PHENOM™
BY EMBRAER

PHENOM 300

ANAC

AIRPLANE FLIGHT MANUAL

EMBRAER S.A.

THIS DOCUMENT INCLUDES ALL INFORMATION REQUIRED TO BE FURNISHED TO THE PILOTS BY THE REGULAMENTO BRASILEIRO DE HOMOLOGAÇÃO AERONÁUTICA (RBHA-23). THIS DOCUMENT IS APPLICABLE TO THE EMB-505 AIRPLANE.

NOTE: PHENOM 300 IS A COMMERCIAL DESIGNATION USED IN THIS MANUAL TO REFER TO THE EMB-505 AIRPLANES.

ANAC APPROVAL: _____

ADEMIR ANTÔNIO DA SILVA
GERENTE-GERAL DE CERTIFICAÇÃO DE PRODUTO AERONÁUTICO

DATE: DECEMBER 03, 2009

REGISTRATION NUMBER: _____

SERIAL NUMBER: _____

AFM–2664

DECEMBER 03, 2009
REVISION 12 – DECEMBER 15, 2015

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LOG OF REVISIONS

REVISION NUMBER AND DATE	REVISED BLOCKS/ PAGES	DESCRIPTION OF REVISION	ANAC APPROVAL
1 MAY 18, 10	3-00 page 1 code 01, 3-04 page 8 code 01	Included the normal procedures related to Terrain Awareness and Warning System (TAWS).	AFM 2664-RPB-d1 approved by ANAC
2 SEP 14, 10	6-30 page 6 code 01 AP-TOC pages 1, 2 code 01 and Appendix 1 code 01	Updated Hydraulic Fluid Weight. Include Appendix 1 – Configuration Deviation List (CDL).	AFM-2664 Revision 2 approved by ANAC on September 14, 2010.
3 DEC 07, 10	2-30 page 1 code 01	Updated TAWS-A limitations.	AFM-2664 Revision 3 approved by ANAC on December 07, 2010.

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4 FEB 22, 11	1-00 page 1 code 01, 1-30 pages 1, 2 code 01 1-20 pages 1 to 8 code 01, 2-10 page 12 code 01 2-10 page 6 code 01, 2-50 pages 1 to 6 code 01, 3-00 page 1 code 01, 3-04 pages 1 to 5 code 01, 4-01 pages 22, 24 code 01, 4-04 pages 4 to 7 code 01, 4-22 pages 3 to 7 code 01, 5-00 page 1 code 01, 5-02 pages 1 to 4 code 01, 5-08 pages 1, 2 code 01, 5-15 pages 1 to 58 code 01, 5-18 pages 1 to 6 code 01, 5-20 pages 1 to 3 code 01, 5-25 pages 1 to 16 code 01	Included Service Bulletin table. Updated of Abbreviations and Acronyms table and the Baggage Loading variation. Updated information to remove limitations to operate in icing conditions above 30000 ft.	AFM-2664 Revision 4 approved by ANAC on February 22, 2011.

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5 OCT 26, 11	1-20 pages 2 to 7 code 01 2-10 pages 11, 12 code 01 2-30 pages 3, 4 code 01 5-02 pages 1, 3 code 01	Updated Abbreviations and Acronyms table. Included Belted Toilet Seat and removed limitation of the use of cockpit curtain during flight. Included Synthetic Vision System (SVS) limitation. Updated OPERA version for WINDOWS® 7 Operational System and included S/N 50500004.	AFM-2664 Revision 5 approved by ANAC on October 26, 2011.
6 JUL 05, 12	1-30 page 1 code 01	Updated Service Bulletin table.	AFM-2664 Revision 6 approved by ANAC on July 05, 2012.

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6 JUL 05, 12	2-10 pages 11 to 14 code 01	Included Side-Facing Divan.	AFM-2664 Revision 6 approved by ANAC on July 05, 2012.
	2-40 pages 1, 2 code 01, 3-02 page 1 code 01, 4-10 pages 3, 4 code 01, S-TOC page 1 code 01 and Supplement 3 code 01	Included FADEC version 4.3 (SB 505-73-0001).	
	3-01 pages 3 to 8 code 01 and AP1-23 page 1 code 01	Updated Static Dischargers information on normal procedures and CDL.	
	4-01 page 14 code 01 and 4-18 pages 1, 4 to 6 code 01	Included G1000 system version 0734.54.	
	4-24 page 3 code 01	Updated Antiskid Failure procedure.	

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7 APR 04, 13	1-30 page 1 code 01, 2-10 pages 2, 5 code 01, 3-03 page 2 code 01, 4-00 page 4 code 01, 4-01 pages 3, 9, 21 code 01, 4-08 pages 4, 8, 10, 12 code 01, 4-14 pages 3 to 5 code 01, 4-20 page 4 code 01, 4-22 pages 3 to 5, 7 code 01, 4-24 pages 3, 4 code 01, 4-28 page 4 code 01, 5-01 pages 1, 5 to 8 code 01, 5-02 pages 2, 3 code 01, 5-08 pages 1, 2 code 01, 5-18 page 4 code 01, 5-20 pages 1 to 6 code 01, 5-25 pages 1 to 28 code 01	Activation of the Flap FULL position.	AFM-2664 Revision 7 approved by ANAC on April 04, 2013.

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7 APR 04, 13	1-30 page 1 code 01, 2-05 pages 1, 2 code 01, 5-01 pages 5 to 7 code 01, 5-02 page 3 code 01, 5-08 pages 1, 2 code 01, 5-15 pages 1 to 58 code 01, 5-18 pages 2, 4 code 01, 5-20 pages 2 to 5 code 01, 5-25 pages 1 to 28 code 01	Increase on Some Aircraft's Maximum Operating Weights.	AFM-2664 Revision 7 approved by ANAC on April 04, 2013.
	2-00 page 1 code 01, 2-56 pages 2 to 12 code 01	Updated Garmin G1000 avionics system limitation.	
	2-36 pages 1, 2 code 01	Included Chinese fuel specification.	
	2-56 page 11 code 01	Included the Electronic Charts limitation.	

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7 APR 04, 13	4-04 page 9 code 01 S-TOC page 1 code 01 and Supplement 4 code 01	Updated Electronic Bay Overheat and Environmental Control System 1 (2) Valve Failure procedures. Operation with Garmin G3000 avionics system.	AFM-2664 Revision 7 approved by ANAC on April 04, 2013.
8 NOV 05, 13	1-20 pages 1 to 7 code 01, S-TOC page 1 code 01 and Supplement 5 code 01 2-10 page 13 code 01 4-04 page 10 code 01	Included Supplement 5 – Controller-to-Pilot Data Link Communication (CPDLC) Function. Updated Baggage Loading limitations. Updated Pressurization Auto Failure procedure.	AFM-2664 Revision 8 approved by ANAC on November 5, 2013.

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	4-24 page 4 code 01, 4-30 pages 3, 4, 6 code 01	Updated Emergency Brake Low Pressure, Smoke/Fire/ Fume and Baggage Smoke Failure procedures.	

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9 OCT 15, 14	1-00 page 1 code 01, 1-40 pages 1 to 4 code 01, 2-00 page 1 code 01, 2-56 pages 2 to 12 code 01 1-20 page 1 code 01, 3-00 page 1 code 01, 3-01 pages 3 to 10 code 01, 3-02 page 1 code 01, 4-01 pages 4, 8, 12 code 01, 4-04 pages 5 to 7, 9 code 01, 4-08 page 1 code 01, 4-12 page 3 code 01, 4-28 page 3 code 01, 5-01 page 2 code 01, S4-10 page 1 code 01	Updated GARMIN G1000 GNSS system approvals guidance. Updated the following procedures: External Inspection, Power Up, Before Start, After Start, Takeoff, Dual Engine Failure, Engine Fire, Severe Damage or Separation, Takeoff with Engine Failure at or above V_1, Bleed 1 (2) Leakage, Bleed 1 (2) Overpressure, Duct 1 (2) Overtemperature, ECS 1 (2) Valve Failure, Engine 1 (2) Fire, Pusher Failure and Pusher Off. Removed After Start procedure from Supplement 4.	AFM-2664 Revision 9 approved by ANAC on October 15, 2014.

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10 JUL 06, 15	1-00 page 2 code 01, 1-10 page 1 code 01, 1-20 page 3 code 01, 2-00 page 1 code 01, 2-56 pages 2, 6 code 01, 3-04 pages 2 to 4 code 01, 4-01 pages 4, 7, 10, 18, 23 code 01, 4-08 pages 3, 10 code 01, 4-10 page 3 code 01, 4-22 pages 3 to 5, 7 code 01	Updated Navigation and Communication Equipment limitations. Updated the following procedures: Ditching, Emergency Evacuation, Forced Landing, Partial or Gear Up Landing, Electrical Emergency, DC BUS 2 Off, Engine 1 (2) Failure, Anti-Ice Low Capacity, Anti-Ice Wing/Stabilizer Failure, Anti-Ice Wing/Stabilizer Leakage, Anti-Ice Wing/Stabilizer Inhibit. Updated the following procedures of operation in icing conditions: Before Takeoff, After Takeoff/Climb, Cruise, Descent or Approach.	AFM-2664 Revision 10 approved by ANAC on July 6, 2015.

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10 JUL 06, 15	1-30 page 1 code 01, 2-30 page 1 code 01, 4-01 page 11 code 01, S-TOC page 1 code 01	Updated Hydraulic limitation and Rejected Takeoff procedure.	AFM-2664 Revision 10 approved by ANAC on July 6, 2015.
	3-01 pages 5, 6 code 01, AP1-23 page 1 code 01	Updated External Inspection procedure and Configuration Deviation List (CDL).	
	4-08 pages 1, 6, 7 code 01	Updated starter generator related procedures.	
	5-01 pages 6, 7 code 01, 6-20 page 1 code 01	Updated Noise Levels and Compartments Balance Arm.	
	5-02 page 3 code 01	Updated OPERA software version.	

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11 SEP 15, 15	4-01 pages 1, 14, 15 code 01, 4-08 page 12 code 01, 4-20 page 4 code 01, 4-24 page 4 code 01	Included Emergency Braking Technique. Updated the following procedures: Emergency Bus Off, Hydraulic Low Pressure and Brake Failure.	AFM-2664 Revision 11 approved by ANAC on September 15, 2015.
	5-02 page 3 code 01, 5-25 pages 14 to 28 code 01	Updated OPERA software version and performance data.	
12 DEC 15, 15	1-30 page 1 code 01, 3-01 page 7 code 01	Updated battery cold soak minimum temperature operation on Power Up procedure.	AFM-2664 Revision 12 approved by ANAC on December 15, 2015.

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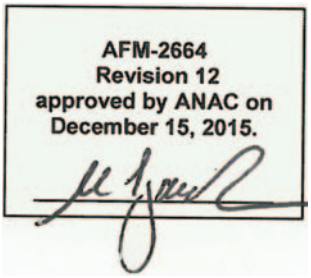
12 DEC 15, 15	1-30 page 1 code 01, 3-01 pages 8, 9 code 01, 4-14 pages 1, 5 code 01, S4-00 pages 1, 4, 7, 8 code 01, S4-05 pages 1, 6 code 01, S4-10 pages 1, 2, 6 code 01	Updated information related to Garmin G3000 load 13.25 avionics software. Updated the following Normal procedures: Power Up, After Start and Before Takeoff. Included procedures related to Rudder Gust Locked, Transponder Fail and Transponder in Standby. Included SurfaceWatch™ Limitations. Included Windshear Prevention/ Recovery procedures.	AFM-2664 Revision 12 approved by ANAC on December 15, 2015. 

