayed, do a continuity check of the scavenge oil filter differential pressure switch.
 - 1) Disconnect electrical terminal DM73003G from the EEC.
 - 2) Measure the resistance between pin 23 and pin 24 on electrical connector DM73003G.
 - 3) If the resistance is less than 100 ohms, the malfunction is in the alerting system.
 - 4) Measure the resistance between pin 24 and ground.
 - 5) If the resistance is less than 100 Kohms, the malfunction is in the alerting system.
 - 6) Connect the electrical connector DM73003G to the EEC (Ref. AMM 70-50-02/201).
 - d. For the EICAS status message ENG HP OIL FILT L or ENG HP OIL FILT R displayed, do a continuity check of the HP oil filter differential pressure switch.
 - 1) Disconnect electrical terminal DM73003A from the EEC.
 - 2) Measure the resistance between pin 23 and pin 24 on electrical connector DM73003A.
 - 3) If the resistance is less than 100 ohms, the malfunction is in the alerting system.
 - 4) Measure the resistance between pin 24 and the connector backshell.
 - 5) If the resistance is less than 100 Kohms, the malfunction is in the alerting system.
 - 6) Connect the electrical connector DM73003A to the EEC (Ref. AMM 70-50-02/201).
 - e. Close the associated left fan cowl panel.
2. **PRIOR TO EACH DEPARTURE** - Check the master magnetic chip detector for contamination. The master magnetic chip detector is located on the forward side of the scavenge oil filter and access is gained through the master chip detector panel located on the right fan cowl. (Ref. AMM 79-00-00/601 for contamination limits.)

 DELTA	B777 Minimum Equipment List	ATA 79 Engine Oil	R14 05/09/16 Page 79-8

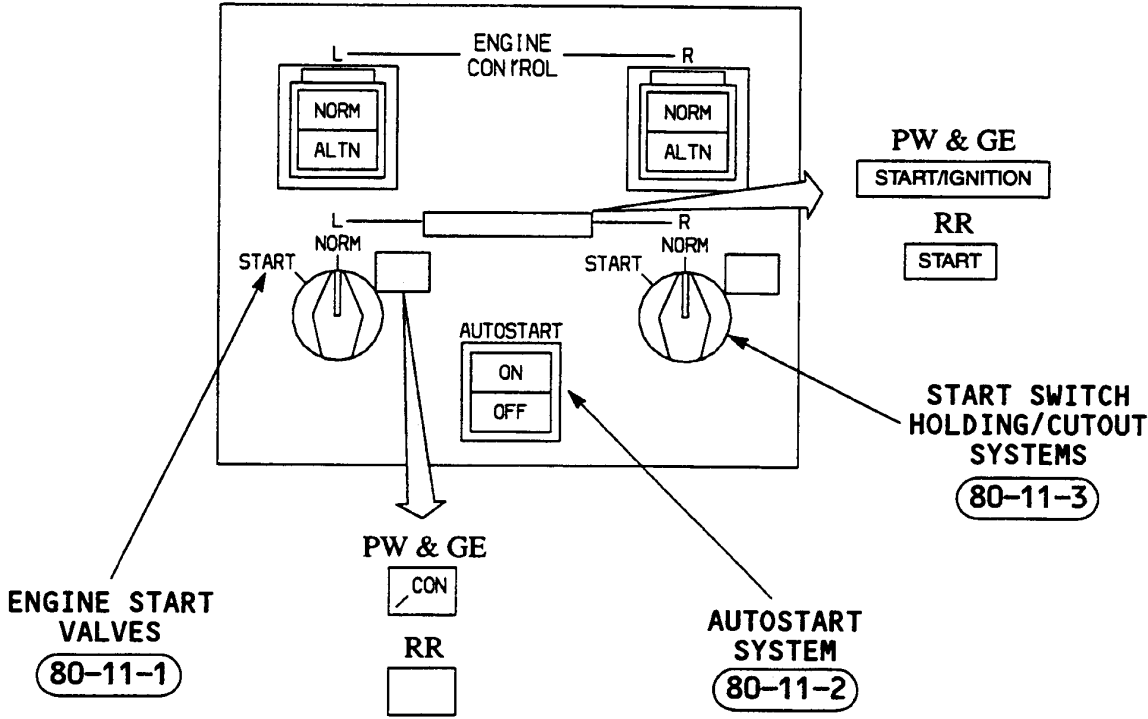
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	B777 Minimum Equipment List	ATA 80 Engine Starting	R14 05/09/16 Page 80-1

ATA 80 Contents

80-11-01	Engine Start Valves.....	80-3
80-11-02A	Autostart System.....	80-4
80-11-02B	Autostart Switch Position Indication.....	80-4
80-11-02C	AUTOSTART Switch Lights (OFF Light).....	80-4
80-11-02D	AUTOSTART Switch Lights (ON Light).....	80-4
80-11-03	Start Selector Holding / Cutout Systems.....	80-5

EEC AND START/IGNITION PANEL (P5)



NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
80-11-01	Engine Start Valves	N	2	1 C	(O)(M) May be inoperative closed provided alternate starting procedures are used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
80-11-01	Engine Start Panel	___ Engine Start Valve INOP CLOSED

(O) PROCEDURES

- For ground start of the associated engine:
 - Establish communications with ground crew.
 - Start the associated engine using Manual Override Engine Start procedure in the B777 Operations Manual Supplementary Normal Procedures (Vol. 1).
- If an inflight start becomes necessary, a crossbleed air assisted start will not be available. Use indications on EICAS to perform a windmilling start.

(M) PROCEDURES

For -200ER:

Manually open and close the engine start valve as directed by the flight crew.

- Gain access to the manual override start port located on the left fan cowl panel.
NOTE: Make sure a manual start square drive is available.
- Establish communications with the flight crew.

WARNING: EXERCISE EXTREME CAUTION WHEN MANUALLY STARTING ENGINE.

- Upon command from the flight crew, insert the manual start square drive in the manual override start port and turn the valve to the open position and hold.
- Upon command from the flight crew, close the starter air valve.
- When the manual override start is complete, remove the manual override square drive from the manual override start port.

For -200LR:

Manually open and close the engine start valve as directed by the flight crew.

- Gain access to the starter air valve manual control handle by opening associated engine center thrust reverser latch access panel (415JB for left engine or 425JB right engine).
- Unstow the starter air valve manual control handle.
- Establish communications with the flight crew.

WARNING: EXERCISE EXTREME CAUTION WHEN MANUALLY STARTING ENGINE.

- Upon command from the flight crew, engage the starter air valve manual control handle, turn the starter air valve to the open position (clockwise - one and one-quarter turns) and hold.
- Upon command from the flight crew, close the starter air valve.
- When the manual override start is complete, stow the starter air valve manual control handle and close the center thrust reverser latch access panel.

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
80-11-02A	Autostart System	Y	1	0	C (O) May be inoperative provided manual start procedures are used.
80-11-02B	Autostart Switch Position Indication	Y	1	0	C May be inoperative provided engine autostart switch is selected ON.
80-11-02C	AUTOSTART Switch Lights (OFF Light)	Y	1	0	C
80-11-02D	AUTOSTART Switch Lights (ON Light)	Y	1	0	C

MEL ITEM	TAB LOCATION	PLACARD TEXT
80-11-02A	Engine Start Panel	Autostart System INOP
80-11-02B	Engine Start Panel	Autostart Switch Position Indication INOP
80-11-02C	Engine Start Panel	AUTOSTART Switch OFF Light INOP
80-11-02D	Engine Start Panel	AUTOSTART Switch ON Light INOP

(O) PROCEDURES

80-11-02A

- For autostart system inoperative, use manual engine starting procedures (Delta 777 Operations Manual (Vol. 1), Supplementary Procedures).
- After both engines are started, AUTOSTART switch remains OFF.

