

Master

Configuration, Maintenance and Procedures

BD500-3AB48-11200-00
Issue No. 009.00

Copyright © 2024 Airbus Canada Limited Partnership

All rights reserved. No part of this work may be reproduced or copied in any form or by any means without written permission of Airbus Canada Limited Partnership.

The Airbus and A220 logos are registered trademarks of Airbus Canada Limited Partnership.

The information, technical data and the designs disclosed herein are the exclusive property of Airbus Canada Limited Partnership or contain proprietary rights of others and are not to be used or disclosed to others without the written consent of Airbus Canada Limited Partnership. The recipient of this document, by its retention and use, agrees to hold in confidence the technical data and designs contained herein. The foregoing shall not apply to persons having proprietary rights to such information, technical data or such designs to the extent that such rights exist.

Publication No.:

Manufacturer:

AIRBUS

Airbus Canada Limited Partnership
Customer Services
13100 Henri-Fabre Blvd.
Mirabel, Quebec J7H 3C6

Intentionally left blank

Transport Canada Civil Aviation (TCCA) - Approval page

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1

Transport Canada Civil Aviation (TCCA)

Refer to Fig. 1 for the Transport Canada Civil Aviation (TCCA) approval page.

Intentionally left blank

Federal Aviation Administration (FAA) - Approval page

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Federal Aviation Administration (FAA)

Compliance statement

This document applies to airplanes certified for ETOPS in accordance with the provisions of 14 CFR Part 25 Requirement 25.1535 at Amendment 25-120.

The Type Design, systems reliability and performance of the considered airplane models were evaluated by the FAA and found suitable for Extended Operations (ETOPS) when configured, maintained and operated in accordance with this document.

This finding does not constitute an FAA approval to conduct Extended Operations. Operation approval must be obtained from the responsible authority.

|

Approved by FAA on [TBD date].

Intentionally left blank

European Union Aviation Safety Agency (EASA) - Approval page

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 European Union Aviation Safety Agency (EASA)

Compliance statement

This document applies to airplanes certified for ETOPS in accordance with the provisions of CS 25.1535 requirement at Amendment 12 and AMC 20-6.

The Type Design, systems reliability and performance of the considered airplane models were evaluated by the European Aviation Safety Agency (EASA) and found suitable for Extended Operations (ETOPS) when configured, maintained and operated in accordance with this document.

This finding does not constitute an EASA approval to conduct Extended Operations. Operation approval must be obtained from the responsible authority.

|

Approved by EASA on 11 April 2024.

Intentionally left blank

ETOPS configuration, maintenance and procedures - Introduction

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This document presents the Model BD-500-1A10 (A220-100) and BD-500-1A11 (A220-300) airplane type design configuration, maintenance tasks, crew procedures and Master Minimum Equipment List (MMEL) ETOPS constraints for extended range operations.

The tasks defined in the CMP document have been created to meet the:

- TCCA SCA 2015-06 requirement 4.1.6
- Federal Aviation Administration (FAA) title 14 Code of Federal Regulation (CFR) Appendix K of Part 25 requirement in section K25.1.6.
- European Aviation Safety Agency (EASA) CS 25.1535 and AMC 20-6.

The CMP standards and constraints are in addition to those in the Airplane Flight Manual (AFM) (including the AFM supplement for ETOPS), the Airworthiness Limitations (AWL), the Maintenance Review Board Report (MRBR) and the MMEL, which remain applicable. Where maintenance task intervals in the Configuration, Maintenance and Procedures (CMP) document are more restrictive than required in MRB report, these overrule those in MRB report.

In case the CMP and MRBR task intervals are different, tasks must be performed at the most restrictive interval.

Maintenance tasks which become obsolete due to an authorized configuration change are not applicable.

The standards and constraints defined in the CMP must be implemented prior to and maintained during the ETOPS operations.

Operators seeking ETOPS approval should first comply with all CMP requirements for configuration which includes the implementation of service bulletins required to be implemented prior to conducting ETOPS. The equivalent design change, when already incorporated in production, will not show in the aircraft effectivity section of the service bulletin. This is considered as equivalent and acceptable for the CMP.

The CMP document is issued at time of ETOPS certification of a given aircraft-engine combination. Approved revisions must be issued to include new aircraft models and/or new ETOPS capabilities for already approved models. Corrective actions which are deemed necessary to maintain the safety of ETOPS flights are mandated by dedicated "Airworthiness Directives" released by the authority.

The design, systems reliability, and performance of the considered airplane/engine model combinations were evaluated by Transport Canada Civil Aviation (TCCA) National Aircraft Certification branch, by the EASA and by the FAA Administrator and found to be suitable for

ETOPS when configured, maintained and operated in accordance with the additional and or modified requirements specified within this document. This however, does not constitute by itself an approval to conduct extended operations. Operational approval must be obtained by the operator from their local regulatory authority.

2 **Structure**

The CMP is divided into five main sections.
Refer to the table below for a description of each section.

Table 2 Configuration, Maintenance and Procedures (CMP) structure

Section	Content
Section 1 Introduction	This section contains the scope the structure, the list of terms and abbreviation.
Section 2 Configuration standards	This section contains the specific aircraft configuration changes necessary for ETOPS.
Section 3 Maintenance standards	This section contains the specific systems and power plant additional maintenance requirements necessary for ETOPS.
Section 4 Procedures standards	This section contains the specific operational procedures necessary for ETOPS.
Section 5 MMEL ETOPS constraints	This section contains the specific MMEL ETOPS constraints permitted for ETOPS.

3 **Applicability**

Aircraft model number and applicability designation for the tasks contained in the ETOPS configuration, maintenance and procedures publication are defined in the table below.