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12 DEC 15, 15	2-10 pages 6, 7, 9 code 01, 3-01 pages 1, 2 code 01, 3-03 page 3 code 01, 6-30 page 6 code 01	Updated Kinds of Operation Equipment List. Updated the following Normal procedures: Cockpit/Cabin Safety Inspection and Leaving the Airplane. Updated the Miscellaneous Fluids table.	AFM-2664 Revision 12 approved by ANAC on December 15, 2015.
	4-04 page 10 code 01, 4-16 pages 6, 7 code 01, 4-30 pages 3, 5 code 01, S4-10 pages 5, 6 code 01	Changed the crew mask position from abbreviated form to full form on the following procedures: Pressurization Auto Failure, MFD Overheat, PFD 1 (2) Overheat, Smoke/Fire/ Fume, Smoke Evacuation, and GTC 1 (2) Overheat.	

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SECTION 1

GENERAL

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INTRODUCTION

This Airplane Flight Manual (AFM) meets certification requirements set by RBHA 23 and provides the approved information necessary to safely operate the PHENOM 300.

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REVISIONS

Embraer may periodically revise this manual as required to update information or provide information not available at the time of printing. Revised data may result from Embraer approved airplane modifications or from improved techniques gained through operational experience. Changes to the text are indicated by a vertical line on the outside margin of the page.

A vertical line adjacent to the page number will indicate relocated or rearranged text or illustrations.

A Log of Revisions can be found at the beginning of this Manual.

The basic issue date of this Manual is presented on the title page. The revisions to the basic Manual will be numbered sequentially (Rev. 1, 2, 3 and so forth). This also applies to pages revised by an earlier revision.

TEMPORARY REVISIONS

Temporary revisions may be issued when the need arises. The temporary revision will be clearly identified and will be replaced as soon as possible. Temporary revisions will not be included in the List of Effective Pages. A dedicated Log of Temporary Revisions is provided.

LIST OF EFFECTIVE PAGES

A List of Effective Pages for all the Sections is located at the beginning of this Manual. This list presents the date of issue for each page and it is revised with the Manual. Its purpose is to verify that the Manual is current.

ORGANIZATION

This Airplane Flight Manual is divided as follows:

- Section 1 - General
- Section 2 - Limitations
- Section 3 - Normal Procedures
- Section 4 - Emergency and Abnormal Procedures
- Section 5 - Performance
- Section 6 - Weight and Balance
- Supplements
- Appendices

The Sections and their use are explained below.

SECTION 1 – GENERAL

This Section contains general information pertaining to the Manual, such as the revision rules, its organization and a definition of terms.

SECTION 2 – LIMITATIONS

This Section contains airworthiness certification limitations.

The limitations restrict airplane operation in accordance with the airworthiness certificate.

SECTION 3 – NORMAL PROCEDURES

This Section contains the required normal procedures.

SECTION 4 – EMERGENCY AND ABNORMAL PROCEDURES

This Section contains the actions to be performed in the event of failures.

SECTION 5 – PERFORMANCE

This Section contains performance data and general information and configurations.

SECTION 6 – WEIGHT AND BALANCE

This Section provides instructions referring to the weighing and loading of the PHENOM 300 airplane.

SUPPLEMENTS

The Supplements provide the necessary additional information for the airplane operation, when equipped with optional systems and equipment not provided with the standard airplane, or when specific operational information is applicable to the airplane (e.g. ferry flights, special operation etc). Supplements may modify or complete the limitations, procedures or performance data of the basic AFM.

APPENDICES

Appendices may be incorporated in the AFM to provide additional information for the operation of the airplane, in a format that may not be the same as the basic AFM.

DEFINITION OF TERMS

The following definitions apply to the terms below:

WARNING: **OPERATING PROCEDURES, TECHNIQUES AND OTHER RELATED INFORMATION WHICH MAY RESULT IN PERSONAL INJURY OR LOSS OF LIFE, IF NOT FOLLOWED.**

CAUTION: OPERATING PROCEDURES, TECHNIQUES AND OTHER RELATED INFORMATION WHICH MAY RESULT IN DAMAGE OR DESTRUCTION OF EQUIPMENT, IF NOT FOLLOWED.

NOTE: Operating procedures, techniques and other related information which are considered essential to emphasize.

LAND AS SOON AS POSSIBLE

An emergency will be declared. A landing should be accomplished at the nearest suitable airfield considering the severity of the emergency, weather conditions, field facilities, ambient lighting, airplane gross weight and ATC guidance. Depending on the situation criticality and considering the occupants safety, a landing off the runway may have to be attempted.

LAND AS SOON AS PRACTICAL

The emergency conditions are less urgent, and although the flight is to be terminated, the degree of the emergency is such that an immediate landing at the nearest adequate airfield may not be necessary.

NO ICING

Atmospheric conditions are such that no ice formation is predicted or there is no perceptible ice formation on airplane surfaces.

IN ICING/WITH ICE

Atmospheric conditions may lead to ice formation or there is ice accreted on airplane surfaces.

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ABBREVIATIONS AND ACRONYMS USED

ABBREVIATIONS OR ACRONYMS	MEANING
°C	Degrees Celsius
°F	Degrees Fahrenheit
ft	Feet
hPa	Hectopascal
kg	Kilogram
kt	Knot
ℓ	Liter
lb	Pound
m	Meter
mph	Miles per Hour
psi	Pound per Square Inch
sec	Second
VA	Volt-Ampere
AC	Advisory Circular
ACJ	Advisory Circular Joint
ADC	Air Data Computer
ADF	Automatic Direction Finder
ADS	Air Data System
AEO	All Engines Operating
AFCS	Automatic Flight Control System
AFM	Airplane Flight Manual
AGL	Above Ground Level
AHRS	Attitude and Heading Reference System
A-I	Anti-Ice
ALT	Altitude
AMS	Air Management System

ABBREVIATIONS OR ACRONYMS	MEANING
ANAC	Agência Nacional de Aviação Civil
AOA	Angle of Attack
AP or A/P	Autopilot
ARINC	Aeronautical Radio, Incorporated
ARM	Armed
ASTM	American Society for Testing and Materials
ATC	Air Traffic Control
ATN	Aeronautical Telecommunication Network
ATN B1	ATN Baseline 1
ATR	Automatic Thrust Reserve
AUX	Auxiliary
BA	Balance Arms
BC	Back Course
BRNAV	Basic Area Navigation Standards
BS	Body Station
CAS	Crew Alerting System
CB	Circuit Breaker
CDI	Course Deviation Indicator
CG	Center of Gravity
COMM	Communication
CON	Continuous
CPDLC	Controller-to-Pilot Data Link Communication
CRS	Course
CSC	Current Speed Control
DC	Direct Current/Digital Controller

ABBREVIATIONS OR ACRONYMS	MEANING
DISAG	Disagree
DME	Distance Measurement Equipment
DR	Dead Reckoning
EFCU	Electronic Fuel Control Unit
EIS	Engine Indication System
ELT	Emergency Locator Transmitter
ENG	Engine
FAA	Federal Aviation Administration
FADEC	Full Authority Digital Engine Control
FAF	Final Approach Fix
FAR	Federal Aviation Regulations
FCSOV	Flow Control Shutoff Valve
FIREX	Fire Extinguisher
FL	Flight Level
FMA	Flight Mode Annunciation
FMS	Flight Management System
FPA	Flight Path Angle
FWD	Forward
GA	Go-Around
GFC	Garmin Flight Control
GIA	Garmin Integrated Avionics
GND	Ground
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GPU	Ground Power Unit
GS	Ground Speed

ABBREVIATIONS OR ACRONYMS	MEANING
HDG	Heading
HTR	Heater
ICAO	International Civil Aviation Organization
IESI	Integrated Electronic Standby Instrument
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
ISA	International Standard Atmosphere
ITT	Interturbine Temperature
KOEL	Kinds of Operation Equipment List
LDG	Landing
LEMAC	Leading Edge Mean Aerodynamic Chord
LFE	Landing Field Elevation
LH	Left Hand
LNAV	Lateral Navigation
LOC	Localizer
LP	Localizer Performance without Vertical Guidance
LPV	Localizer Performance with Vertical Guidance
LRN	Long Range Navigation
MAC	Mean Aerodynamic Chord
MAN	Manual
MAX	Maximum
MEA	Minimum Enroute Altitude
MEL	Minimum Equipment List
MFD	Multifunction Display

ABBREVIATIONS OR ACRONYMS	MEANING
MIL	Military
MIN	Minimum
MLG	Main Landing Gear
M_{MO}	Maximum Operating Mach
MNPS	Minimum Navigational Performance Specifications
M_{RA}	Maximum Recommended Turbulent Air Penetration Speed
N1	Fan Speed
N2	High Pressure Compressor Speed
NAT	North Atlantic
NAV	Navigation
NAVCOM	Navigation and Communication
NEXRAD	Next-Generation Radar
NLG	Nose Landing Gear
NPRV	Negative Pressure Relief Valve
OAT	Outside Air Temperature
OEI	One Engine Inoperative
OPERA	Optimized Performance Analyzer
OVHT	Overheat
PAX	Passenger
PBE	Protective Breathing Equipment
PFD	Primary Flight Display
PRNAV	Precision Area Navigation
PRSOV	Pressure Regulator Shutoff Valve
PRV	Pressure Relief Valve
QAV	Aviation Kerosene

ABBREVIATIONS OR ACRONYMS	MEANING
RAIM	Receiver Autonomous Integrity Monitoring
RBHA	Regulamento Brasileiro de Homologação Aeronáutica
RH	Right Hand
RNAV	Area Navigation System
RNP	Required Navigation Performance
RPM	Revolutions Per Minute
RVSM	Reduced Vertical Separation Minimum
SAT	Static Air Temperature
SBAS	Satellite Based Augmentation System
SDF	Simplified Directional Facility
STBY	Standby
SVS	Synthetic Vision System
SWPS	Stall Warning and Protection System
TA	Traffic Advisory
TAT	Total Air Temperature
TAWS	Terrain Awareness and Warning System
TGL	Temporary Guidance Leaflet
TIS	Traffic Information System
TO or T/O	Takeoff
TO/GA	Takeoff/Go-Around
TSO	Technical Standard Order
V	Volt/Vertical
V_1	Decision Speed
V_2	Takeoff Safety Speed
V_{AC}	Approach Climb Speed
V_{AP}	Approach Speed

ABBREVIATIONS OR ACRONYMS	MEANING
VDI	Vertical Deviation Indicator
VDL M2	VHF Digital Link Mode 2
V_{FE}	Maximum Flap Extended Speed
VFR	Visual Flight Rules
V_{FS}	Final Segment Speed
VHF	Very High Frequency
V_{LE}	Maximum Landing Gear Extended Speed
V_{LO}	Maximum Landing Gear Operating Speed
V_{LOF}	Lift-Off Speed
V_{MC}	Minimum Control Speed
V_{MO}	Maximum Operating Speed
VNAV	Vertical Navigation
V_O	Operating Maneuvering Speed
VOR	VHF Omnidirectional Range
V_R	Rotation Speed
V_{REF}	Landing Reference Speed
V_S	Stall Speed
VSI	Vertical Speed Indicator
WAAS	Wide Area Augmentation System
WAI	Wing Anti-Ice (N1 Ice Bug)
WOW	Weight on Wheels
WX	Weather
XBLEED	Crossbleed
XFEED	Crossfeed
YD	Yaw Damper

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SERVICE BULLETIN TABLE

The following table shows the Service Bulletins which affect the airplane operation and have been incorporated into AFM.

SB	SUBJECT	✓
SB 505-00-0001	Removal of icing limitation above 30000 ft.	
SB 505-00-0008	Operational weight increase.	
SB 505-24-0015	Replacement of the main battery 2.	
SB 505-25-0004	Belted toilet installation.	
SB 505-27-0011	Activation of the flap FULL position.	
SB 505-29-0005	Hydraulic accumulator replacement.	
SB 505-31-0001	Installation of G1000 load 43 (0734.27) avionics software and CMC load 9 software.	
SB 505-31-0004	Installation of G1000 load 54 (0734.54) avionics software and CMC load 10 software.	
SB 505-31-0005	Installation of G1000 load 63.7 (0734.6D) avionics software and CMC load 11 software.	
SB 505-31-0017	Installation of G3000 load 13.25 (1633.13) avionics software.	
SB 505-73-0001	New FADEC (Full Authority Digital Engine Control) software upgrade – version 4.3.	