NOTE: When the AUTOSTART switch is selected OFF, the EICAS advisory message ENG AUTOSTART OFF is normally displayed. However, some system failures can result in the ENG AUTOSTART OFF advisory EICAS message not being displayed when the AUTOSTART switch is selected OFF. If the autostart system is known to be inoperative, leave the AUTOSTART switch OFF and dispatch per the autostart system provisions of this item. If the autostart system is otherwise operational, position the AUTOSTART switch to ON, consider the autostart system operative, and dispatch per the sub-item for switch position indications (80-11-02B).

NUMBER INSTALLED				NUMBER REQUIRED FOR DISPATCH	
FLIGHT CREW MAY PLACARD				REPAIR CATEGORY	
ITEM NO.	NAME / DESCRIPTION				REMARKS OR EXCEPTIONS
80-11-03	Start Selector Holding / Cutout Systems	Y	2	0	C (O) May be inoperative provided alternate start procedures are used.

MEL ITEM	TAB LOCATION	PLACARD TEXT
80-11-03	Engine Start Panel	___ Engine Start Selector Holding / Cutout System(s) INOP

MAINTENANCE NOTE:

Some failure modes of the start switch holding/cutout relay can result in the AIMS status message. If troubleshooting indicates this condition exists, the AIMS status message may be cleared by accomplishing the following procedure. For engine starting, the start switch must then be manually held in position as outlined in the (O) PROCEDURES for this item.

NOTE: Accomplishment of the following procedures is NOT required, except when the AIMS status message is displayed and troubleshooting indicates a problem with the start switch holding/cutout relay. If the following procedures are to be accomplished, Maintenance is Required and Flight Crew May **Not** Placard.

1. Remove power from both AIMS cabinets by opening the following P11 panel circuit breakers:

AIMS L-1	AIMS L-2	AIMS L-3	AIMS L-4
AIMS R-1	AIMS R-2	AIMS R-3	AIMS R-4

2. Remove the Cargo Fire/Engine Control Module (M80001) from the overhead (P5) panel without disconnecting the electrical connectors.
3. Disconnect only the electrical connector from the associated START/IGNITION switch:
Left Engine - DS80100 or Right Engine - DS80200.
4. Remove, cap and stow the following wire from the associated DS80100 or DS80200 connector:

-200ER:

	Left Engine - DS80100	Right Engine - DS80200
Wire #	W1051-0557-24	W1052-0557-24
Pin #	2	2

-200LR:

	Left Engine - DS80100	Right Engine - DS80200
Wire #	W1051-0557-24	W1052-0557-24
Pin #	7	7

5. Install the electrical connector on the associated START/IGNITION switch.
6. Install the Cargo Fire/Engine Control Module in the overhead (P5) panel (AMM 26-22-04/401).

NOTE: It is only necessary to do the installation test for the Engine Start panel. However, if any module electrical connectors were disconnected other than the START/IGNITION switch connector, then the associated installation test should be accomplished.

CONTINUED NEXT PAGE

	B777 Minimum Equipment List	ATA 80 Engine Starting	R14 05/09/16 Page 80-6

7. Restore power to the AIMS cabinets by closing the P11 panel circuit breakers opened in step 1.
8. Verify that the AIMS status message has cleared and no additional status messages associated with the Cargo Fire/Engine Control Module are displayed.
9. Make logbook entry stating Cargo Fire / Engine Control Module wiring has been reconfigured per MEL 80-11-03.

CAUTION: Dispatch with the "AIMS" status message displayed is only allowed under the conditions outlined in MEL item 31-41-01.

(O) PROCEDURES

For -200ER:

Start the associated engine(s) using normal engine start procedures with the flight crew manually holding and/or releasing the START selector.

1. Position START selector to START and hold if required.
2. Position START selector to NORM at 50% N3.

For -200LR:

Start the associated engine(s) using normal engine start procedures with the flight crew manually holding and/or releasing the START selector.

1. Position START selector to START and hold if required.
2. Position START selector to NORM at 62% N2.

Index

A

Actuator Pressure Sensors	27-12
ADF Systems	34-46
ADIRU Switch Lights (OFF Light)	34-13
ADIRU Switch Lights (ON Light)	34-13
ADP Auto Function.....	29-7
AED (Automatic External Defibrillator)	25-48
Aft Cargo Door (DOOR LATCHED) Light	52-19
Aft Cargo Door Hook / Latch System.....	52-17
Aft Cargo Door Lift System (Electric Mode).....	52-18
Aft Cargo Heat Valves.....	21-52
Aileron Power Control Units.....	27-21
Aileron Trim System.....	27-19
AIMS-II Cabinet Bus Faults.....	31-13
Air / Ground System - Weight on Wheels	32-6
Air Conditioning PACK Switch Lights (AUTO Lights)	21-60
Air Conditioning PACK Switch Lights (OFF Lights)	21-60
Air Conditioning Packs.....	21-60
Air Cycle Machines (ACM)	21-66
Air Data Inertial Reference Unit – ADIRU (ON BAT Light)	34-13
Air Data Inertial Reference Unit – ADIRU Faults	34-13
Air Supply and Cabin Pressure Controllers (ASCPC)	36-4
Air Synoptic Display	36-44
Airborne Printer	31-10
Airplane Condition Monitoring Function (ACMF)	31-12
Airspeed Indication.....	34-26
Alternate Antiskid Valves	32-23
Alternate Pitch Trim Position Switches	27-28
Altitude Alerting System	34-11
ALTN FLAPS ARM Switch ALTN Light.....	27-34
Angle of Attack Vane Systems.....	34-24
Anti-Collision Light Systems (BEACON Switch ON Light).....	33-21
Anti-Collision Light Systems (Red Strobes/ White Strobes)	33-21
Antiskid Wheelspeed Transducers	32-22
Approach Mode	34-26
APU Air Inlet Door Actuation System.....	49-7
APU Air Turbine Starter	49-13
APU Auto Discharge	26-27
APU Battery	24-19
APU Battery Charger	24-21
APU Bleed Air Check Valve	49-15
APU Bleed Air Shutoff System.....	36-40
APU Bleed Air System	49-14
APU Controller Faults	49-16
APU DC Fuel Pump	28-19
APU EGT Indication	49-19
APU FAULT Light.....	49-18
APU Fire Detection System	26-12
APU Fire Extinguisher System.....	26-26
APU Fuel Isolation Valve	28-21
APU Fuel Shutoff Valve	28-20
APU GEN Switch Lights (OFF Lights)	24-13
APU GEN Switch Lights (ON Lights)	24-13