Table 3 Aircraft applicability by model

Aircraft model number	Applicable to
BD-500-1A10 (A220-100)	All
BD-500-1A11 (A220-300)	All

4 **List of abbreviations**

Refer to the list of abbreviations at the beginning of this publication.

5 **List of terms**

Refer to the list of terms at the beginning of this publication.

6 **Configuration, Maintenance and Procedures (CMP) Revision Guidelines**

The CMP document will be revised for the following:

- To add new airframe-engine combinations
- To expand the ETOPS type design approval for a previously approved airframe-engine combination
- To revise a CMP requirement that is superseded by an Airworthiness Directive (AD)

The CMP will not be revised to define changes to the airplane type design that are not specific for ETOPS.

7 Configuration, Maintenance and Procedures (CMP) layout

Table 4 How to read the table

ATA (1)	Item Description (2)	References/Comments (3)	Area of Operation/ ETOPS applicability (4)

- 1 This column list the Air Transport Association (ATA) Specification S1000D Standard to identify the aircraft system for which there is a configuration standard/maintenance standard/procedures standard/deviations standard for ETOPS operations.
- 2 This column provide a description of the items as follows:
 - In Configuration standards - Specific aircraft configuration, Line Replaceable Unit (LRU) or part numbers necessary for ETOPS configuration
 - In Maintenance standards - This document contains the additional maintenance tasks required for ETOPS including reference, if any, to the relevant task:
 - identified in the MRBR and AWL; and
 - defined in the Aircraft Maintenance Publication (AMP).
 - In Procedure standards - This document contains ETOPS procedures standards. Refer to AFM for more detailed information on how to accomplish the ETOPS operational standards.
 - In MMEL ETOPS constraints - MMEL ETOPS constraints necessary for ETOPS operation.

Note

The provisions in the CMP are in addition to those in the MMEL for ETOPS operations.

In case the CMP and MRBR task intervals are different, task must be performed at the most restrictive interval.

- 3 This column list all pertinent reference material/authority associated with applicable standards. Comments or clarification could also be found in this column.
- 4 This column provides the maximum allowed ETOPS approved duration for each mandatory configured item listed.

Intentionally left blank

Aircraft/Engine combinations - Technical data

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

The following table gives the aircraft/engine combination approval for ETOPS.

Table 2 Aircraft/engine combinations

Aircraft/engine combination	Type design approval for ETOPS
BD-500-1A10/PW1519G	Up to 180 min ETOPS ²
BD-500-1A10/PW1521GA	Up to 180 min ETOPS ¹
BD-500-1A10/PW1521G	Up to 180 min ETOPS ²
BD-500-1A10/PW1524G	Up to 180 min ETOPS ²
BD-500-1A11/PW1521G-3	Up to 180 min ETOPS ²
BD-500-1A11/PW1524G-3	Up to 180 min ETOPS ²
1 TCCA and FAA	
2 TCCA, EASA and FAA	

Intentionally left blank

Configuration standards - Technical data

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This data module provides all the applicable configuration changes to the aircraft necessary for extended operations (ETOPS).
The Table 2 gives the list of configuration standards.

1.1 Diversion time

The diversion times are : 120, 180 minutes. When the area of operation/ETOPS applicability states “Up to XX min ETOPS“, the configuration standard applies to XX minutes and less.

2 Minimum configuration standard

The aircraft must have the minimum configuration standard listed in the Table 2 in order to be eligible for Extended Operation (ETOPS). The latest published Service Bulletin issue (revision) should be used and unless otherwise mandatory by an AD, all issues (revisions) are equally acceptable.
The service bulletin equivalent production modification was incorporated on the affected aircraft, at time of delivery to the customer, when the service bulletin applicability section lists the affected production aircraft serial number.

Intentionally left blank

Table 2 ETOPS minimum configuration standard

ATA	Item Description	Interval	References/Comments	Area of Operation/ ETOPS applicability
23	Long Range Communication (High Frequency (HF) Radio System or AFIRS SATCOM Iridium system)	To be installed prior ETOPS operation.	Note AFIRS SATCOM may replace an HF radio. The number of Long Range Communication Systems (LRCS) to be determined in accordance with the operational rules. Service bulletin: - BD500-231003 Issue 001 - HF Radio System; or - BD500-231004 Issue 001 - AFIRS SATCOM Iridium system or if installed from production, Option Number: - C23120001 - HF Radio System, Single Installation; (ModSum 500T800006), - C23120003 - HF Radio System, Dual Installation; (ModSum 500T800008), - C23120005 - HF Radio System, Single Installation, Dual Provisions; (ModSum 500T800010) or - C23150006 - AFIRS SATCOM Iridium system (ModSum 500T800522).	Up to 180 min ETOPS
24	Generator Control Unit (GCU) software upgrade	To be installed prior ETOPS operation.	Service bulletin: BD500-240006 Issue 001 New GCU software to incorporate temp bulb sensor debounce time improvement.	Up to 180 min ETOPS
26	Option Low Rate Discharge (LRD) cargo fire suppression bottle	To be installed prior ETOPS operation.	Service bulletin: BD500-262006 Issue 001 SB will provide aircraft kit to install 120 min FIREX cargo bottle (P/N 475124-01 and fool proofed patch harness). Option number C26240002 (Modsum 500T800032) - Cargo FIREX 120 minute diversion capability if installed. This configuration provides 135 min fire protection time.	Up to 120 min ETOPS
			Service bulletin: BD500-262007 Issue 001 SB will provide aircraft kit to install 180 min FIREX cargo bottle (P/N 475087-1 and fool proofed patch harness). Option number C26240003 (Modsum 500T800033) - Cargo FIREX 180 minute diversion capability if installed. This configuration provides 195 min fire protection time.	Up to 180 min ETOPS
	New FIREX Nozzles design in the aft cargo Compartment P/N : C01328965-001; or P/N : C01386971-001	To be installed prior ETOPS operation.	Service Bulletin: BD500-262002 Issue 001 or if installed from production, Top Modsum number: - 500T101139; or - 500T101383	Up to 180 min ETOPS
	Option FIDEX strapping	To be installed prior ETOPS operation.	Service bulletin: BD500-260009 Issue 001 or if installed from production, option number: - C26240013 - FIDEX Strapping, 120/180 Minutes Diversion Configuration, A220-100 (ModSum 500T800472) - C26240015 - FIDEX Strapping, 120/180 Minutes Diversion and Rear Barrel Equipment Rack Configuration, A220-100 (ModSum 500T800474)	Up to 180 min ETOPS