NOTE: Check (✓) the accomplished Service Bulletins or equivalent modifications factory incorporated.

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GARMIN G1000 GLOBAL NAVIGATION SATELLITE SYSTEM (GPS/SBAS)

SYSTEM APPROVALS

The following table summarizes Garmin G1000 GNSS system approvals in the airplane, subject to the limitations described in section GARMIN GNSS (GPS/SBAS) NAVIGATION SYSTEM LIMITATIONS. Further details are also provided in the following paragraphs. These do not constitute operational approvals.

SYSTEM APPROVALS	GUIDANCE
GNSS Equipment	FAA AC 20-138A
RNP Operations in the U.S. NAS	FAA AC 90-105
U.S. RNAV 2 and RNAV 1	FAA AC 90-100A
RNP-10 (RNAV 10)	FAA Order 8400.12B
RNP-4	FAA Order 8400.33 FAA AC 20-138A
PRNAV/RNAV 1	TGL-10 Rev 1 FAA AC 90-96A
BRNAV/RNAV 5	EASA AMC 20-4 FAA AC 90-96A
RNP APCH	EASA AMC 20-27 FAA AC 90-105
LPV Approaches	EASA AMC 20-28 FAA AC 90-107
Baro-VNAV (Enroute and Terminal)	FAA AC 20-129

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GNSS EQUIPMENT (AC 20-138A)

- The Garmin GNSS navigation system installed in the airplane is a GPS system with a Satellite Based Augmentation System (SBAS) approved under TSO-C145a Class 3, TSO-C146a Class 3, and installed in accordance with AC 20-138A.
- The Garmin GNSS navigation system as installed in the airplane complies with the requirements of AC 20-138A and is approved for navigation using GPS and SBAS (within the coverage of a Satellite Based Augmentation System complying with ICAO Annex 10) for IFR enroute, terminal area, and non-precision approach operations (including those approaches titled "GPS", "or GPS", and "RNAV (GPS)" approaches). The Garmin GNSS navigation system installed in the airplane is approved for approach procedures with vertical guidance including "LPV" and "LNAV/VNAV" minimums, within the U.S. National Airspace System. The G1000 does not currently support baro-VNAV approaches and these approach modes are WAAS-based.

RNP OPERATIONS IN U.S. NAS (AC 90-105)

- The Garmin GNSS navigation system as installed in the airplane complies with the equipment requirements of AC 90-105 and meets the equipment performance and functional requirements to conduct RNP terminal departure and arrival procedures and RNP approach procedures without RF (radius to fix) legs. Part 91 subpart K and 135 operators require operational approval from the FAA.

RNAV 2 AND RNAV 1 (AC 90-100A)

- The Garmin GNSS navigation system as installed in the airplane complies with the equipment requirements of AC 90-100A for RNAV 2 and RNAV 1 operations. In accordance with AC 90-100A, Part 91 operators (except subpart K) following the airplane and training guidance in AC 90-100A are authorized to fly RNAV 2 and RNAV 1 procedures. Part 91 subpart K and 135 operators require operational approval from the FAA.

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RNP-10 (RNAV 10) (ORDER 8400.12B)

- The Garmin GNSS navigation system has been found to comply with the requirements for GPS Class II oceanic and remote navigation (RNP-10) without time limitations in accordance with AC 20-138A and FAA Order 8400.12B. The Garmin GNSS navigation system can be used without reliance on other long-range navigation systems. This does not constitute an operational approval.

RNP-4 (ORDER 8400.33)

- The Garmin GNSS navigation system as installed in the airplane complies with the navigation requirements for primary means of Class II navigation in oceanic and remote navigation (RNP-4) in accordance with AC 20-138A and FAA Order 8400.33. The Garmin GNSS navigation system can be used without reliance on other long-range navigation systems. Additional equipment may be required to obtain operational approval to utilize RNP-4 performance. This does not constitute an operational approval.

PRNAV (TGL-10/AC 90-96A) AND BRNAV (AMC 20-4/AC 90-96A)

- The Garmin GNSS navigation system as installed in the airplane complies with the accuracy, integrity, and continuity of function, and contains the minimum system functions required for PRNAV operations in accordance with TGL-10 Rev 1.
- The GNSS navigation system has two ETSO-145/TSO-C145a Class 3 approved, and ETSO-146/TSO-C146a Class 3. The Garmin GNSS navigation system as installed in the airplane complies with the equipment requirements for PRNAV (RNAV 1) and BRNAV (RNAV 5) operations in accordance with AC 90-96A, TGL-10 Rev 1 and AMC 20-4. This does not constitute an operational approval.

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RNP APCH (AMC 20-27/AC 90-105)

- The Garmin GNSS navigation system as installed in the airplane complies with the system requirements for RNP Approaches (RNP APCH) without vertical guidance (LNAV only) as per AMC 20-27 (Airworthiness Approval and Operational Criteria for RNP Approach (RNP APCH) Operations Including APV BARO-VNAV Operations) and AC 90-105 (Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System). The G1000 currently does not support baro-VNAV approaches and LNAV/VNAV approaches are SBAS based.

LPV APPROACHES (AMC 20-28/AC 90-107)

- The Garmin GNSS navigation system as installed in the airplane complies with the system requirements for LPV Approaches as per AMC 20-28 (Airworthiness Approval and Operational Criteria for RNAV GNSS approach operation to LPV minima using SBAS) and AC 90-107 (Guidance for Localizer Performance with Vertical Guidance and Localizer Performance without Vertical Guidance Approach Operations in the U.S. National Airspace System).

ENROUTE/TERMINAL BARO-VNAV (AC 20-129)

- G1000 Barometric VNAV function is approved for enroute and terminal descents, as per AC 20-129. Descent guidance is provided up to the FAF waypoint when there is not a procedure that provides vertical guidance following the FAF. Guidance is provided up to the waypoint preceding the FAF (FAF-1) when there is a procedure that provides vertical guidance (ILS or SBAS based) following the FAF. The G1000 does not currently support baro-VNAV approaches and LNAV/VNAV approaches are SBAS-based.

SECTION 2

LIMITATIONS

TABLE OF CONTENTS

INTRODUCTION

This airplane must be operated in accordance with the limitations presented in this Section. These limitations also apply to operations in accordance with an approved Supplement or Appendix to this AFM, except as altered by such Supplement or Appendix.

The safety and integrity of the airplane and its occupants is highly dependent on the compliance with the operating limitations. Flight crew is the primary responsible for such compliance and so should have all the limitations committed to memory. Some limitations, however, may be too complex to memorize, thus requiring an AFM consultancy. Such limitations are the following:

- Limitations which are automatically complied with by the airplane systems;
- Limitations associated to more than one parameter and that constantly varies in time;
- Tables;
- Charts.

WEIGHT

AIRPLANE MODEL	MAX Ramp Weight (MRW) (kg)	MAX Takeoff Weight (MTOW) (kg)	MAX Landing Weight (MLW) (kg)	MAX Zero Fuel Weight (MZFW) (kg)
PHENOM 300 (1)	8390	8340	7730	6450
PHENOM 300 (2)	8200	8150	7650	6350

NOTE: 1) Applicable to airplanes Post-Mod. SB 505-00-0008 or with an equivalent modification factory incorporated.

NOTE: 2) Applicable to airplanes Pre-Mod. SB 505-00-0008.

To comply with the performance and operating limitations of the regulations, the maximum allowable takeoff and landing operational weights may be equal to, but not greater than design limits.

The takeoff weight (weight at brake release or at start of takeoff run) is the lowest of the MTOW or the following weights:

- Maximum takeoff weight as calculated using the Simplified Takeoff Analysis Tables or using the OPERA software and as limited by runway length, altitude, temperature, tire speed, brake energy and climb requirements.
- Maximum takeoff weight, as limited by enroute, and landing operating requirements.

The landing weight is the lowest of the MLW or the following weight:

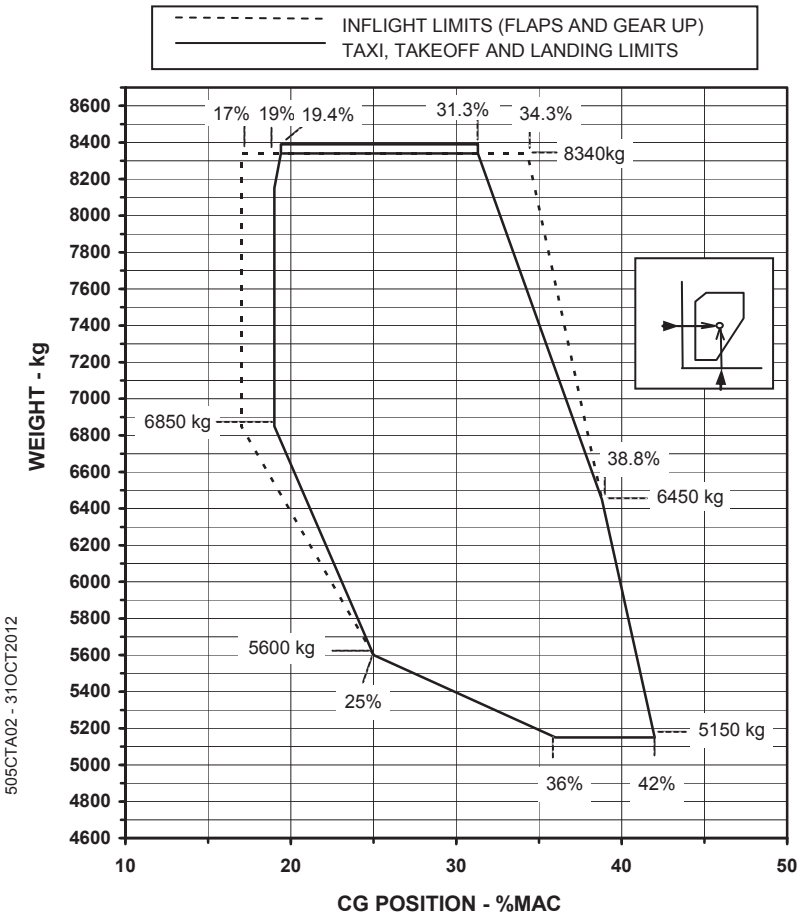
- Maximum approach and landing weight as calculated using the Landing Tables or using the OPERA software and as limited by runway length, altitude, temperature, tire speed, brake energy, approach climb, and landing climb requirements.

LOADING

The airplane must be loaded in accordance with the information contained in the Section 6, Weight and Balance.