APU Generator	24-13
APU Ground Control Panel.....	49-17
APU OIL PRESS Indication	49-22
APU Oil Quantity Indication	49-21
APU RPM Indication	49-20
APU Starting System	49-11
ARINC Signal Gateway (ASG) Cards	31-4
ARM Switch ARMED Light.....	28-23
ARM Switch FAULT Light	28-23
ATC Transponder / Automatic Altitude Reporting Functions	34-44
Attitude Indication	34-26
Audio Control Panels	23-33
Aural Warning Speaker Systems	31-16
Auto Cabin Pressure Controls (L / R)	21-35
Autobrake System (Including Autobrake Solenoid Valve)	32-24
Automatic Dependent Surveillance – Contract (ADS-C) Function	23-12
Automatic Speedbrake Function.....	27-39
AUTOSTART Switch Lights (OFF Light)	80-4
AUTOSTART Switch Lights (ON Light)	80-4
Autostart System.....	80-4
Auxiliary Power Unit (APU)	49-4

B

Backup Electrical Power System	24-16
Bank Angle Protection	27-7
BATTERY Switch Lights (OFF Light).....	24-23
BATTERY Switch Lights (ON Light)	24-23
Bleed Air Isolation System (Center).....	36-37
Bleed Air Isolation Systems (L / R)	36-33
Body Duct Leak Detector Loops	26-19
Brake Accumulator Pressure Indicator (Flight Deck).....	32-15
Brake Accumulator Pressure Indicator (Wheel Well).....	32-14
BRAKE SOURCE Light.....	32-16
Brake Status Lights (On Nose Gear)	32-26
Brake Temperature Monitor System (BTMS)	32-37
Bulk Cargo Door Counterbalance Mechanism	52-16
Bulk Cargo Heat Valves	21-55
Bulk Cargo Ventilation Fan	21-14
Bus Power Control Unit.....	24-25
BUS TIE Switch Lights (AUTO Lights).....	24-18
BUS TIE Switch Lights (ISLN Lights).....	24-18

C

CABIN / UTILITY Power Switch Lights (OFF Light)	24-7
CABIN / UTILITY Power Switch Lights (ON Light)	24-7
Cabin Altitude Indication	21-47
Cabin Area Control Panels (CACP)	23-20
Cabin Attendant Handset.....	23-25
Cabin Differential Pressure Indication	21-46
Cabin Interior Illumination	33-8
Cabin Keypad & Indicator Lights	52-26
Cabin Rate Of Climb Indication.....	21-45
Cabin Speakers	23-15
Cabin Temperature Control	21-85

Cabin Temperature Controllers (CTC).....	21-81
Cardfile Power Supplies.....	31-6
Cargo Compartment Fire Extinguisher Bottles	26-28
Cargo Compartment Fire Extinguisher Flow Valves (Forward or Aft).....	26-31
Cargo Compartment Lights	33-14
Cargo Compartment Lining	25-33
Cargo Compartment Smoke Detection Systems (Forward And Aft).....	26-14
Cargo Compartment Temperature Sensor, Aft	21-54
Cargo Compartment Temperature Sensor, Bulk	21-57
Cargo Heat Valve	21-21
Cargo Loading Systems.....	25-34
Cargo Restraint Systems	25-35
Cargo Squib Test System	26-24
Center Hydraulic Isolation System	29-19
Center Hydraulic System Demand Air Driven Pumps (ADP).....	29-7
Center Hydraulic System Primary AC Motor Pumps (ACMP)	29-6
Center Tank Fuel Override / Jettison Pumps.....	28-12
Chiller Boost Fan (Passenger).....	21-13
Class 3 Crew Rest Seat	25-17
Clock Switches	31-8
Clocks.....	31-7
Cockpit Voice Recorder (CVR) System	23-36
Compressor Discharge Temperature Sensors	21-72
Condenser Inlet Temperature Control Systems	21-78
Control Column Position Transducers	27-25
Control Display Units (CDU) (Passenger).....	34-51
Control Wheel Pitch Trim Switches.....	27-27
Control Wheel Position Transducers	27-20
Core Compartment Cooling Valves	75-2
Crew Oxygen Pressure Indication System	35-3
Crew Oxygen Solenoid Bleed Valve	35-3
Crew Rest Seats	25-17
CROSSFEED Switch VALVE Lights.....	28-14
Cursor Control Devices (CCD).....	31-20
Cursor Control Devices (Cursor Location Lights)	31-20
Cursor Control Devices (Cursor Location Switch Lights).....	31-20

D

Data Communication Management System	23-12
Defuel Valve.....	28-22
Display Select Panel (DSP)	31-22
Display Select Panel (Illuminated Switch Lights)	31-22
Display Select Panel (Multifunction Display Lights)	31-22
Display Units (DU).....	31-19
Distance Measuring Equipment (DME).....	34-45
Door Indication Systems	52-30
Doors Synoptic Display	52-5
Drain Mast Heaters	30-26
DRIVE DISC Switch Drive Lights	24-9

E

E/E Cooling Smoke Detector Channels	26-22
Economy Cooling Valves (ECV)	21-69
ECS Miscellaneous Cards (ECSMC).....	21-8

EEC C1 Faults	73-9
EFIS Control Panels	31-27
EFIS Control Panels (Map Switch Lights).....	31-27
EICAS Status Messages.....	31-23
Electrical Load Management System (ELMS)	24-8
Electrical Synoptic Display.....	24-5
Electronic Checklist (ECL) System	31-26
Electronic Engine Controls (EEC) NORM / ALTN Mode Lights.....	73-8
Electronic Engine Controls (EEC) Normal Mode	73-6
Emergency Evacuation Signal System.....	25-43
Emergency Floor Proximity Lighting Systems	33-25
Emergency Locator Transmitter (ELT)	25-45
Engine Air / Oil Heat Exchanger Valves	79-3
Engine Anti-Ice Indications (EAI)	30-14
Engine Anti-Ice Systems.....	30-8
Engine Driven Generator Systems (IDG, GCB).....	24-9
Engine Driven Hydraulic Pumps (EDP) Depress. Function.....	29-5
Engine Fancase Overheat Detection System.....	26-21
Engine Fire Detector Loops	26-6
Engine Fuel Filter Bypass Warning Systems.....	73-14
Engine Fuel Shutoff Valve Indication Systems	73-11
Engine Idle Selection Systems	73-5
Engine Oil Filter Bypass Warning Systems	79-6
Engine Oil Quantity Indicating Systems.....	79-5
Engine Overheat Circuits	26-7
Engine Pressure Ratio (EPR) Indicating Systems.....	77-4
Engine PT2/TT2 Probe Heaters.....	30-20
Engine Start Valves	80-3
Engine Thrust Control Malfunction Accommodation (TCMA) Functions	73-12
Engine Turbine Overheat Sensors	77-6
Engine Vibration Monitor Systems.....	77-7
Enhanced Emergency Medical Kit (EEMK)	25-48
Equipment Cooling Air Filter	21-15
Equipment Cooling Controllers	21-23
Equipment Cooling Duct Pressure Sensors	21-27
Equipment Cooling Low Flow Sensors	21-18
Equipment Cooling Override Valve Motors.....	21-17
Equipment Cooling Supply Fans.....	21-16
Equipment Cooling Vent Fan	21-19
Equipment Cooling Vent Valve	21-20
Excess Flight Attendant Seats	25-10
Exterior Cargo Loading Area Lights.....	33-13
Exterior Emergency Slide Lights.....	33-24
External Power Systems.....	24-24

F

Fan Air Modulation Valves (FAMV)	36-30
Fasten Seat Belt While Seated Placards.....	25-44
Fire BTL DISCH Lights (Engine, APU, Cargo)	26-23
Fire Extinguishing Squib Test System	26-24
First Aid Kit Seals.....	25-48
First Aid Kits	25-48
Fixed Emergency Locator Transmitter (ELT).....	23-11
Flap / Slat Control Lanes	27-16
Flap / Slat Skew Sensors.....	27-35
Flap Secondary Control	27-17