ATA	Item Description	Interval	References/Comments	Area of Operation/ ETOPS applicability
			- C26241017 - FIDEX Strapping, 120/180 Minutes Diversion Configuration, A220-300 (ModSum 500T800476) - C26241019 - FIDEX Strapping, 120/180 Minutes Diversion and Rear Barrel Equipment Rack Configuration, A220-300 (ModSum 500T800478) or if installed from production, Top Modsum number: - 503T101067 and SNIEO C00001300-S004 - 500T102670 (see Note 1) or - 500T102671 (see Note 1) SB will provide the necessary information and steps on how to reconfigure the FIREX strapping accordingly to the diversion time selected. Note 1: The SNIEO C00001300-S004 is not required because the modification has been already incorporated in production via this Top Modsum.	
	Engine Thrust Reverser Aft Fire Detector Element	To be installed within 5000 FH or 2 years, whichever comes first, from the release date of the Service Bulletin.	Service Bulletin: BD500-261001 (Fire Protection - Detection – Replacement of the Left and Right Engine Thrust Reverser Aft Fire Detector Element)	Up to 180 min ETOPS
27	Remote Electronics Unit (REU) change to address design flaw P/N : C05500026-007 or subsequent	To be installed prior ETOPS operation.	Service bulletin: BD500-270010 Issue No. 002 The updated REU hardware improves control of flight surfaces.	Up to 180-min ETOPS
28	Fuel system gauging computer software upgrade	To be installed prior ETOPS operation.	Service bulletin: BD500-284101 Issue 001 New fuel system gauging computer to reduce pilot workload in case of fuel imbalance scenario.	Up to 180-min ETOPS
	Center to main tank fuel Transfer Float Valve (TFV) upgrade P/N: 2130130-102	To be installed within 7500 FH or 3 years, whichever comes first, from the release date of the Service Bulletin	Service Bulletin: BD500-282017 Issue 001 Fuel - Distribution - Replacement of the transfer float shut-off vavles	Up to 180-min ETOPS
30	EBU - Thermal Anti-Ice (TAI) valve P/N : 999D0006-521 P/N : 999D0006-523	To be installed prior ETOPS operation.	Vendor Service Bulletin: BD500-302100 Ref. : Transmittal Letter VSB TL No. BD500-00-9. - UTAS service bulletin No. GRAPW1500BA-A-30-21-0001-00001-930A-A, original issue Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001 Engine - Extended Operation (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180-min ETOPS
31	Indicating/Recording System- General Computers - Integrated Modular Avionic Application (IMAA) software Change (Build 8.0A)	To be updated prior ETOPS operation.	Service bulletin: BD500-314002, Issue 004 or Service bulletin: BD500-314003, Issue 001 The Avionics SW 5.3 (build 8.0A) or SW 5.4 (build 8.0A1) introduces the “Low fuel alert FMS”	Up to 180-min ETOPS
	Integrated Modular Avionic Application (IMAA) software upgrade	To be installed prior ETOPS operation.	Service bulletin: BD500-314004 Issue 001 This Avionics SW version will reduce pilot workload in case of fuel imbalance scenario.	
36	Environmental Control System (ECS) - Pressure Regulating Shut Off Valve (PRSOV) P/N 70115C010001	To be installed prior ETOPS operation or perform maintenance task	Service bulletin: BD500-361001 Issue 001 Or perform prior to ETOPS operation maintenance task as per table 2 maintenance standard, if PRSOV P/N: 70115B010001 installed on aircraft.	Up to 180 min ETOPS
38	Water Waste System Controller (WWSC)	To be installed prior ETOPS operation.	Vendor Service Bulletin: BD500-380001. Ref.: Transmittal Letter VSB TL No. BD500-00-49 C&D Zodiac SB 79000-500-38-002 Issue 0.	Up to 180 min ETOPS

ATA	Item Description	Interval	References/Comments	Area of Operation/ ETOPS applicability
			Or Service Bulletin BD500-381003 - Water/Waste - Potable Deactivation of the Water Purge Function.	
49	Auxiliary Power Unit (APU) Fuel Control Unit (FCU)	To be installed prior ETOPS operation.	Vendor Service Bulletin : BD500-493103. Ref.: Transmittal Letter VSB TL No. BD500-00-25 - Honeywell Service Bulletin 131-49-8249 Revision 1 APU equipped with the FCU P/N 441921-5 will need to be retrofitted with the new FCU P/N 70722492-1 or subsequent.	Up to 180 min ETOPS
50	Redesigned cargo blow out panels with 1.9 psid threshold setting	To be installed prior ETOPS operation.	Service bulletin: BD500-500001 Issue 001 New cargo blow out panel to resolve dislodging issue.	Up to 180 min ETOPS
72	ETOPS type certified engine	To be installed prior ETOPS operation.	P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 007, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations ETOPS engine definitions as defined by engine Type Certificate (TC) holder.	Up to 180 min ETOPS
	Damper, seal support No. 3	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-72-00-0049-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Shaft, rotor, High Pressure Compressor (HPC)	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-72-00-0052-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Igniter plug	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-72-00-0069-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
73	Probe temperature and pressure, P2.5 and T2.5	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-73-00-0012-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Wiring harness, WF01, WF02, WF03, WF04, IGNRCAB, WC08	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-73-00-0014-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Plug in the Electronic Engine Control (EEC) P2 manifold assembly (AS01)	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-73-00-0015-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Housing, fuel filter element	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-73-00-0016-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS