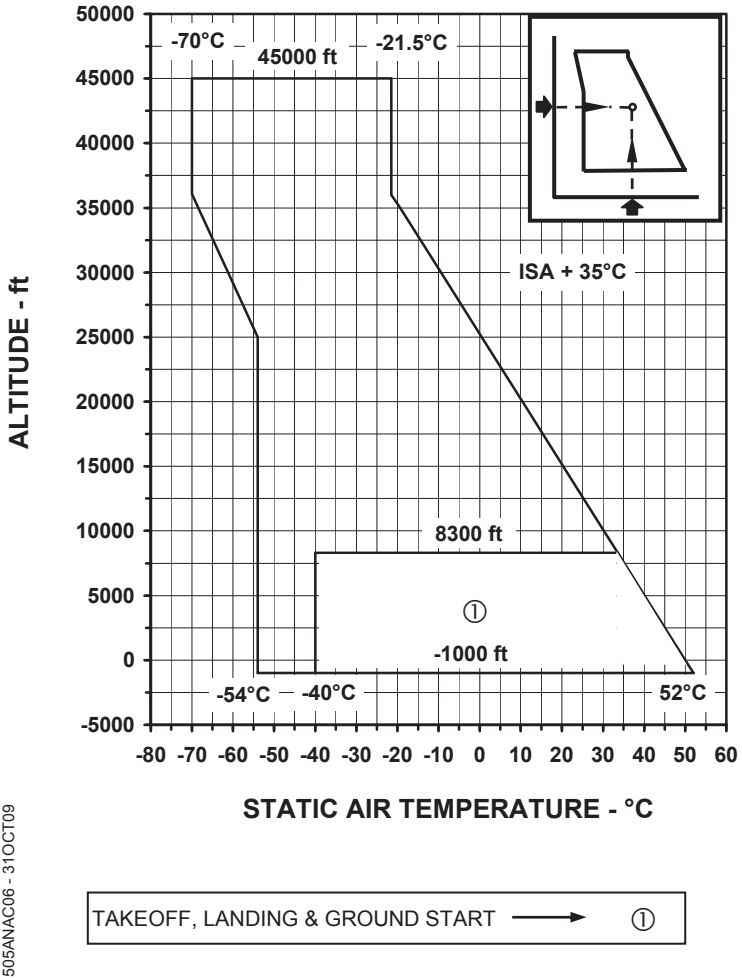
CENTER OF GRAVITY ENVELOPE

PHENOM 300



OPERATIONAL LIMITATIONS

OPERATIONAL ENVELOPE



NOTE: In the event of a landing below -40°C, report to the maintenance personnel.

AIRSPEEDS

LANDING GEAR OPERATION/EXTENDED SPEED (V_{LO} AND V_{LE})

V_{LO} ..... 250 KIAS

V_{LO} is the maximum speed at which the landing gear can be safely extended and retracted.

V_{LE} ..... 250 KIAS

V_{LE} is the maximum speed at which the airplane can be safely flown with the landing gear extended and locked.

MINIMUM CONTROL SPEEDS (V_{MC})

For takeoff:

- V_{MC} ..... 97 KIAS

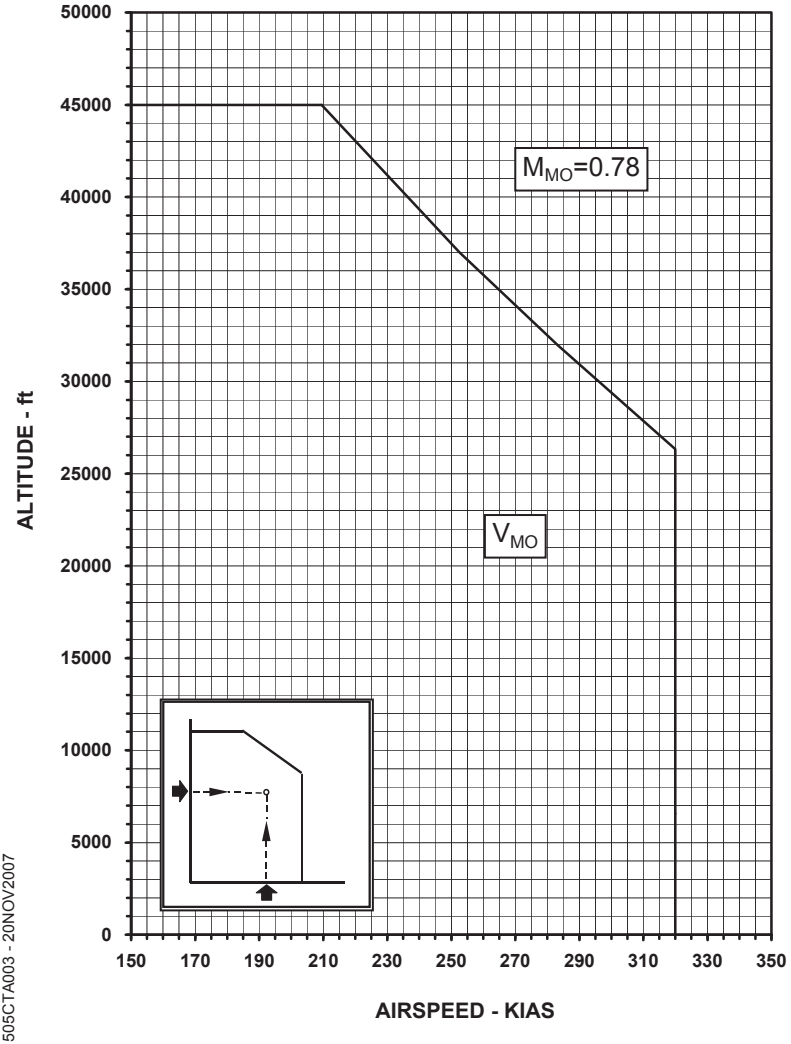
NOTE: The V_{MC} above represents the highest value to be found within the takeoff envelope. Specific V_{MC} may be obtained through the OPERA as a function of altitude, temperature, weight and according to the takeoff flaps.

For landing:

- V_{MC} (no icing conditions)..... 91 KIAS
- V_{MC} (icing conditions)..... 95 KIAS

NOTE: V_{MC} is the airspeed at which, when the critical engine is suddenly made inoperative, it is possible to maintain control of the airplane with that engine still inoperative, and thereafter maintain level flight at the same speed with an angle of bank of not more than 5 degrees.

MAXIMUM OPERATING SPEED (V_{MO}/M_{MO})



NOTE: V_{MO}/M_{MO} may not be deliberately exceeded in any regime of flight (climb, cruise or descent), unless a higher speed is authorized for flight test or pilot training.

OPERATING MANEUVERING SPEED (V_O)

V_O ..... 205 KIAS

NOTE: - Maneuvers that involve angle of attack near stall or full application of rudder, elevator, and aileron controls should be confined to speeds below V_O. In addition, the maneuvering flight load factor limits, presented in this Section, should not be exceeded.

- Maneuvers are limited to any maneuver incident to normal flying, stalls (except whip stalls) and steep turns in which the angle of bank is not more than 60 degrees.

CAUTION: RAPID AND LARGE ALTERNATING CONTROL INPUTS, ESPECIALLY IN COMBINATION WITH LARGE CHANGES IN PITCH, ROLL, OR YAW (E.G. LARGE SIDESLIP ANGLES) MAY RESULT IN STRUCTURAL FAILURES AT ANY SPEED, EVEN BELOW V_O.

MAXIMUM FLAP EXTENDED SPEED (V_{FE})

Flap 1 ..... 180 KIAS
Flap 2 ..... 170 KIAS
Flap 3 ..... 170 KIAS
Flap FULL ..... 160 KIAS

MAXIMUM ALTITUDE FOR FLAPS EXTENDED

Maximum Altitude for Flaps Extended ..... 18000 ft

MAXIMUM TIRE GROUND SPEED

Maximum Tire Ground Speed ..... 182 kt

MANEUVERING

No acrobatic maneuvers, including spins, are authorized.

MANEUVERING FLIGHT LOAD FACTORS

These corresponding accelerations limit bank angle during turns and limit pull-up maneuvers.

LOAD FACTOR LIMIT	FLAP 0	FLAP DOWN (1, 2, 3 AND FULL)
Positive	3.00 g	2.00 g

MINIMUM CREW

Minimum Flight Crew ..... 1 PILOT

NOTE: - The pilot must occupy the left cockpit seat.

- Operating rules may require an operative autopilot or a second pilot in command.

KINDS OF OPERATION

This airplane may be flown day and night in the following conditions, when the appropriate equipment and instruments required by airworthiness and operational requirements are approved, installed and in an operable condition as defined in the KINDS OF OPERATION EQUIPMENT LIST:

- Visual Flight Rules (VFR);
- Instrument Flight Rules (IFR);
- Icing conditions (below 30000 ft for airplanes Pre-Mod. SB 505-00-0001; up to 45000 ft for airplanes Post-Mod. SB 505-00-0001 or with an equivalent modification factory incorporated);
- Extended over water *.

* For extended over water operation, operating rules may require additional equipment. Such equipment must be properly approved.

KINDS OF OPERATION EQUIPMENT LIST

The following equipment list identifies the systems and equipment upon which type certification for each kind of operation was predicted. The systems and items of equipment listed must be installed and operable for the particular kind of operation indicated, unless the airplane is approved to be operated in accordance with a current Minimum Equipment List (MEL) approved by the Local Authority.

The following systems and equipment list does not include all specific flight, emergency and radio-navigation equipment required by local operating rules. It also does not include components obviously required for the airplane to be airworthy such as wings, primary flight controls, empennage, engines, control panels etc.

KINDS OF OPERATION EQUIPMENT LIST (KOEL)

OPERATION: DAY VFR	
1) INSTALLATIONS	
System	**Function/Equipment**
Environmental/Pressurization	AMS Controller
Environmental/Pressurization	Pressure Relief Valve (PRV)
Environmental/Pressurization	Negative Pressure Relief Valve (NPRV)
Environmental/Pressurization	Outflow Valve
Environmental/Pressurization	Pressurization Control
Environmental/Pressurization	Flow Control Shutoff Valves (FCSOV)
Environmental/Pressurization	Pressure Regulating Shutoff Valves (PRSOV)
Electrical	Starter Generators
Electrical	Batteries
Fire Protection	Portable Fire Extinguishers
Fire Protection	Engine Fire Detection System
Fire Protection	Engine Fire Extinguisher System
Fuel	Fuel Ejector Pumps
Fuel	Fuel Shutoff Valves
Hydraulics	Hydraulic Systems
Landing Gear	Brake Systems
Landing Gear	Steering System
Landing Gear	Landing Gear Emergency Operation System
Lights	Anti-Collision Lights

KINDS OF OPERATION EQUIPMENT LIST (KOEL)

OPERATION: DAY VFR	
1) INSTALLATIONS (Continued)	
System	**Function/Equipment**
Flight Instruments/Navigation	Air Data System (ADS)
Flight Instruments/Navigation	Attitude and Heading Reference System (AHRS)
Oxygen	Oxygen System
Miscellaneous	ELT
Miscellaneous	Seat Belts
Miscellaneous	Hand Microphone
Miscellaneous	Water Barrier

KINDS OF OPERATION EQUIPMENT LIST (KOEL)

OPERATION: DAY VFR	
2) INSTRUMENTS/INDICATIONS	
System	**Function/Equipment**
Environmental/Pressurization	Pressurization Indications (Cabin Altitude, Rate and Delta Pressure, Landing Field Elevation)
Electrical	Batteries Voltage Indications
Flight Controls	Flap Position Indication
Fuel	Fuel Quantity Indications
Hydraulics	Hydraulic Pressure Indications
Landing Gear	Landing Gears Position Indications
Flight Instruments/Navigation	Primary Flight Displays (PFD) (Airspeed Indication, Altitude Indication, Heading Indication, Warning Caution and Advisory Function)
Flight Instruments/Navigation	Integrated Electronic Standby Instrument (IESI) (Airspeed Indication, Altitude Indication, Heading Indication)
Flight Instruments/Navigation	Multi-Function Display (MFD)
Flight Instruments/Navigation	Magnetic Compass
Engine	Engine Indications (Oil Pressure and Temperature, Fuel Flow, ITT, N1, N2)
Warning	Aural Warning System
Warning	Takeoff Warning System
Miscellaneous	Approved Airplane Flight Manual (AFM)
Miscellaneous	Embraer Prodigy Cockpit Reference Guide

KINDS OF OPERATION EQUIPMENT LIST (KOEL)

OPERATION: NIGHT VFR	
INSTALLATIONS	
System	**Function/Equipment**
All equipment/indications required for day VFR	
Lights	Instruments Lights
Lights	Position Lights
Lights	Landing/Taxi Lights
Lights	Courtesy Lights
Lights	Flash Light
Flight Instruments/Navigation	Attitude Indication

OPERATION: IFR	
INSTALLATIONS AND INDICATIONS	
System	**Function/Equipment**
All equipment/indications required for day VFR	
All equipment/indications required for night VFR (for night flights)	
Ice Protection	Pitot/Static-ADS Heating System
Flight Instruments/Navigation	Slip-Skid Indication
Flight Instruments/Navigation	Clock

KINDS OF OPERATION EQUIPMENT LIST (KOEL)

OPERATION: ICING CONDITIONS	
INSTALLATIONS	
System	**Function/Equipment**
All equipment/indications required for IFR	
Environmental/Pressurization	Cockpit Fan
Ice Protection	Wing and Horizontal Stabilizer Anti-Icing System
Ice Protection	Engine Anti-Icing System
Ice Protection	Windshield Heating System
Lights	Wing Inspection Light *

* Only required for night operations.