Flaperon Power Control Units	27-22
Flight Attendant Call Chime	23-24
Flight Attendant Call Light System	23-24
Flight Attendant Flashlight / Holder	25-47
Flight Attendant Rest (OFAR)	25-27
Flight Attendant Rest Area Handsets	23-26
Flight Compartment and Instrument Lighting System	33-5
Flight Compartment and Instrument Lighting System (STORM Switch ON Light)	33-5
Flight Control Hydraulic Shutoff Valve Systems	27-13
Flight Controls Synoptic Display	27-6
Flight Crew Rest (OFCR)	25-25
Flight Crew Rest Area Handsets	23-25
Flight Crew Seats	25-4
Flight Data Recorder (FDR) System	31-9
Flight Deck Access System (Keypad, Door Chime)	52-20
Flight Deck Aft (No. 3) Window Heater Systems	30-23
Flight Deck Call System	23-24
Flight Deck Communications System (ACARS Datalink)	23-14
Flight Deck Foot Heaters	21-58
Flight Deck Forward Window Primary Heater Systems	30-21
Flight Deck Hand Microphones	23-31
Flight Deck Handset	23-25
Flight Deck Headset / Headphones	23-32
Flight Deck Security Door Automatic Locking System	52-20
Flight Deck Security Door Dead Bolt	52-24
Flight Deck Security Door Mechanical Latch Pin Lock	52-29
Flight Deck Shoulder Heaters	21-59
Flight Deck Side (No. 2) Window Heater Systems	30-22
Flight Deck Speakers	23-30
Flight Deck Window Indication Systems	56-2
Flight Management Computing Systems (FMCS)	34-48
Flotation Equipment (Spare Life Vests)	25-7
FMC Selector	34-50
FMS Navigation Databases	34-48
Forward Cargo Door (DOOR LATCHED) Light	52-15
Forward Cargo Door Hook / Latch System (Electric Mode)	52-13
Forward Cargo Door Lift System (Electric Mode)	52-14
Forward Cargo Heat Valve	21-21
Fuel Crossfeed Valves	28-14
Fuel Flow Indications	73-13
Fuel Jettison Nozzle Valves	28-30
Fuel Jettison System	28-23
Fuel Measuring Sticks	28-40
Fuel Quantity Indications (Flight Deck)	28-34
Fuel Quantity Processor Input / Output (I/O) Channels	28-37
Fuel Scavenge Jet Pumps	28-15
Fuel Scavenge Shutoff Valves	28-17
Fuel Shutoff Valve Battery	28-16
Fuel Synoptic Display	28-33

G

Galley/Cabin Waste Receptacles Access Doors / Covers	25-30
Gasper Fan (Passenger)	21-9
GASPER Switch ON Light	21-9
Gear Retraction Braking System	32-27
GEN CTRL Switch Lights (OFF Lights)	24-9

GEN CTRL Switch Lights (ON Lights)	24-9
Glideslope Antenna Switching	34-31
Global Positioning Systems (GPS)	34-47
Ground Crew Call System	23-28
Ground Handling Relay.....	24-14
Ground Handling Transformer Rectifier Unit	24-26
Ground Ldg Gear Door Release Control System	32-13
Ground Proximity Warning System (GPWS)	34-39

H

Heading Display.....	34-26
Heading Reference Switch (TRUE Function)	31-29
Heading Reference Switch Lights (NORM Light)	31-29
Heading Reference Switch Lights (TRUE Light).....	31-29
Headset Boom Microphones.....	23-32
HF Communication Systems	23-4
High Pressure Shutoff Valves (HPSOV).....	36-15
Hydraulic Demand Pump Selectors.....	29-16
Hydraulic Fluid Quantity Indications (Flight Deck)	29-32
Hydraulic Interface Module (HYDIM) Cards	29-17
Hydraulic Pump Lights (FAULT Lights)	29-24
Hydraulic Pump Lights (ON Lights)	29-24
Hydraulic Pump Pressure Indication Systems.....	29-27
Hydraulic Pump Temperature Indications.....	29-30
Hydraulic Reservoir Quantity Gage (Remote)	29-20
Hydraulic Synoptic Display	29-25
Hydraulic System Accumulators	29-21
Hydraulic System Pressure Transducers	29-26

I

Ice Detectors	30-27
IDG.....	24-9
IDG Oil Pressure Indication Systems	24-12
IFE / PASS Seats Power Switch Lights (Passenger) (OFF Light).....	24-6
IFE / PASS Seats Power Switch Lights (Passenger) (ON Light).....	24-6
Ignition Systems.....	74-2
Inboard Display Selector Positions	31-24
Inboard Flap, Outboard Support Mechanism Springs	27-33
Infant Life Vests	25-7
In-flight Entertainment System (IFES) Equipment Cooling Fan	21-25
In-flight Entertainment System (IFES) Equipment Cooling Smoke Detector.....	21-26
Instrument Landing System (ILS)	34-30
Instrument Source Switches	31-28
Integral Tire Pressure Indicators (Wheel Mounted)	32-35
Interior Emergency Lights	33-23
Intermediate Pressure Check Valves (IPCV).....	36-23
Intermediate Pressure Sensing Systems.....	36-46
Isolation Valve (Center)	36-37

L

Landing Gear Alternate Extend Hydraulic Pressure Switch	32-12
Landing Gear Door Position Sensors	32-45
Landing Gear Lever Lock Solenoid	32-8

Landing Gear Selector Valve Electrical Control Circuits.....	32-9
Landing Gear Synoptic Display.....	32-3
Landing Gear Uplock Position Sensors	32-46
Landing Lights	33-17
Lavatory / Galley Ventilation Fans	21-12
Lavatory Door Ashtrays (Exterior).....	25-31
Lavatory Fire Extinguisher Systems	26-33
Lavatory Smoke Detection Systems	26-8
Lavatory Speakers	23-15
Lavatory Waste Container Flapper / Access Doors	25-32
Lavatory Waste Systems	38-4
LLM Category II/III Status	34-6
Localizer Antenna Switching	34-32
LOGO Lights	33-22
LOGO Lights (LOGO Switch ON Light)	33-22
Long Range Communication System	23-3

M

Mach Indications	34-9
Magnetic Compass	34-28
Main Entry Doors or Slides / Rafts	52-7
Main Equipment Center Flight Interphone Jacks	23-29
Main Gear Door Uplock Spring Assemblies.....	32-10
Main Gear Steering System.....	32-39
Main Gear Uplock Springs	32-11
Main Tank Fuel Pumps	28-11
Main Tank Fuel Pumps (PUMPS Switch ON Light)	28-11
Main Tank Fuel Pumps (PUMPS Switch PRESS Lights)	28-11
Main Tanks Jettison Pumps.....	28-28
Manifold Pressure / Flow Sensing Systems.....	36-45
Manifold Temperature Sensing Systems	36-47
Manual Cabin Pressure Outflow Valve Controls	21-38
Marker Beacon System.....	34-33
Master Brightness Control.....	33-6
Master Caution Lights (Glareshield)	31-15
Master Dim and Test System.....	33-7
Master Warning Lights (Glareshield)	31-14
Medical Accessory Pouch	25-48
Megaphones (Passenger).....	25-46
Microphone switches.....	23-34
Multi Latch / Quarter Turn Lug Installations	25-20