ATA	Item Description	Interval	References/Comments	Area of Operation/ ETOPS applicability
	Electronic Engine Control (EEC) software - P/N 5324158-14 (v2.11.15) or subsequent; Prognostics and Health Management Unit (PHMU) software - P/N 5324162-05 (v2.11.2.1P) or subsequent	To be installed within 2500 FH or 1 year, whichever comes first, from the release date of the Service Bulletin BD500-732014.	Service bulletin: BD500-732014 (FADEC 2.11.15) Service bulletin: BD500-732012 (PHMU V2.11.2.1P) Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Stator, Alternator assembly	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-73-00-0020-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Engine Fuel and Control - Probe, Temperature and Pressure, P2T2	Replace the P2T2 PN: 5327761 (1020472-1) before 2000 hours have elapsed since new.	P&W Service bulletin No. PW1000G-A-73-00-0049-00A-930A-D; Engine Fuel Control - Probe, Temperature and Pressure, P2T2 - Replace the P2T2 Temperature and Pressure Probe to Prevent Service Interruptions Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Engine-Bracket Assemblies, Angle and Clamps, Cushion Loop (FM02)	To be installed within 2500 FH or 1 year, whichever comes first, from the release date of the Service Bulletin.	P&W Service bulletin No. PW1000G-A-73-00-0061-00A-930A-D Engine- Bracket Assemblies, Angle and Clamps, Cushion Loop - Install New Angle Bracket Assemblies and Cushion Loop Clamps to Decrease Cracks Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
75	Solenoid, electrical buffer air valve	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-75-00-0003-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Tube assembly, diffuser case air pressure (AP12) and tube assembly, turbine intermediate case air pressure (AP07)	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-75-00-0005-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Tube Assembly, Air, Buffer Air Valve (AA08)	To be installed within 3125 FH or 15 months, whichever comes first, from the release date of the Service Bulletin.	P&W Service bulletin No. PW1000G-A-75-00-0012-00A-930A-D Bleed-Air - Tube Assembly, Air, Buffer Air Valve (AA08) - Replace the Buffer Air Valve Air Tube Assembly (AA08) with a More Durable Tube Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
79	Manifold, Oil Filter Differential Pressure (OFDP) assembly	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-79-00-0009-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Cooler, fuel oil	To be installed prior ETOPS operation.	P&W Service bulletin No. PW1000G-A-79-00-0011-00A-930A-D Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS

ATA	Item Description	Interval	References/Comments	Area of Operation/ ETOPS applicability
	Oil - Tube, oil supply, fuel oil manifold (LP10)	To be installed prior to ETOPS operation.	P&W Service bulletin No. PW1000G-A-79-00-0013-00A-930A-D Oil - Tube, Oil Supply, Fuel Oil Manifold (LP10) - Replace The Fuel Oil Manifold Oil Supply Tube (LP10) To Decrease Oil Leaks Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Oil - Valve assembly, oil tank, pressure relief	To be installed within 1250 FH or 6 months, whichever comes first, from the release date of the Service Bulletin	P&W Service bulletin No. PW1000G-A-72-00-0207-00A-930A-D, Oil - Valve Assembly, Oil Tank, Pressure Relief - Replace the oil tank pressure relief valve assembly	Up to 180 min ETOPS
	Oil - Packing	At next oil filter scheduled maintenance.	P&W Service bulletin No. PW1000G-A-79-00-0029-00A-930A-D; Oil - Packing, Preformed - Replace the Preformed Packing to Prevent Oil Loss Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Oil - Sensor, Pressure	To be installed within 7500 FH or 3 years, whichever comes first, from the release date of the Service Bulletin.	P&W Service bulletin No. PW1000G-A-79-00-0025-00A-930A-D Oil - Sensor, Pressure, Oil - Replace the Main Oil Pressure (MOP) Sensor with a Sensor to increase Durability Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS
	Oil - Tube Assembly, Oil, Supply, Turbine Exhaust Case (TEC) (LP43)	To be installed within 3750 FH or 18 months, whichever comes first, from the release date of the Service Bulletin.	P&W Service bulletin No. PW1000G-A-79-00-0028-00A-930A-D Oil - Tube Assembly, Oil, Supply, Turbine Exhaust Case (TEC) (LP43) - Replace the TEC oil Supply Tube Assembly (LP43) and Loop Clamp Bracket Assembly to Decrease Oil Leaks Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended-range twin-engine operations	Up to 180 min ETOPS