MAXIMUM PASSENGER SEATING

Maximum passenger seating configuration, including the right cockpit seat:

SEATING CONFIGURATION	INTERIOR DESCRIPTION			MAXIMUM PASSENGER NUMBER
	7^{TH} SEAT	BELTED TOILET SEAT	SIDE-FACING DIVAN	
STANDARD	NO	NO	NO	7
OPTION 1	NO	YES	NO	8
OPTION 2	YES	NO	NO	8
OPTION 3	YES	YES	NO	9
OPTION 4	NO	NO	YES	9
OPTION 5	NO	YES	YES	10

NOTE: - A passenger may occupy the right cockpit seat only in single pilot operations.

- The belted toilet seat is installed through SB 505-25-0004 or is factory incorporated.
- For airplanes with belted toilet, the lavatory rigid door must be latched OPEN for taxi, takeoff and landing when occupied.
- For airplanes without belted toilet, the use of the lavatory is prohibited for taxi, takeoff and landing.
- One extra passenger oxygen mask is provided on the passenger cabin and it is accessible from any of the four face-to-face seats.

COCKPIT AND PASSENGER CABIN

- Pilot sunvisors must be kept at the vertical position when in use and must be stowed for taxi, takeoff and landing.
- The cockpit curtain must be latched OPEN during taxi, takeoff and landing.

BAGGAGE LOADING

Maximum loading:

LH Forward Cabinet ..... 20 kg
Lavatory Cabinet ..... 15 kg
Aft Baggage Compartment ..... 210 kg
Forward Baggage Compartment ..... 50 kg
Refreshment Center ..... 32 kg
Side-Facing Divan Stowage Compartments ..... 16.5 kg

NOTE: - The maximum intensity of loading in each compartment is the following:

- Aft Baggage Compartment ..... 341 kg/m^2
- Forward Baggage Compartment ..... 108 kg/m^2

- Transportation of flammable material defined according to ICAO 9284-AN/905 Class 2.1 (flammable gases), Class 3 (flammable liquid) and Class 4 (flammable solid) is prohibited in the Forward Baggage Compartment.
- Some airplanes have stowage compartments of LH Forward Cabinet, Lavatory Cabinet, Refreshment Center and Aft Baggage Compartment with higher load capacities. Refer to their respective placards to find this information.
- The Side-Facing Divan Stowage Compartments Net must be latched during all phases of flight.

RUNWAY

Runway Slope..... -2% TO +2%
Runway Surface Type ..... PAVED

WIND LIMITATIONS

Maximum Takeoff and Landing Tailwind Component ..... 10 kt

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HYDRAULIC

For airplanes Pre-Mod. SB 505-29-0005, the hydraulic system accumulator pre-charge must be checked every 15 days or before next flight, whichever occurs last.

WARNING

STALL WARNING AND PROTECTION

The stall warning and protection system must be tested prior each flight.

TERRAIN AWARENESS AND WARNING SYSTEM (TAWS)

TAWS displays terrain and obstructions relative to the altitude of the airplane. The following applies:

- Navigation must not be predicated upon the use of the TAWS.

NOTE: The terrain display is intended to serve as a situational awareness tool only. It may not provide either the accuracy or fidelity, or both, on which to solely base decisions and plan maneuvers to avoid terrain or obstacles.

- To avoid giving unwanted alerts, the TAWS must be inhibited when landing at an airport that is not included in the airport database.
- Pilots are authorized to deviate from their current ATC clearance to the extent necessary to comply with TAWS warnings.
- Terrain database coverage is worldwide. However the Terrain data is not displayed when the airplane latitude is greater than 75°N or 60°S.
- The MSL altitude indication on upper right-hand corner of terrain awareness page must not be used for navigation, especially for maintaining an assigned ATC altitude.
- ILS approaches with manually overridden frequency or course information are prohibited only for airplanes equipped with TAWS-A and G1000 system version 0734.25.

TRAFFIC COLLISION AND AVOIDANCE SYSTEM (TCAS) II

The following limitations are applicable to the Traffic Alert and Collision Avoidance System (TCAS):

- Deviation from the ATC assigned altitude is authorized only to extent necessary to comply with a TCAS Resolution Advisory (RA).
- Maneuvers must not be based solely on information presented in the traffic display.

TRAFFIC INFORMATION SYSTEM (TIS) (IF APPLICABLE)

TIS is not intended to be used as a collision avoidance system and does not relieve the pilot of the responsibility to "see and avoid" other airplane.

TIS shall not be used for avoidance maneuvers during Instrument Meteorological Conditions (IMC) or when there is no visual contact with the intruder airplane.

NOTE: TIS is available only when the airplane is within the service volume of a TIS-capable terminal radar site.

SATELLITE WEATHER RADIO SYSTEM (XM WEATHER) (IF APPLICABLE)

XM Weather information must not be used for hazardous weather penetration. Weather information is provided only for hazardous weather avoidance.

NEXRAD weather data is intended for long-range planning purposes only. Due to inherent delays and relative age of the data, NEXRAD weather data should not be used for short-range avoidance of hazardous weather.

CONNEXT WEATHER (WORLDWIDE WEATHER) (IF APPLICABLE)

Connext Weather (Worldwide Weather) is intended for long-range planning purposes only. Due to inherent delays and relative age of the data, Worldwide Weather should not be used for short range avoidance hazardous weather.

SYNTHETIC VISION SYSTEM (SVS) (IF APPLICABLE)

SVS is intended to be used as an aid to situational awareness only.

Use of SVS as primary information to base decisions and/or plan maneuvers to navigate, or to avoid terrain, obstacles or traffic is prohibited.

The SVS does not assure IFR operations below published minimums.

SVS DATABASES

The SVS databases have an area of coverage as detailed below:

- The Terrain Database has an area of coverage from North 75° Latitude to South 60° Latitude in all longitudes.
- The Airport Terrain Database coverage is worldwide. Not all airfields are depicted in the SVS.
- The Obstacle Database is limited to the United States and Europe.

The terrain data has a resolution of 9 arc-seconds, this means that the terrain elevation contours in the database are stored broken down into squares 9 arc-seconds on each side.

SVS PATHWAYS

Pathways provide a three-dimensional perspective view of the selected route of flight and its presentation is intended only to aid the pilot's awareness of the programmed flight path location relative to the airplane's current position.

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The pathway is not intended for use as a primary reference in tracking the navigation path, thus, it does not substitute standard course and altitude deviation information provided by the CDI, VSI, and VDI.

The Pathway boxes are ± 100 ft in vertical plane and approximately ± 380 ft horizontally from the center of the box.

The pathway is only displayed for navigation paths that are fully defined by the sensor in use, including GPS and ILS paths.

No vertical Pathway information is presented for climbs or for navigation paths that are not fully defined by the sensor in use, like heading legs, VOR, LOC, BC or ADF segments.

ELECTRICAL

BATTERY VOLTAGE

Minimum Voltage for Engine Start..... 24 V

NOTE: Minimum GPU voltage for battery charging is 27 V.

GENERATOR LOAD

Maximum Generator Load:

On ground..... 330 A EACH

In flight ..... 390 A EACH

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FUEL

AIRPLANE MODEL	PHENOM 300
Maximum usable quantity per tank	1512 ℓ (1214 kg)
Unusable quantity per tank	14 ℓ (11 kg)

NOTE: - Maximum fuel capacity is 3052 ℓ (2450 kg).

- The maximum permitted imbalance between tanks is 125 ℓ (100 kg).
- Unusable fuel increases to 25 ℓ (20 kg) in each tank if any of the associated ejector fuel pump is inoperative.
- When EIS fuel quantity is zero, any fuel remaining in the tanks can not be used safely in flight.
- The weights above have been determined using an adopted fuel density of 0.803 kg/ℓ. Different fuel densities may be used provided the volumetric limits are not exceeded.

FUEL SPECIFICATION

Brazilian Specification CNP08-QAV-1
ASTM Specification ..... D1655-JET A AND JET A-1
Military Specification MIL-DTL-83133-JP8
Chinese Specification ..... GB6537-2006 N°3 JET FUEL

NOTE: - Last issues of Standard Specifications must be used.

- For fuel additives see Aircraft Maintenance Manual.

FUEL TANK TEMPERATURE

Minimum.....-37°C
Maximum (on ground)..... 52°C

NOTE: Fuel tank temperature may be exceeded in flight, limited to 80°C.

CROSSFEED VALVE OPERATION

XFEED Knob must be set to OFF during takeoff and landing.

POWER PLANT

ENGINES

Two Pratt & Whitney Canada PW535E.

OPERATIONAL LIMITS

NOTE: Applicable to airplanes Post-Mod. SB 505-73-0001 or equipped with FADEC software version 4.3 and on. For airplanes Pre-Mod. SB 505-73-0001 refer to Supplement 3.

OPERATING CONDITION		OPERATING LIMITS				
Thrust Setting	Time Limit	Maximum ITT (°C)	N2 (%)	N1 (%)	Oil Pressure (psid) (1)	Oil Temperature (°C) (5)
Maximum	10 minutes (3)	725	101	100	45 to 160	10 to 132.2
Takeoff	5 minutes (2)	700	101	100	45 to 160	10 to 132.2
Maximum Continuous (4)	N/A	680	101	100	45 to 160	10 to 132.2
Maximum Climb (4)	N/A	680	101	100	45 to 160	10 to 132.2
Ground Idle	N/A	N/A	Minimum 55.1 (OEI) Minimum 51.2 (AEO)	-	25 to 160	-40 to 132.2
Flight Idle	N/A	N/A	55.1	-	25 to 160	-
Starting	5 seconds	765	-	-	-	-40 Minimum
Transient	20 seconds	765	103	102	0 to 20	-
	200 seconds	-	-	-	-	140.5 Maximum
	400 seconds	-	-	-	20 to 270	-

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NOTE: 1) For N2 speeds above 60% the oil pressure below 45 psid is undesirable and should be tolerated only for the completion of the flight, preferably, at reduced power setting.

NOTE: 2) Normal take-off ratings are limited to 5 minutes duration.

NOTE: 3) Maximum take-off is intended for emergency situations with one engine inoperative with anti-ice on. Total of 10 minutes is allowed for any combination of maximum take-off thrust and normal take-off thrust.

NOTE: 4) Maximum climb is the maximum rating for climb phase under normal operation. Maximum continuous is automatically selected when an OEI event is detected by the FADEC.

NOTE: 5) For operation in severe cold environments, following engine start, it is permissible to operate the engine up to 70% N2, in order to warm the oil to the minimum temperature for normal operation (above 10°C).

NOTE: 6) In case of any unrecoverable engine surge lasting more than 5 seconds, a boroscope inspection to be performed in accordance to the PW535E Maintenance Manual.

CROSSWIND LIMITATION

Static takeoff power application on ground is limited to crosswind components up to 18 kt.

STARTER LIMITS

MOTORING NUMBER	COOL-DOWN TIME
1	60 seconds
2	60 seconds
3	15 minutes
4	30 minutes

NOTE: After four sequential motorings, cycle may be repeated following a 30 minute cool-down period.