N

N2 Tachometer Systems.....	77-5
Nitrogen Generation System.....	47-2
No Smoking / Fasten Seat Belt / Return To Seat Signs	33-9
Non-Stabilized Magnetic Compass (Standby)	34-28
Normal Antiskid Valves	32-19
Nose Gear Flight Interphone Jack	23-29
Nose Gear Not-Compressed Sensors	32-43
Nose Gear Pressure Switch.....	27-32
Nose Gear Spin Brakes	32-36

O

Observer Seats (Including Associated Equipment)	25-5
OFAR Door	25-23
OFCR	25-25
OFCR / OFAR Call Chime	23-24
OFCR / OFAR Oxygen Modules Seats / Bunks	35-9
OFCR Door	25-23
OFCR Heaters	21-50
Outflow Valve Position Indications	21-48
Outflow Valves	21-41
Overhead Flight Crew / Attendant Rest (OFCR / OFAR) Smoke Detection Systems	26-9
Overhead Flight Crew Rest (OFCR) Pressure Sensor	21-34
Overhead Flight Crew Rest Exhaust Valves	21-30
Overhead Flight Crew Rest Shutoff Valves	21-28
Overhead Flight Crew Rest Supply Shutoff valves	21-32
Overhead Panel Bus Controllers (OPBC)	23-37
Overhead Panel Interface Cards (OPIC)	23-40
Ozone Converters	21-90

P

Pack Discharge Temperature Sensors	21-73
Pack Flow Control / Shutoff Valves (FCVs)	21-64
Panel Data Concentrator Units (PDCU)	23-41
Parking Brake Set Indication System (Flight Deck)	32-28
Passenger Address Controller	23-15
Passenger Address System	23-15
Passenger Entry Door Flight Lock Systems	52-12
Passenger Entry Door Hold-Open Mechanisms	52-10
Passenger Entry Door Hold-Open Release Handles	52-11
Passenger Entry Door Status Lights	52-31
Passenger Entry Doors or Slides / Rafts	52-6
Passenger Entry Doors Pressure Stop Assemblies	52-9
Passenger Notice System (No Smoking / Fasten Seat Belt / Return To Seat Signs)	33-9
Passenger Oxygen Automatic Presentation System	35-7
Passenger Oxygen ON Light	35-8
Passenger Oxygen Service Units	35-6
Passenger Oxygen System	35-5
Passenger Seats	25-11
PED Mount	25-50
PFCS Interface	27-11
Pitot Air Data Modules (Primary - ARINC 629)	34-15
Pitot Probe Heater Systems	30-15
Portable Fire Extinguishers	26-34
Portable Oxygen Dispensing Units	35-10
Position Lights	33-19
Position Lights (NAV Switch ON Light)	33-19
Positive Pressure Relief Valves	21-49
Potable Water Systems	38-2
Precoolers	36-28
Predictive Windshear Function	34-36
Prerecorded Passenger Announcement System	23-16
Pre-recorded Passenger Announcement System	23-18
Pressure Fueling System	28-7, 28-8
Pressure Rate-Of-Change Sensing Module	52-21

Pressure Regulating and Shutoff Systems (PRSOV, PRSOVC)	36-9
Primary Flight Computer (PFC) Channels	27-9
Primary Flight Computer (PFC) Lanes	27-8
Primary Flight Computer DISC Light	27-14
Protective Breathing Equipment (PBE) Seals	35-13
Proximity Sensor Electronic Unit (PSEU) Channels	32-4

Q

Quick Access Recorder	31-11

R

Radio Altimeter Systems	34-34
Radio Tuning Panels	23-10
Ram Air Exhaust Door Systems	21-76
Ram Air Inlet Door Systems	21-74
RAM AIR TURBINE Switch Light (PRESS Light)	29-23
RAM AIR TURBINE Switch Light (UNLKD Light)	29-23
RAT Heater System	29-22
Reactive Windshear Alert Mode	34-40
RECIRC FANS Switch ON Lights	21-10
Recirculation Fans	21-10
Remote Cabin Pressure Sensor	21-44
Remote Light Sensor (RLS) System	31-21
Reverse Thrust Levers Interlocks	78-7
RNP-10 Status	34-8
RNP-4 Status	34-7
Rudder Trim Indicator	27-24
Rudder Trim System	27-23
Runway Turnoff Lights	33-18
RVSM Status	53-2

S

SATCOM Backup Cooling Fans	21-24
Satellite Communication (SATCOM) Systems	23-7
Secondary Attitude Air Data Reference Unit (SAARU)	34-25
Selective Call System (SELCAL)	23-9
Service Interphone System (Nose Gear Jack)	23-21
Slat Secondary Control	27-18
Speedbrake Lever Position Transducers	27-36
Spoiler Power Control Units	27-37
STAB Position Indicators	27-30
Stabilizer Position Transducer Modules	27-31
Stabilizer Trim Rate Solenoid Valves	27-29
Stall Warning Systems	27-26
Standby Attitude Indicator	34-29
Start Selector Holding / Cutout Systems	80-5
Static Air Data Modules (Primary - ARINC 629)	34-20
Static Air Temperature (SAT) Indication	34-12
Stick Shakers	27-26
Storage Bin(s) / Cabin, Galley and Lavatory Storage Compartments / Closets	25-20
Strut Overheat Detector Loops	26-20
Sump Drain Valves	28-6
Switch Lights	34-26

Switch ON Lights	28-30
Switch VALVE Lights	28-30
Systems Cardfile ARINC Signal Gateway (ASG) Cards	31-4

T

Tail Position Lights	33-20
Tail Strike Detector Channels	32-47
Taxi Lights	33-16
Terrain Awareness Function (EGPWS / Enhanced)	34-41
Thrust Asymmetry Compensation (TAC) Function	27-15
Thrust Reverser Proximity Sensors	78-9
Thrust Reversers	78-3
Tire Pressure Indication System (TPIS)	32-38
Total Air Temperature (TAT) Probe Heaters	30-19
Total Fuel Quantity Indication	28-38
Traffic Collision and Avoidance System (TCAS)	34-38
Trim Air Control Systems	21-86
Trim Air Pressure Regulating / Shutoff Valves (PRSOVs)	21-87
TRIM AIR Switch Lights (FAULT Lights)	21-89
TRIM AIR Switch Lights (ON Lights)	21-89
Truck Tilt Sensors	32-43
True Airspeed Indications	34-10
Turbine Case Cooling Flow LPT Systems	75-3
Turbine Overspeed Systems	73-10

V

VHF Communications Systems	23-6
VHF Data Link	23-6
VOR Navigation Systems	34-43

W

Warning Electronic System (WES) Autopilot Disconnect Warning Function	31-18
Warning Electronics System (WES) Channels	31-17
Weather Radar Systems	34-35
WES Autopilot Interfaces	31-18
Wheel Brakes	32-30
Wheel Tie Bolts	32-34
Wheel Well Fire Detection System	26-16
Window Heat	30-21
WINDOW HEAT Switch Lights (INOP Lights)	30-24
WINDOW HEAT Switch Lights (ON Lights)	30-24
Windshield Wipers	30-25
Wing Anti-Ice Control (Card and Switch)	30-6
Wing Anti-Ice Indications (WAI)	30-7
Wing Anti-Ice Systems	30-5
Wing Duct Leak Detector Loops	26-18
Wing Illumination Lights	33-15
Wing Illumination Lights (WING Switch ON Light)	33-15

Z

Zone Temperature Control Systems	21-83

Revision 14 complies with FAA B777 MMEL Revision 21.