Intentionally left blank

Maintenance standards - Technical data

References

Table 1 References

Data Module/Technical Publication	Title
BD500-A-J28-21-10-01AAA-520A-A	Motive flow check valve, left and right wing - Remove procedure
BD500-A-J28-21-10-01AAA-720A-A	Motive flow check valve, left and right wing - Install procedure
BD500-A-J36-11-01-00AAA-921A-A	Engine pressure regulating shut-off valve - Discard
BD500-A-J45-45-00-01AAA-C21A-A	Access to view fault messages - System monitoring
BD500-A-J49-91-00-01AAA-200B-A	Auxiliary Power Unit (APU) engine oil system - Quantity check
BD500-A-J72-00-00-01AAA-312A-A	Engine general - Examination with a borescope
BD500-A-J72-41-00-01AAA-312A-A	Diffuser case assembly - Combustion chamber - Examination with a borescope
BD500-A-J72-41-00-02AAA-312A-A	Diffuser case assembly - High Pressure Turbine (HPT) 1st stage vanes - Examination with a borescope
BD500-A-J72-51-00-00AAA-312A-A	High Pressure Turbine (HPT) assembly - Examination with a borescope
BD500-A-J72-52-00-00AAA-312A-A	Turbine Intermediate Case (TIC) module - Examination with a borescope
BD500-A-J72-53-00-00AAA-312A-A	Low Pressure Turbine (LPT) assembly - Examination with a borescope
BD500-A-J79-00-00-00AAA-212A-A	Oil system - Fill with oil
BD500-A-J79-21-09-00AAA-520A-A	Engine fuel/oil heat exchanger bypass valve - Remove procedure
BD500-A-J79-21-09-00AAA-720A-A	Engine fuel/oil heat exchanger bypass valve - Install procedure

Description

1

Introduction

ETOPS maintenance standards define the structural and systems maintenance/inspection tasks required to ensure proper operation, and continued airworthiness of the aircraft.

All pertinent Candidate Certification Maintenance Requirements (CCMR's) have been included in the ETOPS maintenance standards or as applicable Airplane Flight Manual (AFM) tasks.

2 **Maintenance standards**

Maintenance Review Board (MRB) Report BD500-3AB48-11400-01 and Airworthiness Limitations (AWL) BD500-3AB48-11400-02 define scheduled maintenance requirement.

The additional maintenance tasks required for ETOPS that are defined in the CMP document including reference, if any, to the relevant task:

- identified in the Maintenance Review Board Report (MRBR) and AWL; and
- defined in the Aircraft Maintenance Publication (AMP).

Table 2 below presents the additional maintenance tasks necessary for ETOPS.

Table 2 Maintenance standard

ATA	Item Description	References/Comments	Area of Operation/ ETOPS applicability
21	Ram air system - Detailed inspection of the emergency ram air valve supply duct Interval: 5500 flight hours	Perform AWL task number C21-52-00-01	Up to 180 min ETOPS
26	Avionic and electrical bay smoke detection system - Functional check of the ducted smoke detector outlets air flow Interval: 500 flight hours	Temporary maintenance task pre-service bulletin SB BD500-240004 and post service bulletin SB BD500-260002 Perform AWL task number C26-13-00-01	Up to 180 min ETOPS
27	Aileron Power Control Unit (PCU) compensator - Functional check Compliance (phase in) : - Perform this task before next ETOPS flight, and thereafter, every 12000 Flight Hours.	Perform AMP task BD500-A-J27-11-01-03AAA-340B-A issue 006 or later revision (Reference MRBR 27-11-00-02)	Up to 180 min ETOPS
	Aileron Power Control Unit (PCU) - Leak test Compliance (phase in) : - Perform this task before next ETOPS flight, and thereafter, only upon unscheduled based event.	Perform AMP task BD500-A-J27-11-01-01AAA-364B-A issue 007 or later revision	Up to 180 min ETOPS
	Elevator Power Control Unit (PCU) compensator - Functional check Compliance (phase in) : - Perform this task before next ETOPS flight, and thereafter, every 12000 Flight Hours.	Perform AMP task BD500-A-J27-31-01-03AAA-340B-A issue 005 or later revision (Reference MRBR 27-31-00-02)	Up to 180 min ETOPS
	Elevator Power Control Unit (PCU) - Leak test Compliance (phase in) : - Perform this task before next ETOPS flight, and thereafter, only upon unscheduled based event.	Perform AMP task BD500-A-J27-31-01-01AAA-364B-A issue 006 or later revision	Up to 180 min ETOPS
	Rudder Power Control Unit (PCU) compensator - Functional check Compliance (phase in) : - Perform this task before next ETOPS flight, and thereafter, every 12000 Flight Hours.	Perform AMP task BD500-A-J27-21-01-02AAA-340B-A issue 006 or later revision (Reference MRBR 27-21-00-02)	Up to 180 min ETOPS
	Rudder Power Control Unit (PCU) - Leak test Compliance (phase in) : - Perform this task before next ETOPS flight, and thereafter, only upon unscheduled based event.	Perform AMP task BD500-A-J27-21-01-01AAA-364B-A issue 008 or later revision	Up to 180 min ETOPS
28	Discard motive flow check valve P/N: 2090200-101	Discard and replace motive flow check valve	Up to 180 min ETOPS