OIL SPECIFICATION

Refer to the Approved Lubrication Oils list of the Pratt & Whitney Canada PW535E Maintenance Manual.

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PNEUMATIC, AIR CONDITIONING AND PRESSURIZATION

AIR CONDITIONING

For air conditioning system operation on ground the GPU must be used or one engine generator must be turned on.

PRESSURIZATION

Maximum Differential Pressure ..... 9.4 psi
Maximum Differential Overpressure ..... 9.6 psi
Maximum Differential Negative Pressure ..... -0.3 psi
Maximum Differential Pressure for
Takeoff and Landing ..... 0.2 psi

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ICE AND RAIN PROTECTION

Crew must activate the ice protection system when icing conditions exist or are anticipated, as per Section 3, Normal Procedures.

OPERATION IN ICING CONDITIONS

Maximum Takeoff and Landing Altitude ..... 10000 ft

Minimum Airspeed:

- Wing and Stabilizer Anti-Ice System Inhibited (flap and gear up) ..... 165 KIAS
- Wing and Stabilizer Anti-Ice System Armed (flap and gear up) ..... 165 KIAS
- Wing and Stabilizer Anti-Ice System Uninhibited (flap and gear up)..... 150 KIAS

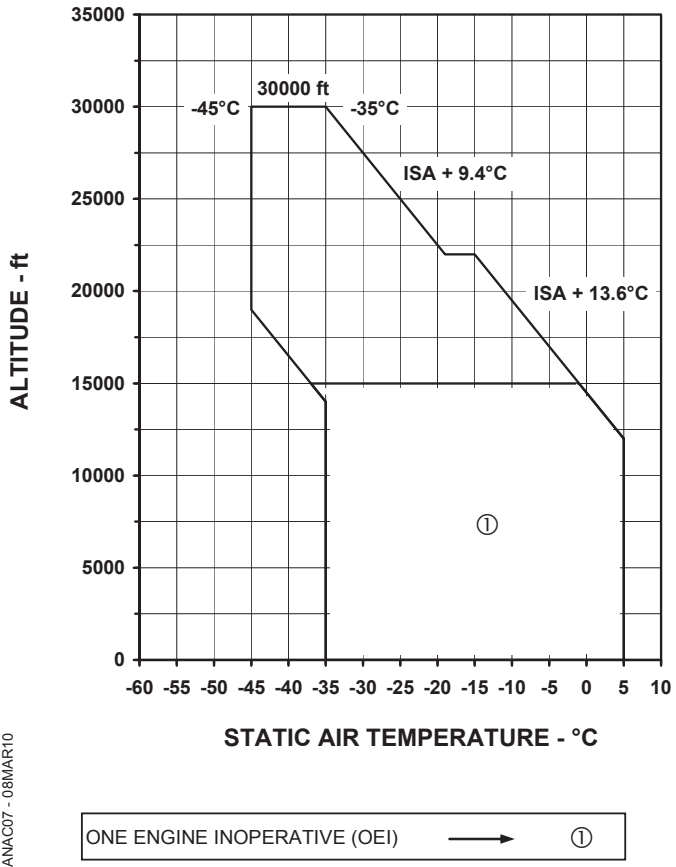
FOR AIRPLANES PRE-MOD. SB 505-00-0001

Maximum Altitude for Operation:

AEO ..... 30000 ft
OEI ..... 15000 ft

Minimum Temperature for Landing ..... -33°C

WING AND STABILIZER ANTI-ICE SYSTEM OPERATIONAL ENVELOPE



NOTE: Wing and Stabilizer Anti-Ice system is auto-inhibited outside its operational envelope.

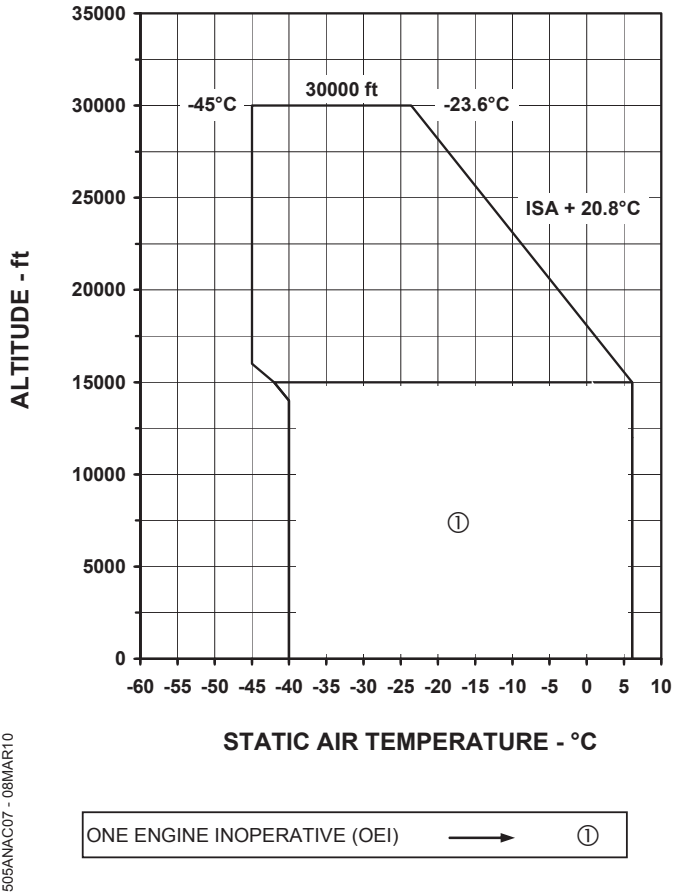
FOR AIRPLANES POST-MOD. SB 505-00-0001 OR WITH AN EQUIVALENT MODIFICATION FACTORY INCORPORATED

Maximum Altitude for Operation:

AEO ..... 45000 ft
OEI..... 15000 ft

Minimum Temperature for Landing ..... -38°C

WING AND STABILIZER ANTI-ICE SYSTEM OPERATIONAL ENVELOPE



NOTE: Wing and Stabilizer Anti-Ice system is auto-inhibited outside its operational envelope.

NOTE: - For airplanes Pre-Mod. SB 505-31-0005: If outside Wing and Stabilizer Anti-Ice system operational envelope the A-I WINGSTB INHB caution message will be presented. Follow its associated procedure (Section 4, Emergency and Abnormal Procedures).

- For airplanes Post-Mod. SB 505-31-0005 or with an equivalent modification factory incorporated:
  - If outside Wing and Stabilizer Anti-Ice system operational envelope below 30000 ft the A-I WINGSTB INHB caution message will be presented. Follow its associated procedure (Section 4, Emergency and Abnormal Procedures).
  - If above 30000 ft, the A-I WINGSTB ARM advisory message will be presented. Follow its associated procedure (Section 4, Emergency and Abnormal Procedures).
- Icing conditions may exist whenever the Static Air Temperature (SAT) on the ground or for takeoff, or Total Air Temperature (TAT) in flight, is 10°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 or ice crystals).
- Icing conditions may also exist when the SAT on the ground and for takeoff is 10°C or below when operating on ramps, taxiways, or runways where surface snow, ice, standing water, or slush may be ingested by the engines, or freeze on engines, nacelles, or engine sensor probes.
- Ice speed must not be reset until all ice has been removed.
- In icing conditions the airplane must be operated, and its ice protection systems used as described in the operating procedures section of this manual. Where specific operational speeds and performance information have been established for such conditions, this information must be used.

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- Take-off is prohibited with frost (polished or not), ice, snow or slush adhering to wings, control surfaces, engine inlets, or other critical surfaces.
- The airplane must exit SLD (Super Cooled Large Droplet) icing conditions environment. SLD conditions will be recognized by ice formation aft of protected surfaces or in areas that are not normally observed to collect ice.
- Flight in freezing drizzle or freezing rain is prohibited. If the airplane encounters conditions that are determined to contain freezing rain or freezing drizzle, the pilot must immediately exit the freezing rain or freezing drizzle conditions by changing altitude or course. Such conditions may be identified by the following visual cues:
  - Unusually extensive ice accreted on the airframe in areas not normally observed to collect ice.
  - Accumulation of ice on the upper surface of the wing aft of the protected area.
- There are many methods to ensure the wing is clear of ice. If visual inspection does not indicate wing contamination, a tactile (hands on surface) check of the wing leading edge and the upper surface must be accomplished prior to takeoff. The tactile check must also be performed when the holdover time is exceeded after airplane de/anti-icing fluids have been applied. This check must be performed whenever the outside temperature is less than 6°C or if it cannot be ascertained that the wing fuel temperature is above 0°C, and there is visible moisture, or:
  - Water is present on the wing; or
  - When difference between the dew point and the outside air temperature is 3°C or less; or
  - The atmospheric conditions have been conducive to frost formation.

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- Since the autopilot can mask tactile cues that indicate adverse changes in handling characteristics, the pilot should consider not using the autopilot when any ice is visible on the airplane. Autopilot use is prohibited in the following conditions:
  - Severe icing;
  - Unusual control force or control deflection, or unusually large control forces to move flight controls when the autopilot is disconnected periodically for checking purposes; or
  - Indications of frequent autopilot re-trimming during straight and levelled flight.

CAUTION: ON GROUND, DO NOT RELY ON VISUAL ICING EVIDENCE TO TURN ON THE ANTI-ICING SYSTEM. USE THE TEMPERATURE AND VISUAL MOISTURE CRITERIA AS SPECIFIED ABOVE. DELAYING THE USE OF THE ANTI-ICING SYSTEM UNTIL ICE BUILD-UP IS VISIBLE FROM THE COCKPIT MAY RESULT IN ICE INGESTION AND POSSIBLE ENGINE DAMAGE OR FLAMEOUT.

AUTOPILOT/YAW DAMPER

Minimum Engagement Height (dual engine) ..... 600 ft AGL
Minimum Engagement Height (single engine) ..... 1000 ft AGL
Minimum Use Height (dual engine) ..... 195 ft AGL
Minimum Use Height (single engine) ..... 220 ft AGL
Altitude Loss (maneuvering/cruise) ..... 160 ft

Airplane is approved for CAT I approaches. This statement does not grant operational approval to conduct CAT I operations.

Yaw Damper OFF airspeed is limited to 180 KIAS if in icing conditions.

NAVIGATION AND COMMUNICATION EQUIPMENT

ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS)

The airplane must not operate in the regions stated on the table below:

MAGNETIC CUT-OUT REGIONS	LATITUDE	LONGITUDE
North	North of 72°N	All
	North of 70°N	Between 70°W and 128°W and Between 85°E and 114°E
	North of 65°N	Between 75°W and 120°W
South	South of 55°S	Between 120°E and 165°E
	South of 70°S	All

NOTE: Alternative procedures must be established for dispatch if the indication GEO LIMITS is displayed.

GARMIN G1000 AVIONICS SYSTEM

Refer to Garmin – Embraer Prodigy™ Flight Deck 300 Pilot's Guide for further information on system characteristics. The Garmin G1000 avionics system has the following limitations:

- Use of VNAV is prohibited during the intermediate segment of an approach that includes a teardrop course reversal.
- Dead Reckoning Mode use is available only in enroute (ENR) or oceanic (OCN) phases of flight. During DR the CDI is removed. The estimated navigation data supplied by the system in this condition must not be used as a sole means of navigation.
- The fuel quantity, fuel required, fuel remaining and gross weight estimate functions of the G1000 presented in AUX-WEIGHT PLANNING and AUX-TRIP PLANNING pages of MFD are supplemental information only and must be confirmed by the flight crew prior to use.

GARMIN G1000 GLOBAL NAVIGATION SATELLITE SYSTEM (GPS/SBAS)

SYSTEM LIMITATIONS

The pilot must confirm at system initialization that the Navigation database is current.