FAA-APPROVED

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EFFECTIVE DATE: 05/09/2016

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 Principal Operations Inspector

Page	Date	Page	Date	Page	Date	Page	Date
FRONT MATTER		21-8	05/09/16	21-51	05/09/16	ATA 22	
FM-1	05/09/16	21-9	05/09/16	21-52	05/09/16	22-1	08/29/14
FM-2	05/09/16	21-10	05/09/16	21-53	05/09/16	22-2	07/07/11
FM-3	05/09/16	21-11	05/09/16	21-54	05/09/16	22-3	07/07/11
FM-4	05/09/16	21-12	05/09/16	21-55	05/09/16	22-4	07/07/11
FM-5	05/09/16	21-13	05/09/16	21-56	05/09/16	22-5	07/07/11
FM-6	05/09/16	21-14	05/09/16	21-57	05/09/16	22-6	08/29/14
FM-7	05/09/16	21-15	05/09/16	21-58	05/09/16	22-7	07/07/11
FM-8	05/09/16	21-16	05/09/16	21-59	05/09/16	22-8	08/29/14
FM-9	05/09/16	21-17	05/09/16	21-60	05/09/16	22-9	07/07/11
FM-10	05/09/16	21-18	05/09/16	21-61	05/09/16	22-10	08/29/14
FM-11	05/09/16	21-19	05/09/16	21-62	05/09/16	22-11	07/07/11
FM-12	05/09/16	21-20	05/09/16	21-63	05/09/16	22-12	08/29/14
FM-13	05/09/16	21-21	05/09/16	21-64	05/09/16	22-13	08/29/14
FM-14	05/09/16	21-22	05/09/16	21-65	05/09/16	22-14	08/29/14
FM-15	05/09/16	21-23	05/09/16	21-66	05/09/16	22-15	08/29/14
FM-16	05/09/16	21-24	05/09/16	21-67	05/09/16	22-16	08/29/14
FM-17	05/09/16	21-25	05/09/16	21-68	05/09/16	22-17	08/29/14
FM-18	05/09/16	21-26	05/09/16	21-69	05/09/16	22-18	08/29/14
FM-19	05/09/16	21-27	05/09/16	21-70	05/09/16	22-19	08/29/14
FM-20	05/09/16	21-28	05/09/16	21-71	05/09/16	22-20	08/29/14
FM-21	05/09/16	21-29	05/09/16	21-72	05/09/16	22-21	08/29/14
FM-22	05/09/16	21-30	05/09/16	21-73	05/09/16	22-22	08/29/14
FM-23	05/09/16	21-31	05/09/16	21-74	05/09/16	22-23	08/29/14
FM-24	05/09/16	21-32	05/09/16	21-75	05/09/16	22-24	08/29/14
ATA 05		21-33	05/09/16	21-76	05/09/16	22-25	08/29/14
05-1	03/08/10	21-34	05/09/16	21-77	05/09/16	22-26	08/29/14
05-2	08/29/14	21-35	05/09/16	21-78	05/09/16	22-27	08/29/14
05-3	08/29/14	21-36	05/09/16	21-79	05/09/16	22-28	08/29/14
05-4	08/29/14	21-37	05/09/16	21-80	05/09/16	ATA 23	
ATA 11		21-38	05/09/16	21-81	05/09/16	23-1	05/09/16
11-1	08/29/14	21-39	05/09/16	21-82	05/09/16	23-2	05/09/16
11-2	08/29/14	21-40	05/09/16	21-83	05/09/16	23-3	05/09/16
ATA 21		21-41	05/09/16	21-84	05/09/16	23-4	05/09/16
21-1	05/09/16	21-42	05/09/16	21-85	05/09/16	23-5	05/09/16
21-2	05/09/16	21-43	05/09/16	21-86	05/09/16	23-6	05/09/16
21-3	05/09/16	21-44	05/09/16	21-87	05/09/16	23-7	05/09/16
21-4	05/09/16	21-45	05/09/16	21-88	05/09/16	23-8	05/09/16
21-5	05/09/16	21-46	05/09/16	21-89	05/09/16	23-9	05/09/16
21-6	05/09/16	21-47	05/09/16	21-90	05/09/16	23-10	05/09/16
21-7	05/09/16	21-48	05/09/16			23-11	05/09/16
		21-49	05/09/16			23-12	05/09/16
		21-50	05/09/16				

	B777 Minimum Equipment List	List of Effective Pages	R14 05/09/16 Page LP-2

Revision 14 complies with FAA B777 MMEL Revision 21.

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EFFECTIVE DATE: 05/09/2016



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Page	Date	Page	Date	Page	Date	Page	Date
23-13	05/09/16	24-13	05/09/16	25-29	05/09/16	26-21	05/09/16
23-14	05/09/16	24-14	05/09/16	25-30	05/09/16	26-22	05/09/16
23-15	05/09/16	24-15	05/09/16	25-31	05/09/16	26-23	05/09/16
23-16	05/09/16	24-16	05/09/16	25-32	05/09/16	26-24	05/09/16
23-17	05/09/16	24-17	05/09/16	25-33	05/09/16	26-25	05/09/16
23-18	05/09/16	24-18	05/09/16	25-34	05/09/16	26-26	05/09/16
23-19	05/09/16	24-19	05/09/16	25-35	05/09/16	26-27	05/09/16
23-20	05/09/16	24-20	05/09/16	25-36	05/09/16	26-28	05/09/16
23-21	05/09/16	24-21	05/09/16	25-37	05/09/16	26-29	05/09/16
23-22	05/09/16	24-22	05/09/16	25-38	05/09/16	26-30	05/09/16
23-23	05/09/16	24-23	05/09/16	25-39	05/09/16	26-31	05/09/16
23-24	05/09/16	24-24	05/09/16	25-40	05/09/16	26-32	05/09/16
23-25	05/09/16	24-25	05/09/16	25-41	05/09/16	26-33	05/09/16
23-26	05/09/16	24-26	05/09/16	25-42	05/09/16	26-34	05/09/16
23-27	05/09/16	ATA 25		25-43	05/09/16	ATA 27	
23-28	05/09/16	25-1	05/09/16	25-44	05/09/16	27-1	05/09/16
23-29	05/09/16	25-2	05/09/16	25-45	05/09/16	27-2	07/07/11
23-30	05/09/16	25-3	05/09/16	25-46	05/09/16	27-3	07/07/11
23-31	05/09/16	25-4	05/09/16	25-47	05/09/16	27-4	07/07/11
23-32	05/09/16	25-5	05/09/16	25-48	05/09/16	27-5	07/07/11
23-33	05/09/16	25-6	05/09/16	25-49	05/09/16	27-6	05/09/16
23-34	05/09/16	25-7	05/09/16	25-50	05/09/16	27-7	05/09/16
23-35	05/09/16	25-8	05/09/16	ATA 26		27-8	05/09/16
23-36	05/09/16	25-9	05/09/16	26-1	05/09/16	27-9	05/09/16
23-37	05/09/16	25-10	05/09/16	26-2	07/07/11	27-10	05/09/16
23-38	05/09/16	25-11	05/09/16	26-3	07/07/11	27-11	05/09/16
23-39	05/09/16	25-12	05/09/16	26-4	07/07/11	27-12	05/09/16
23-40	05/09/16	25-13	05/09/16	26-5	07/07/11	27-13	05/09/16
23-41	05/09/16	25-14	05/09/16	26-6	05/09/16	27-14	05/09/16
23-42	05/09/16	25-15	05/09/16	26-7	05/09/16	27-15	05/09/16
ATA 24		25-16	05/09/16	26-8	05/09/16	27-16	05/09/16
24-1	05/09/16	25-17	05/09/16	26-9	05/09/16	27-17	05/09/16
24-2	02/16/12	25-18	05/09/16	26-10	05/09/16	27-18	05/09/16
24-3	07/07/11	25-19	05/09/16	26-11	05/09/16	27-19	05/09/16
24-4	07/07/11	25-20	05/09/16	26-12	05/09/16	27-20	05/09/16
24-5	05/09/16	25-21	05/09/16	26-13	05/09/16	27-21	05/09/16
24-6	05/09/16	25-22	05/09/16	26-14	05/09/16	27-22	05/09/16
24-7	05/09/16	25-23	05/09/16	26-15	05/09/16	27-23	05/09/16
24-8	05/09/16	25-24	05/09/16	26-16	05/09/16	27-24	05/09/16
24-9	05/09/16	25-25	05/09/16	26-17	05/09/16	27-25	05/09/16
24-10	05/09/16	25-26	05/09/16	26-18	05/09/16	27-26	05/09/16
24-11	05/09/16	25-27	05/09/16	26-19	05/09/16	27-27	05/09/16
24-12	05/09/16	25-28	05/09/16	26-20	05/09/16	27-28	05/09/16