ATA	Item Description	References/Comments	Area of Operation/ ETOPS applicability
	Interval: 1000 flight hours ETOPS life limited part replacement - Motive flow check valve P/N: 2090200-101	Remove as per AMPBD500-A-J28-21-10-01AAA-520A-A and Install as per AMPBD500-A-J28-21-10-01AAA-720A-A.	
	Fuel system inspection Applicability: Pre Service bulletin: BD500-282004 For ETOPS operation: perform the initial inspection no later than 1800 flight hours from aircraft time since new prior to performing ETOPS flights, then repeat every 1800 flight hours.	Service bulletin: BD500-282001	Up to 180 min ETOPS
	Applicability: Post Service bulletin: BD500-282004 For ETOPS operation: perform the initial and repeat inspection as per compliance time specified in Service Bulletin BD500-282006	Service bulletin: BD500-282006	Up to 180 min ETOPS
36	Restoration (torque motor replacement) of the Pressure Regulating Shut Off Valve (PRSOV) P/N 70115B010001 Interval : 850 flight hours	Temporary maintenance task pre-service bulletin SB BD500-361001: Restoration of ECS Pressure Regulating Shut Off valve (PRSOV) - Restoration as per AMPBD500-A-J36-11-01-00AAA-921A-A.	Up to 180 min ETOPS
49	Inspection of auxiliary power unit starter motor brush wear indicator pin Interval : 850 APU cycles Detailed inspection of the APU starter motor brush wear indicator pin	Reference AMPBD500-A-J49-41-04-01AAA-310E-A	Up to 180 min ETOPS
	APU oil consumption rate to be within limits Interval : Pre-flight (determination based on record review) Prior to ETOPS flight check oil quantity and establish oil consumption rate. - APU oil consumption less than 50 cm ³ (1.69 fluid ounce)/APU operating hour is normal - APU oil consumption between 50 cm ³ (1.69 fluid ounce)/hr and 150 cm ³ (5.07 fluid ounce)/hr requires the APU oil to be serviced to the full level on the sight glass prior to each ETOPS flight - APU oil consumption greater than 150 cm ³ (5.07 fluid ounce)/hr is unacceptable for ETOPS dispatch	APU oil consumption rate per APU operating hour is to be verified through record review prior to each ETOPS dispatch. When APU oil is added (to the full mark), added oil quantity is to be recorded. Reference to AMPBD500-A-J49-91-00-01AAA-200B-A. APU operating hours to be noted at time of oil servicing.	Up to 180 min ETOPS
	APU high altitude start program Pre-flight (determination based on record review)	If an operator elects to not implement an APU in-flight start program for APU on demand during ETOPS flights, the APU shall be operated throughout the ETOPS portion of the flights. If an operator elects to implement an APU in-flight start program, the APU shall maintain a minimum 95% start reliability calculated on a rolling 12 month average to permit continued ETOPS operation with the APU normally OFF (APU on demand). If the APU reliability falls short of this requirements, all of the operator's ETOPS fleet shall operate the APU throughout the ETOPS portion of the flight (or be started and running prior to a point 60 minutes from the adequate alternate airport). In addition, the operator must ensure the matter is investigated and addressed in a timely fashion such that the in flight re-start reliability is recovered. The necessitated corrective action must be considered as	Up to 180 min ETOPS

ATA	Item Description	References/Comments	Area of Operation/ ETOPS applicability
		applicable to the operator's ETOPS fleet in order to prevent another ETOPS configured APU from failing an in flight re-start attempt. The APU in-flight start program applies to each ETOPS configured APU in the operator's fleet and is to be developed in order to ensure adequate reliability for ETOPS as follows: - APU in-flight starts are to be performed on all ETOPS flights, at mission mid-point time, in conjunction with procedure standards ATA 49. • A total of three start attempts, per AFM limitation, can be performed. - In addition, on non-ETOPS flights, the APU may be started for reliability demonstration, if the APU has been subjected to a minimum of two hours high altitude cold soak (with APU OFF) for the ETOPS configured APU. - All other APU in-flight starts (successful and unsuccessful) for the ETOPS configured APU count towards the in-flight start reliability rate except those starts performed for verification of maintenance corrective actions resulting from unsuccessful start. Following maintenance action aimed at correcting APU ground or in-flight start capability, a verification of the APU in-flight start capability based on the minimum of two hours high altitude cold soak (with APU OFF) for the ETOPS configured APU is to be performed. The operator must investigate root causes and ensure corrective actions are taken if the rolling 12 month average falls below the 95% start reliability requirement. The flight crew are to make sure an entry in the aircraft flight logbook is performed for each in-flight start attempt, the entry should include the following information: - ETOPS or Non-ETOPS flight - Departure and arrival stations - Start time - Start results (was or was not successful) - Altitude when started - Outside air temperature (OAT or SAT) and APU oil temperature prior to start.	
71	Engine oil consumption rate to be within limits Interval: Pre-flight (determination based on record review) Following main engine installation or replacement on any ETOPS aircraft, oil consumption rate is to be established and verified to be stable; through the conduct of a minimum of 5 non-ETOPS flights before the aircraft is to be released for ETOPS dispatch. - Prior to each flight: engine oil is to be serviced to full - Oil consumption rate is to be established. - An exceedance of the maximum oil consumption limit (0.4 quart per hour) is not permitted for ETOPS operation.	When engine oil is added (to the full mark), added oil quantity is to be recorded Reference to AMPBD500-A-J79-00-00-00AAA-212A-A. Engine operating hours to be recorded at time of oil servicing. Engine oil consumption rate is to be determined prior to ETOPS dispatch.	Up to 180 min ETOPS