Navigation database is expected to be current for the duration of the flight. If the AIRAC cycle will change during flight, the pilot must ensure the accuracy of navigation data, including suitability of navigation facilities used to define the routes and procedures for flight. If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

GPS/SBAS based IFR enroute, oceanic, and terminal navigation is prohibited unless the pilot verifies and uses a valid, compatible, and current Navigation database or verifies each waypoint for accuracy by reference to current approved data.

Discrepancies that invalidate a procedure shall be reported to Garmin International. The affected procedure is prohibited from being flown using data from the Navigation database until a new Navigation database is installed in the airplane and verified that the discrepancy has been corrected.

For flight planning purposes, in areas where SBAS coverage is not available, the pilot must check RAIM availability. This requirement is not necessary if SBAS coverage is confirmed to be available along the entire route of flight.

For flight planning purposes, operations within the U.S. National Airspace System on RNP and RNAV procedures when SBAS signals are not available, the availability of GPS integrity RAIM shall be confirmed for the intended route of flight. In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended route of flight, the flight should be delayed, canceled, or rerouted on a track where RAIM requirements can be met.

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For flight planning purposes for operations within European B-RNAV and P-RNAV airspace, if more than one satellite is scheduled to be out of service, then the availability of GPS integrity RAIM shall be confirmed for the intended flight (route and time). In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended flight, the flight should be delayed, canceled, or rerouted on a track where RAIM requirements can be met.

For flight planning purposes, operations where the route requires Class II navigation, the airplane's operator or pilot-in-command must use the Garmin WFDE Prediction program to demonstrate that there are no outages on the specified route that would prevent the Garmin GNSS navigation system to provide primary means of Class II navigation in oceanic and remote areas of operation that requires RNP-10 or RNP-4 capability. If the Garmin WFDE Prediction program indicates fault exclusion (FDE) unavailability will exceed 34 minutes in accordance with FAA Order 8400.12B for RNP-10 requirements, or 25 minutes in accordance with FAA Order 8400.33 for RNP-4 requirements, then the operation must be rescheduled when FDE is available.

Both Garmin GPS navigation receivers must be operating and providing GPS navigation guidance to their respective PFD for operations requiring RNP-4 performance.

North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace operations per AC 91-49 and AC 120-33 require both GPS/SBAS receivers to be operating and receiving usable signals except for routes requiring only one Long Range Navigation sensor. Each display computes an independent navigation solution based on the on-side GPS sensor. However, either display will automatically revert to the cross-side sensor if the on-side sensor fails or if the cross-side sensor is determined to be more accurate. A "BOTH ON GPS1" or "BOTH ON GPS2" message does not necessarily mean that one GPS has failed. Refer to the MFD AUX-GPS STATUS page to determine the state of the unused GPS.

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Whenever possible, RNP and RNAV routes including Standard Instrument Departures (SIDs) and Obstacle Departure Procedures (ODPs), Standard Terminal Arrival (STAR), and enroute RNAV "Q" and RNAV "T" routes should be loaded into the flight plan from the database in their entirety, rather than loading route waypoints from the database into the flight plan individually. Selecting and inserting individual named fixes from the database is permitted, provided all fixes along the published route to be flown are inserted. Manual entry of waypoints using latitude/longitude or place/bearing is prohibited.

"GPS", "or GPS", and "RNAV (GPS)" instrument approaches using the Garmin navigation systems are prohibited unless the pilot verifies and uses the current Navigation database. GPS based instrument approaches must be flown in accordance with an approved instrument approach procedure that is loaded from the Navigation database.

Not all published Instrument Approach Procedures (IAP) are in the Navigation database. Pilots planning on flying an RNAV instrument approach must ensure that the Navigation database contains the planned RNAV Instrument Approach Procedure and that approach procedure must be loaded from the Navigation database into the FMS flight plan by its name.

IFR non-precision approach approval using the GPS/SBAS sensor is limited to published approaches within the U.S. National Airspace System. Approaches to airports in other airspace are not approved unless authorized by the appropriate governing authority.

The navigation equipment required to join and fly an instrument approach procedure is indicated by the title of the procedure and notes on the IAP chart. Use of the Garmin GPS/SBAS receivers to provide navigation guidance during the final approach segment of an ILS, LOC, LOC-BC, LDA, SDF, MLS or any other type of approach not approved for "or GPS" navigation is prohibited. When using the Garmin VOR/LOC/GS receivers to fly the final approach segment, VOR/LOC/GS navigation data must be selected and presented on the CDI of the pilot flying.

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Navigation information is referenced to the WGS-84 reference system, and should only be used where the Aeronautical Information Publication (including electronic data and aeronautical charts) conform to WGS-84 or equivalent.

When using GPS/NAV mode to intercept the final approach course, monitor the flight director transition to LOC/GS. If the transition does not occur automatically, manually select HDG mode and CDI source to LOC in order to intercept the final approach course.

OPERATIONAL LIMITATIONS

The Garmin – Embraer Prodigy™ Flight Deck 300 Cockpit Reference Guide must be available to the flight crew whenever navigation is predicated on the use of the system.

Advisory vertical guidance deviation information is only an aid to help pilots comply with altitude restrictions. When using advisory vertical guidance, the pilot must use the primary barometric altimeter to ensure compliance with all altitude restrictions, particularly during instrument approach operations.

For flight planning purposes in European airspace, flight crew should ensure sufficient means are available to navigate and land at the destination or at an alternate aerodrome in the case of loss of RNP APCH airborne capability. In particular, the flight crew should check that:

- a non-RNP APCH procedure is available at the alternate, where a destination alternate is required.
- at least one non-RNP APCH procedure is available at the destination aerodrome, where a destination alternate is not required.

For flight planning purposes in European airspace, flight crew should ensure sufficient means are available to navigate and land at the destination or at an alternate aerodrome in the case of loss of LPV airborne capability. In particular, the flight crew should check that:

- a non-RNAV GNSS based procedure is available at the alternate (where a destination alternate is required) unless the airspace authority does not require such requirement.

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- at least one non-RNAV GNSS based procedure is available at the destination aerodrome (where a destination alternate is not required) unless the airspace authority does not require such requirement.

For flight planning purposes, operations within the Brazilian airspace using GNSS requires that the availability of GPS integrity RAIM be confirmed before departure and before entrance to each phase of flight. When the RAIM is not available, other type of navigation must be used or the schedule of the flight must be changed until the RAIM is available again.

Enroute operations within the Brazilian airspace under instrument flight rules require that the airplane has the basic equipment for air navigation appropriate for the route to be flown. Such equipment shall be used compulsorily, when there is an integrity alarm and on the portion of the route where the function RAIM is supposed to be unavailable.

Airplane accomplishing GNSS SIDs or GNSS STARs within the Brazilian airspace must have their basic navigation equipment tuned on the appropriate frequencies, so as to provide fast and safe transition in the case of occurrence of RAIM alarm. In case that there is prevision of unavailability of the RAIM function during the flight period, only the basic equipment of air navigation shall be used.

For airplane accomplishing GNSS approach procedures within the Brazilian airspace the pilot must assure that the air navigation aids needed to the aerodrome operations at the alternative aerodrome are available. Pilot must designate an alternative aerodrome that offers an approach procedure in operation based in conventional air navigation aids.

Localizer Performance (LP) approach procedures are not allowed.

HF (IF INSTALLED)

Do not rely on ADF indications shown on the PFD while transmitting in HF.

ELECTRONIC DISPLAY SYSTEM

ELECTRONIC CHARTS

The own-ship position symbol presented in the electronic charts is intended to improve pilot positional awareness. Do not use it as the basis for maneuvering.

The airplane must be dispatched with adequate backup documentation.

The electronic charts functions airworthiness approval alone does not constitute operational approval.

ELECTRONIC CHECKLIST

Operational approval is required in order to load database into the airplane and use the electronic checklist.

SECTION 3

NORMAL PROCEDURES

TABLE OF CONTENTS

INTRODUCTION

The normal procedures contained in this manual have been developed and recommended by the manufacturer and approved by the certification authorities for use during the operation of the PHENOM 300 airplanes.

Indented explanations (lines beginning further from the margin than the others) follow previous items and provide further information.

* Items marked with an asterisk (*) need to be accomplished before the first flight of the day.

COCKPIT/CABIN SAFETY INSPECTION

Emergency Door Locking Pin ..... REMOVE

Emergency Door ..... SECURED AND LOCKED

Documents, Manuals and Charts ..... CHECK ON BOARD

Maintenance Status ..... CHECK

Emergency Equipment ..... CHECK

Verify Fire Extinguisher, Flashlight, First Aid Kit, Water Barrier and the following optional items, if installed: Protective Breathing Equipment (PBE), Smoke Goggles, Over Water Life Vest and Survival Kit.

Oxygen Bottle Valve Handle ..... PUSH TO RESTORE

SUPPLY CONTROL Knob ..... PAX AUTO

Oxygen Mask Regulator ..... CHECK 100%

ELECTRICAL Panel ..... CHECK

Check BATT 1 & 2 Switches in the OFF position. BUS TIE Knob and GEN 1 & 2 Switches in the AUTO position and set GPU Button as required and check.

BLEED 1 & 2 Switches ..... AUTO

XBLEED Knob ..... AUTO

TEST Panel ..... OFF

Circuit Breakers ..... CHECK

If any circuit breaker is not IN, investigate the cause prior to resetting.

FUEL PUMP 1 & 2 Switches ..... AUTO

XFEED Knob ..... OFF

HYD PUMP SOV 1 & 2 Switches ..... OPEN

ELT Switch ..... ARMED

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PUSHER CUTOUT Button..... PUSHED OUT

Gust Lock Pin..... REMOVE

Rudder Pedals ..... CHECK
UNLOCKED

HEATING Panel..... CHECK
Check WSHLD 1 & 2 Switches in the OFF position and ADS PROBES Knob in the AUTO position.

ICE PROTECTION Panel ..... CHECK
Check ENG 1 & 2 Switches, WINGSTAB and INSP LIGHT Switches in the OFF position.

LDG GEAR Lever ..... DN

PRESSURIZATION Panel ..... CHECK
Check Pressurization MODE Switch in the AUTO position, ECS Knob in the BOTH position and DUMP Button pushed out.

AIR CONDITIONING Panel ..... AS REQUIRED

ENG FIRE EXTINGUISHER Panel..... CHECK
Check SHUTOFF 1 & 2 Buttons pushed out and BOTTLE Switch in the OFF position.

Start/Stop Knobs..... STOP

Flap Lever ..... ZERO

SPEED BRAKE Switch ..... CLOSE

Parking Brake ..... SET

NOTE: If parking brake pressure is suspected to be low, use wheel chocks to secure the airplane.

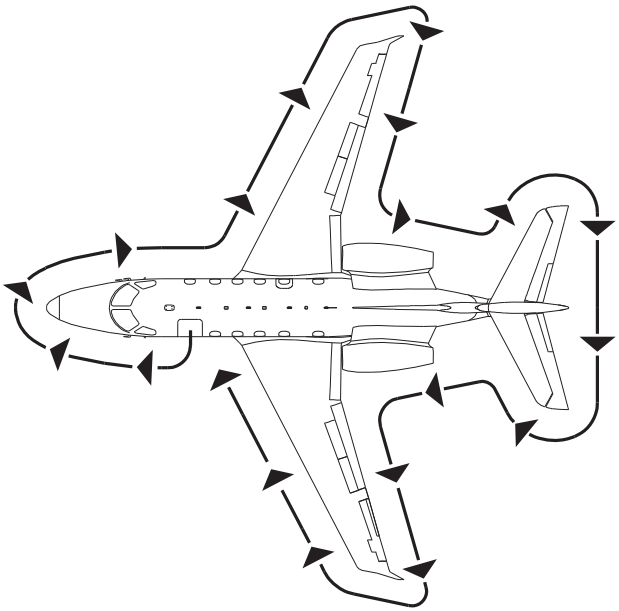
Seats and Belts..... CONDITION

EXTERNAL INSPECTION

External Lights ..... CHECK

Turn the lights OFF immediately after check them to avoid batteries discharge.