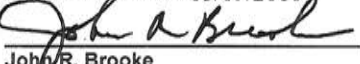
	B777 Minimum Equipment List	List of Effective Pages	R14 05/09/16 Page LP-3

Revision 14 complies with FAA B777 MMEL Revision 21.

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BY: FAA DELTA CMO-27

EFFECTIVE DATE: 05/09/2016


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Page	Date	Page	Date	Page	Date	Page	Date
27-29	05/09/16	28-31	05/09/16	29-33	05/09/16	31-11	05/09/16
27-30	05/09/16	28-32	05/09/16	29-34	05/09/16	31-12	05/09/16
27-31	05/09/16	28-33	05/09/16	ATA 30		31-13	05/09/16
27-32	05/09/16	28-34	05/09/16	30-1	05/09/16	31-14	05/09/16
27-33	05/09/16	28-35	05/09/16	30-2	07/07/11	31-15	05/09/16
27-34	05/09/16	28-36	05/09/16	30-3	07/07/11	31-16	05/09/16
27-35	05/09/16	28-37	05/09/16	30-4	07/07/11	31-17	05/09/16
27-36	05/09/16	28-38	05/09/16	30-5	05/09/16	31-18	05/09/16
27-37	05/09/16	28-39	05/09/16	30-6	05/09/16	31-19	05/09/16
27-38	05/09/16	28-40	05/09/16	30-7	05/09/16	31-20	05/09/16
27-39	05/09/16	ATA 29		30-8	05/09/16	31-21	05/09/16
27-40	05/09/16	29-1	05/09/16	30-9	05/09/16	31-22	05/09/16
ATA 28		29-2	07/07/11	30-10	05/09/16	31-23	05/09/16
28-1	05/09/16	29-3	07/07/11	30-11	05/09/16	31-24	05/09/16
28-2	10/24/13	29-4	07/07/11	30-12	05/09/16	31-25	05/09/16
28-3	07/07/11	29-5	05/09/16	30-13	05/09/16	31-26	05/09/16
28-4	07/07/11	29-6	05/09/16	30-14	05/09/16	31-27	05/09/16
28-5	07/07/11	29-7	10/18/12	30-15	05/09/16	31-28	05/09/16
28-6	05/09/16	29-8	05/09/16	30-16	05/09/16	31-29	05/09/16
28-7	05/09/16	29-9	10/18/12	30-17	05/09/16	31-30	05/09/16
28-8	05/09/16	29-10	10/18/12	30-18	05/09/16	ATA 32	
28-9	05/09/16	29-11	10/18/12	30-19	05/09/16	32-1	05/09/16
28-10	05/09/16	29-12	10/18/12	30-20	05/09/16	32-2	07/07/11
28-11	05/09/16	29-13	10/18/12	30-21	05/09/16	32-3	05/09/16
28-12	05/09/16	29-14	10/18/12	30-22	05/09/16	32-4	05/09/16
28-13	05/09/16	29-15	10/18/12	30-23	05/09/16	32-5	05/09/16
28-14	05/09/16	29-16	05/09/16	30-24	05/09/16	32-6	05/09/16
28-15	05/09/16	29-17	05/09/16	30-25	05/09/16	32-7	05/09/16
28-16	05/09/16	29-18	05/09/16	30-26	05/09/16	32-8	05/09/16
28-17	05/09/16	29-19	05/09/16	30-27	05/09/16	32-9	05/09/16
28-18	05/09/16	29-20	05/09/16	30-28	05/09/16	32-10	05/09/16
28-19	05/09/16	29-21	05/09/16	ATA 31		32-11	05/09/16
28-20	05/09/16	29-22	05/09/16	31-1	05/09/16	32-12	05/09/16
28-21	05/09/16	29-23	05/09/16	31-2	07/07/11	32-13	05/09/16
28-22	05/09/16	29-24	05/09/16	31-3	07/07/11	32-14	05/09/16
28-23	05/09/16	29-25	05/09/16	31-4	05/09/16	32-15	05/09/16
28-24	05/09/16	29-26	05/09/16	31-5	05/09/16	32-16	05/09/16
28-25	05/09/16	29-27	05/09/16	31-6	05/09/16	32-17	05/09/16
28-26	05/09/16	29-28	05/09/16	31-7	05/09/16	32-18	05/09/16
28-27	05/09/16	29-29	05/09/16	31-8	05/09/16	32-19	05/09/16
28-28	05/09/16	29-30	05/09/16	31-9	05/09/16	32-20	05/09/16
28-29	05/09/16	29-31	05/09/16	31-10	05/09/16	32-21	05/09/16
28-30	05/09/16	29-32	05/09/16			32-22	05/09/16

	B777 Minimum Equipment List	List of Effective Pages	R14 05/09/16 Page LP-4

Revision 14 complies with FAA B777 MMEL Revision 21.