ATA	Item Description	References/Comments	Area of Operation/ ETOPS applicability
	Fill the main engine oil tank prior to each ETOPS flight. Interval: Pre-flight Engine oil is to be verified full prior to dispatch	Reference to AMPBD500-A-J79-00-00-00AAA-212A-A	Up to 180 min ETOPS
	Engine condition trend monitoring Continuous engine trend monitoring program to confirm availability of maximum continuous thrust within authorized limits using the Exhaust Gas Temperature (EGT) margin calculation procedure. Analysis methodology requires data from previous flights to be monitored against limitations. Note As an alternative, the operator may elect to implement an approved engine condition monitoring program that ensure availability of maximum continuous thrust within authorized limits.	PW1500G Series Engine Maintenance Manual (EMM): PW1000G-A-71-00-00-01B-030A-A, Issue No. 002, or later revision, EGT (ITT) Margin Calculation Point for Extended-Range Twin Engine Operating Performance Standards (ETOPS)/ One Engine Inoperative (OEI) Pratt and Whitney (PW) Engine condition trend monitoring program to include mandatory maintenance if engine condition is deteriorating. (Engine operation limits and guidelines)	Up to 180 min ETOPS
	Main engine compressor operability margin monitoring Continuous engine trend monitoring program to evaluate Low Pressure Compressor (LPC) Stall margin. Task to be performed by PW's customer technical service program.	LPC stall margin monitoring by P&W is required for ETOPS operation. Through PW's customer technical service program, service engines will be monitored to ensure adequate LPC stall margin is maintained for ETOPS operation. ETOPs operators are required to provide available ACARS ACMF report data to PW to conduct monitoring and to perform required maintenance actions as directed by P&W. Also refer to the Federal Aviation Administration (FAA) Special Airworthiness Information Bulletin (SAIB) NE-20-09 issued April 30, 2020.	Up to 180 min ETOPS
72	Main gear box pin inspection and re-torque of the main gearbox module right and left side mounting bracket bolt. Interval: Perform task prior to ETOPS dispatch on affected engines	Service bulletin: PW1000G-A-72-00-0085-00A-930A-D, Issue No. 002, Engine - gearbox module, main - inspection and re-torque of the main gearbox module pin assembly.	Up to 180 min ETOPS

ATA	Item Description	References/Comments	Area of Operation/ ETOPS applicability
	Engine General - Unscheduled inspection Interval : Event based Defines mandatory inspection and adherence time requirements post occurrence of an operational anomaly such as: - Bird strike or Foreign Object Damage (FOD) ingestion - Volcanic ash or sand ingestion - High turbulence or lateral loads; heavy or overweight landings - Surge/Stall event - EGT over limit - Engine fire - Oil temperature over limit - Engine shutdown windmill - Post negative and zero “G” Event - Anytime engine exceeds 7 seconds continuous operation negative or zero “G” - Observation of loose metal particles in Low Pressure Turbine (LPT) area, Turbine Exhaust Case (TEC), tailpipe or tailcone area - Engine (Hot) shutdown (shutdown that does not comply with cool down requirement) - Engine In-Flight Shutdown (IFSD)	PW1500G series Engine Maintenance Manual (EMM) PW1000G-A-72-00-00-00A-282A-A, Issue No. 009, or later revision, Engine general Unscheduled inspection Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	Up to 180 min ETOPS
	Do a borescope inspection of the engine Interval: Post IFSD or OEI event General information about borescope port locations and requirements	PW1500G Series Engine Maintenance Manual (EMM) PW1000G-A-72-00-00-00A-312A-A, Issue No. 005, or later revision, Do a borescope inspection of the engine (Reference AMPBD500-A-J72-00-00-01AAA-312A-A) Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	Up to 180 min ETOPS
	Do a borescope inspection of the combustion chamber area Interval: every 2000 FH Procedure to do a borescope inspection of the combustion chamber	PW1500G Series Engine Maintenance Manual (EMM) PW1000G-A-72-41-00-01A-312A-D, Issue No. 009, or later revision, Do a borescope inspection of the combustion chamber area. (Reference AMPBD500-A-J72-41-00-01AAA-312A-A and MRBR 72-41-00-01). For exceptions that limit interval to less than 2000 FH, refer to the Service Bulletin that follow: - PW1000G-A-72-00-0073-00A-930A-D; Engine - Chamber, Combustion, Assembly of Repetitive Borescope Inspection of the Combustion Chamber Assembly, PN 30G4779A11. - PW1000G-A-72-00-0093-00A-930A-D; Engine - Chamber, Combustion, Assembly of Repetitive Borescope Inspection of the Combustion Chamber Assembly, PN 30G4869A11.	Up to 180 min ETOPS

ATA	Item Description	References/Comments	Area of Operation/ ETOPS applicability
79		- PW1000G-A-72-00-0099-00A-930A-D; Engine - Chamber, Combustion, Assembly of Repetitive Borescope Inspection of the Combustion Chamber Assembly, PN 30G5695A11. Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	
	Do a borescope inspection of the High Pressure Turbine (HPT) 1st stage vanes Interval: every 2000 FH Procedure to do a borescope inspection of the High Pressure Turbine (HPT) 1st stage vanes	PW1500G Series Engine Maintenance Manual (EMM) PW1000G-A-72-41-00-02A-312A-D, Issue No. 007, or later revision, Do a borescope inspection of the High Pressure Turbine (HPT) 1st stage vanes (Reference AMPBD500-A-J72-41-00-02AAA-312A-A and MRBR 72-41-00-02). Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	Up to 180 min ETOPS
	Do a borescope inspection of the High Pressure Turbine (HPT) Interval: every 2000 FH Procedure to do a borescope inspection of the High Pressure Turbine (HPT)	PW1500G Series Engine Maintenance Manual (EMM) PW1000G-A-72-51-00-00A-312A-D, Issue No. 005, or later revision, Do a borescope inspection of the High Pressure Turbine (HPT) (Reference AMPBD500-A-J72-51-00-00AAA-312A-A) Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	Up to 180 min ETOPS
	Turbine Intermediate Case (TIC) Module - Borescope inspection Interval: every 2000 FH Procedure to do a borescope inspection of TIC forward vane assembly gas path area	PW1500G Series Engine Maintenance Manual (EMM) PW1000G-A-72-52-00-00A-312A-D, Issue No. 008, or late revision, Turbine Intermediate Case (TIC) Module - Borescope inspection (Reference AMPBD500-A-J72-52-00-00AAA-312A-A) Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	Up to 180 min ETOPS
	Do a Borescope Inspection (BSI) of the Low Pressure Turbine (LPT) Interval: every 2000 FH Procedure to check the Low Pressure Turbine (LPT)	PW1500G Series Maintenance Manual (EMM) PW1000G-A-72-53-00-00A-312A-D, Issue No. 008, or later revision, Do a Borescope Inspection (BSI) of the Low Pressure Turbine (Reference AMPBD500-A-J72-53-00-00AAA-312A-A) Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	Up to 180 min ETOPS
79	Fuel Oil heat Exchanger Oil Supply Assembly (LU40) - Increase the Torque Interval: Perform this task once within 6250 FH or 30 months, whichever comes first, from the release date of the Service Bulletin.	Perform P&W Service bulletin No, PW1000G-A-79-00-0026-00A-930A-D Oil Bolt - Increase the Torque on the Bolts that Hold the Fuel Oil Heat Exchanger Oil Supply Manifold Assembly (LU40) to prevent movement during operation.	Up to 180 min ETOPS

ATA	Item Description	References/Comments	Area of Operation/ ETOPS applicability
		Note Part of P&W Master ETOPS Service bulletin No. PW1000G-A-72-00-0070-00A-930A-D, Issue No. 001, Engine - Extended Operations (ETOPS) - Requirements for extended range twin-engine operations	

Intentionally left blank

Procedure standards - Technical data

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This document contains the additional procedure standards that are applicable to BD-500-1A10 (A220-100) and BD-500-1A11 (A220-300) ETOPS, to be released in AFM supplement 19 (ETOPS).

These standards are in addition to:

- BD500-3AB48-22200-00 (BD-500-1A10) AFM Issue 012 or a later issue.
- BD500-3AB48-32200-00 (BD-500-1A11) AFM Issue 011 or a later issue.

Intentionally left blank

Table 2 Procedure standard for ETOPS

ATA	Item Description	References/Comments	Area of Operation/ETOPS applicability
21	Preflight Operational Check of the Ram Air Valve	Refer to AFM supplement 19 (ETOPS)	Area of Operation: Normal Up to 180 min ETOPS
24	Diversion mandatory if only one generator remains available	Refer to AFM	Area of Operation: Non Normal Up to 180 min ETOPS
	When the airplane is cold-soaked at ambient temperature of -20° C (-4° F) or below for more than 8 hours, one of the procedures that follows is required: - Before airplane cold soak, remove airplane main batteries and store at room temperature, - During airplane cold soak, leave external power on or, - After airplane cold soak with batteries installed, 20 minutes after airplane is powered on by any AC electrical source, the battery control switches must be cycled one time.	Refer to AFM supplement 19 (ETOPS)	Area of Operation: Normal Up to 180 min ETOPS
27	Applicability: Prior to Service bulletin: BD500-270013 - Flight controls - General - Software Update or the Primary Flight Control Computer (PFCC) version PC-1 Multi Function Spoiler (MFS) deployment monitoring required entering ETOPS segment and every hour up to Equal Time Point (ETP)	Refer to AFM supplement 19 (ETOPS)	Area of Operation: Normal Up to 180 min ETOPS
49	Applicability prior to Service bulletin: BD500-314004 - Indicating/Recording System - General Computers - Integrated Modular Avionic Application (IMAA) Software Change (Avionics 5.6) APU must be started and run on ground for at least 10 minutes, within 2 hours before the departure for an ETOPS flights.	Refer to AFM supplement 19 (ETOPS)	Area of Operation: Normal Up to 180 min ETOPS
	Applicability prior to Service bulletin: BD500-314004 - Indicating/Recording System - General Computers - Integrated Modular Avionic Application (IMAA) Software Change (Avionics 5.6) The APU must be started at mid point of an ETOPS route and run for 10 minutes.	Refer to AFM supplement 19 (ETOPS)	Area of Operation: Normal Up to 180 min ETOPS
	Before departure, if an approved APU trend-monitoring program is not available, a normal (APU-Assisted) engine start must be done to show that APU EGT does not exceed ETOPS departure limits.	Refer to AFM supplement 19 (ETOPS)	Area of Operation: Normal Up to 180 min ETOPS

Intentionally left blank

M MEL ETOPS constraints - Technical data

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This document contains the Master Minimum Equipment List (MMEL) ETOPS constraints that are applicable to BD-500-1A10 (A220-100) and BD-500-1A11 (A220-300) to comply with ETOPS certification requirements.

The MMEL ETOPS constraints were derived from aircraft safety analysis that assessed extended operations impact on MMEL justifications.

2 CMP MMEL constraints

The below dispatch provisions in this document are those that are required to maintain the type-design requirements for ETOPS in addition to those normally defined by the MMEL process. The MMEL includes the additional items defined in this document. The CMP constraints will take precedence over the MMEL except where the MMEL requirements are more restrictive than the CMP.

- Dispatch unpressurized with both air condition packs inoperative is not permitted for ETOPS flights
- Dispatch with left air condition pack inoperative is not permitted for ETOPS flights
- Dispatch with any landing gear control lever failures is not permitted for ETOPS flights
- Dispatch with the left and / or right AC electrical fuel boost pump inoperative is not permitted for ETOPS flights.
- Dispatch with the center tank fuel transfer system (either sides) inoperative is not permitted for ETOPS flights.
- Dispatch with less than two operational lavatories is not permitted for ETOPS flights with passengers.
- Dispatch with left, right or APU generator inoperative is not permitted for ETOPS flights.

Intentionally left blank