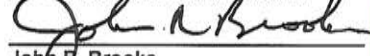
Page	Date	Page	Date	Page	Date	Page	Date
32-23	05/09/16	33-17	05/09/16	34-33	05/09/16	36-7	05/09/16
32-24	05/09/16	33-18	05/09/16	34-34	05/09/16	36-8	05/09/16
32-25	05/09/16	33-19	05/09/16	34-35	05/09/16	36-9	05/09/16
32-26	05/09/16	33-20	05/09/16	34-36	05/09/16	36-10	05/09/16
32-27	05/09/16	33-21	05/09/16	34-37	05/09/16	36-11	05/09/16
32-28	05/09/16	33-22	05/09/16	34-38	05/09/16	36-12	05/09/16
32-29	05/09/16	33-23	05/09/16	34-39	05/09/16	36-13	05/09/16
32-30	05/09/16	33-24	05/09/16	34-40	05/09/16	36-14	05/09/16
32-31	05/09/16	33-25	05/09/16	34-41	05/09/16	36-15	05/09/16
32-32	05/09/16	33-26	05/09/16	34-42	05/09/16	36-16	05/09/16
32-33	05/09/16	ATA 34		34-43	05/09/16	36-17	05/09/16
32-34	05/09/16	34-1	05/09/16	34-44	05/09/16	36-18	05/09/16
32-35	05/09/16	34-2	05/09/16	34-45	05/09/16	36-19	05/09/16
32-36	05/09/16	34-3	07/07/11	34-46	05/09/16	36-20	05/09/16
32-37	05/09/16	34-4	07/07/11	34-47	05/09/16	36-21	05/09/16
32-38	05/09/16	34-5	07/07/11	34-48	05/09/16	36-22	05/09/16
32-39	05/09/16	34-6	05/09/16	34-49	05/09/16	36-23	05/09/16
32-40	05/09/16	34-7	05/09/16	34-50	05/09/16	36-24	05/09/16
32-41	05/09/16	34-8	05/09/16	34-51	05/09/16	36-25	05/09/16
32-42	05/09/16	34-9	05/09/16	34-52	05/09/16	36-26	05/09/16
32-43	05/09/16	34-10	05/09/16	ATA 35		36-27	05/09/16
32-44	05/09/16	34-11	05/09/16	35-1	05/09/16	36-28	05/09/16
32-45	05/09/16	34-12	05/09/16	35-2	07/07/11	36-29	05/09/16
32-46	05/09/16	34-13	05/09/16	35-3	05/09/16	36-30	05/09/16
32-47	05/09/16	34-14	05/09/16	35-4	05/09/16	36-31	05/09/16
32-48	05/09/16	34-15	05/09/16	35-5	05/09/16	36-32	05/09/16
ATA 33		34-16	05/09/16	35-6	05/09/16	36-33	05/09/16
33-1	05/09/16	34-17	05/09/16	35-7	05/09/16	36-34	05/09/16
33-2	07/07/11	34-18	05/09/16	35-8	05/09/16	36-35	05/09/16
33-3	07/07/11	34-19	05/09/16	35-9	05/09/16	36-36	05/09/16
33-4	07/07/11	34-20	05/09/16	35-10	05/09/16	36-37	05/09/16
33-5	05/09/16	34-21	05/09/16	35-11	05/09/16	36-38	05/09/16
33-6	05/09/16	34-22	05/09/16	35-12	05/09/16	36-39	05/09/16
33-7	05/09/16	34-23	05/09/16	35-13	05/09/16	36-40	05/09/16
33-8	05/09/16	34-24	05/09/16	35-14	05/09/16	36-41	05/09/16
33-9	05/09/16	34-25	05/09/16	ATA 36		36-42	05/09/16
33-10	05/09/16	34-26	05/09/16	36-1	05/09/16	36-43	05/09/16
33-11	05/09/16	34-27	05/09/16	36-2	07/07/11	36-44	05/09/16
33-12	05/09/16	34-28	05/09/16	36-3	07/07/11	36-45	05/09/16
33-13	05/09/16	34-29	05/09/16	36-4	05/09/16	36-46	05/09/16
33-14	05/09/16	34-30	05/09/16	36-5	05/09/16	36-47	05/09/16
33-15	05/09/16	34-31	05/09/16	36-6	05/09/16	36-48	05/09/16
33-16	05/09/16	34-32	05/09/16			36-49	05/09/16



Revision 14 complies with FAA B777 MMEL Revision 21.

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BY: FAA DELTA CMO-27
EFFECTIVE DATE: 05/09/2016


John R. Brooke
Principal Operations Inspector

Page	Date

36-50 05/09/16
36-51 05/09/16
36-52 05/09/16
36-53 05/09/16
36-54 05/09/16

ATA 38

38-1 05/09/16
38-2 05/09/16
38-3 05/09/16
38-4 05/09/16
38-5 05/09/16
38-6 05/09/16

ATA 45

45-1 05/09/16
45-2 05/09/16
45-3 05/09/16
45-4 05/09/16

ATA 46

46-1 07/07/11
46-2 07/07/11

ATA 47

47-1 05/09/16
47-2 05/09/16

ATA 49

49-1 05/09/16
49-2 07/07/11
49-3 07/07/11
49-4 05/09/16
49-5 05/09/16
49-6 05/09/16
49-7 05/09/16
49-8 05/09/16
49-9 05/09/16
49-10 05/09/16
49-11 05/09/16
49-12 05/09/16
49-13 05/09/16
49-14 05/09/16
49-15 05/09/16
49-16 05/09/16
49-17 05/09/16

Page	Date

49-18 05/09/16
49-19 05/09/16
49-20 05/09/16
49-21 05/09/16
49-22 05/09/16

ATA 52

52-1 05/09/16
52-2 07/07/11
52-3 07/07/11
52-4 07/07/11
52-5 05/09/16
52-6 05/09/16
52-7 05/09/16
52-8 05/09/16
52-9 05/09/16
52-10 05/09/16
52-11 05/09/16
52-12 05/09/16
52-13 05/09/16
52-14 05/09/16
52-15 05/09/16
52-16 05/09/16
52-17 05/09/16
52-18 05/09/16
52-19 05/09/16
52-20 05/09/16
52-21 05/09/16
52-22 05/09/16
52-23 05/09/16
52-24 05/09/16
52-25 05/09/16
52-26 05/09/16
52-27 05/09/16
52-28 05/09/16
52-29 05/09/16
52-30 05/09/16
52-31 05/09/16
52-32 05/09/16

ATA 53

53-1 05/09/16
53-2 05/09/16

Page	Date

ATA 56

56-1 05/09/16
56-2 05/09/16

ATA 73

73-1 05/09/16
73-2 07/07/11
73-3 07/07/11
73-4 07/07/11
73-5 05/09/16
73-6 05/09/16
73-7 05/09/16
73-8 05/09/16
73-9 05/09/16
73-10 05/09/16
73-11 05/09/16
73-12 05/09/16
73-13 05/09/16
73-14 05/09/16
73-15 05/09/16
73-16 05/09/16

ATA 74

74-1 05/09/16
74-2 05/09/16

ATA 75

75-1 05/09/16
75-2 05/09/16
75-3 05/09/16
75-4 05/09/16

ATA 77

77-1 05/09/16
77-2 03/08/10
77-3 03/08/10
77-4 05/09/16
77-5 05/09/16
77-6 05/09/16
77-7 05/09/16
77-8 05/09/16

Page	Date

ATA 78

78-1 05/09/16
78-2 03/08/10
78-3 05/09/16
78-4 05/09/16
78-5 05/09/16
78-6 05/09/16
78-7 05/09/16
78-8 05/09/16
78-9 05/09/16
78-10 05/09/16

ATA 79

79-1 05/09/16
79-2 03/08/10
79-3 05/09/16
79-4 05/09/16
79-5 05/09/16
79-6 05/09/16
79-7 05/09/16
79-8 05/09/16

ATA 80

80-1 05/09/16
80-2 03/08/10
80-3 05/09/16
80-4 05/09/16
80-5 05/09/16
80-6 05/09/16

**LIST OF
EFFECTIVE
PAGES**

LP-1 05/09/16
LP-2 05/09/16
LP-3 05/09/16
LP-4 05/09/16
LP-5 05/09/16

----- END -----