Recommended Walk-Around sequence:



EM500ENAOM140228B.DGN

IASP ..... CONDITION, NO OBSTRUCTION

Oxygen Discharge Indicator ..... GREEN DISK IN PLACE

Ice Detector (if installed) ..... CHECK

Antennas ..... CONDITION

Red Beacon Light ..... CONDITION

NLG Doors, Wheel and Tire ..... CONDITION

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NLG Torque Link	CONNECTED AND SECURED
NLG Safety Pin	REMOVED
Forward LH Baggage Compartment Door	LATCHED
Radome	CONDITION
Forward RH Baggage Compartment Door	LATCHED
IASP	CONDITION, NO OBSTRUCTION
Stand-By Pitot Tube	CONDITION, NO OBSTRUCTION
Refueling Panel	CLOSED
LDG/Taxi Lights	CONDITION
Fuselage Air Inlet	NO OBSTRUCTION
Engine Fan	CONDITION
Engine Air Inlet	NO OBSTRUCTION
Starter/Generator Air Inlets	CLEAR
* Fuel Drains	DRAIN AND CHECK FOR CONTAMINATION

CAUTION: USING AN INADEQUATE TOOL TO ACCOMPLISH THE FUEL DRAINAGE MAY CAUSE DAMAGE TO THE DRAIN VALVE.

Fuel Drains and Dump Valves	NO LEAKS
Right Wing Leading Edge	CONDITION
MLG Doors, Wheels, Brakes and Tires	CONDITION
MLG Safety Pin	REMOVED

(Continues on the next page)

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Fuel Cap	CLOSED AND LOCKED
Fuel Tank Air Inlet	NO OBSTRUCTION
Navigation/Strobe Lights	CONDITION
Right Winglet	CONDITION
Right Winglet Static Dischargers	NUMBER (2) AND CONDITION
Right Aileron	CHECK FREE
Right Aileron Static Dischargers	NUMBER AND CONDITION

NOTE: Verify 2 or 3 static dischargers on each aileron, according to airplane configuration.

Right Spoilers	CONDITION
Right Flap	CONDITION
Battery Access Door	LATCHED
Cowlings	LATCHED
Engine Exhausts	CLEAR
Drain Masts	CONDITION
Engine Oil Level	CHECK
Heat Exchanger Air Exhaust	CLEAR
Pylon (air exhaust)	CONDITION
Vertical Stabilizer	CONDITION
Rudder	CONDITION
Rudder Static Dischargers	NUMBER (2) AND CONDITION
Yaw Trim Tab	CONDITION
Horizontal Stabilizer	CONDITION

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Elevator	CONDITION
Pitch Trim Tab	CONDITION
Elevators Static Dischargers	NUMBER (4) AND CONDITION
Antennas	CONDITION
Ventral Rudder	CONDITION
Air Exhausts	NO OBSTRUCTION
Engine Exhaust	CLEAR
Aft Baggage Compartment Door	LATCHED
Pylon (air exhaust)	CONDITION
Cowlings	LATCHED
Drain Masts	CONDITION
Engine Oil Level	CHECK
DC Power Receptacle	CHECK
Hydraulic Reservoir Access Door	LATCHED
Left Flap	CONDITION
Left Spoilers	CONDITION
Left Aileron	CHECK FREE
Left Aileron Static Dischargers	NUMBER AND CONDITION

NOTE: Verify 2 or 3 static dischargers on each aileron, according to airplane configuration.

Roll Trim Tab	CONDITION
Navigation/Strobe Lights	CONDITION
Left Winglet	CONDITION
Left Winglet Static Dischargers	NUMBER (2) AND CONDITION

(Continues on the next page)

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Fuel Tank Air Inlet..... NO OBSTRUCTION

Left Wing Leading Edge ..... CONDITION

Fuel Cap ..... CLOSED AND LOCKED

MLG Doors, Wheels, Brakes and Tires..... CONDITION

MLG Safety Pin..... REMOVED

LDG/Taxi Lights ..... CONDITION

Wing Inspection Light ..... CONDITION

Fuselage Air Inlet..... NO OBSTRUCTION

Engine Fan ..... CONDITION

Engine Air Inlet ..... NO OBSTRUCTION

Starter/Generator Air Inlets..... CLEAR

POWER UP

BATT 1 & 2 Switches..... ON

NOTE: - For airplanes Pre-Mod. SB 505-24-0015: If the battery has been cold soaked for 2 hours or longer at ambient temperature of -10°C (14°F) or lower, it must be pre-heated to above -10°C (14°F) prior to engine start.

- For airplanes Post-Mod. SB 505-24-0015 or with an equivalent modification factory incorporated: If the battery has been cold soaked for 2 hours or longer at ambient temperature of -18°C (-0.4°F) or lower, it must be pre-heated to above -18°C (-0.4°F) prior to engine start.

GPU Button (if applicable)..... AS REQUIRED

Verify AVAIL light illuminated before pushing the GPU Button in. When GPU is not available or is not necessary, maintain GPU Button pushed out.

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CVDR Panel ..... CHECK
Set the toggle Switch to TEST HOLD 5 SEC position and hold for 5 seconds. Verify no fail indication on CVDR panel annunciators.

Transponder/TCAS II (if applicable) ..... CHECK
Verify transponder mode as required by local rules.
If airplane is equipped with TCAS II, set TCAS II in STBY mode.

BEFORE START

Oxygen Mask Flow and Microphone ..... CHECK
Set MASK MIC Switch to the ON position and press TEST/RESET Button. Set MASK MIC Switch to the OFF position.

TEST Panel ..... TEST
Test Fire Protection, Smoke Detector and Annunciator.

SIGNS/OUTLET Switch ..... BELTS/ON

External Lights ..... AS REQUIRED

EMER LT Switch ..... ARM

Fuel Quantity and Balance ..... CHECK

Oxygen Pressure ..... CHECK MINIMUM FOR DISPATCH

ENG IGNITION Switches ..... AUTO

Thrust Levers ..... IDLE

Parking Brake ..... SET

Doors ..... CLOSED

ENGINE START

Associated Start/Stop Knob ..... START, THEN RUN

Engine Parameters ..... MONITOR
Check N2, ITT, N1 and oil pressure within operational limits.

Repeat the sequence for the other engine.

AFTER START

GPU (if applicable) ..... DISCONNECT

ELEC EMER Button..... PUSH IN

Battery 1 & 2 Voltage..... CHECK

CAUTION: EACH BATTERY VOLTAGE MUST BE AT LEAST 23.5 VOLTS.

ELEC EMER Button..... PUSH OUT

Stall Protection System (TEST panel)..... TEST

AFCS Control Unit ..... SET

Engine Takeoff Data ..... SET

OAT ..... SET

ATR..... ON OR OFF

Landing Field Elevation ..... SET

Takeoff Speeds (V_1, V_R, V_2, V_{FS}) ..... SET

Transponder/TCAS II (if applicable) ..... SET

Set CODE and verify transponder mode as required by local rules. If airplane is equipped with TCAS II, set TCAS II in STBY mode.

Altimeters (pilots and IESI) ..... SET & X-CHECK

Flight Controls..... CHECK FREE

Trims..... CHECK/SET

Verify that Roll, Yaw and Pitch (NORM and BKP) trims are operating properly in both directions. Adjust Yaw and Roll trims to the neutral position and Pitch trim to Takeoff (green band).

Flap..... SET FOR TAKEOFF

External Lights ..... AS REQUIRED

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Ice Protection ..... AS REQUIRED

WARNING: **IF ICING CONDITIONS EXIST OR ARE FORECAST, REFER TO OPERATION IN ICING CONDITIONS PROCEDURE.**

BEFORE TAKEOFF

Takeoff Configuration ..... CHECK
Press the T/O CONFIG Button on the central console and check if the aural TAKEOFF OK sounds.

CAS Messages ..... CHECK

SIGNS/OUTLET Switch ..... PED-BELTS/OFF

Yaw Damper ..... OFF

----------SHORTLY BEFORE TAKEOFF----------

Passengers ..... ADVISE

Lights ..... AS REQUIRED

TAKEOFF

Thrust Levers ..... TO/GA

NOTE: After checking thrust levers in TO/GA, check N1 equal to N1 target and green ATR indication presented on MFD if ATR ON is selected.

Engine Parameters ..... MONITOR

At V_R rotate the airplane according to the table below.

FLAP POSITION	1	2
PITCH ANGLE	10.5°	8°

With positive rate of climb:

LDG GEAR Lever ..... UP

Airspeed ..... V_2 + 10 KIAS MINIMUM

AFTER TAKEOFF/CLIMB

LDG GEAR Lever ..... CHECK UP

Flap ..... ZERO
Retract flap in a speed at or below to the Maximum Flap Extended Speed (V_{FE}) for each position.

Thrust Levers ..... CON/CLB

Altimeters (pilots and IESI) ..... SET & X-CHECK

Yaw Damper ..... ON

Icing Conditions ..... VERIFY

----------ABOVE 10000 ft----------

SIGNS/OUTLET Switch ..... AS REQUIRED

External Lights ..... AS REQUIRED

Weather Radar (if installed) ..... AS REQUIRED

Airspeed ..... AS REQUIRED

DESCENT

Windshield Heating ..... ON

Pressurization ..... CHECK LFE

Landing Speeds ..... SET
Set V_{REF}, V_{AC} and V_{FS}.

Icing Conditions ..... VERIFY

----------BELOW 10000 ft----------

SIGNS/OUTLET Switch ..... PED-BELTS/OFF

APPROACH

External Lights ..... AS REQUIRED

Passengers ..... ADVISE

XFEED Knob ..... OFF

Altimeters (pilots and IESI) ..... SET & X-CHECK

Icing Conditions ..... VERIFY

BEFORE LANDING

Yaw Damper ..... OFF

LDG GEAR Lever ..... DN AND CHECK

Flap ..... SET FOR LANDING

Airspeed ..... V_{REF}

LANDING

Thrust Levers ..... IDLE

Brakes (after touchdown) ..... APPLY MAXIMUM

GO-AROUND

TO/GA Button.....PRESS

Thrust Levers .....TO/GA

Rotate the airplane following the flight director guidance or according to the table below.

LANDING FLAP POSITION	GO-AROUND PITCH ANGLE
3	8°
FULL	6°

Select flaps according to the table below.

LANDING FLAP POSITION	GO-AROUND FLAP POSITION
3	1
FULL	2

With positive rate of climb:

LDG GEAR Lever .....UP

Minimum Airspeed .....V_{AC}

At the acceleration altitude proceed as in a normal takeoff.

AFTER LANDING

Flap .....ZERO

Lights.....AS REQUIRED

Transponder.....AS REQUIRED

SHUTDOWN

Thrust Levers ..... IDLE

Emergency/Parking Brake ..... APPLY

CAUTION: MAINTAIN IDLE FOR AT LEAST 2 MINUTES PRIOR TO ENGINE SHUTDOWN.

HEATING Panel ..... CHECK
Check WSHLD 1 & 2 Switches in the OFF position and ADS PROBES Knob in the AUTO position.

ICE PROTECTION Panel ..... CHECK
Check ENG 1 & 2, WINGSTAB and INSP LIGHT Switches in the OFF position.

Start/Stop Knobs ..... STOP

MFD Status Pages ..... CHECK
Check MFD status page for engine message.

SIGNS/OUTLET Switch ..... OFF/ON

LEAVING THE AIRPLANE

Oxygen Bottle Valve Handle ..... PULL TO CUTOUT

EMER LT Switch ..... OFF

BATT 1 & 2 Switches ..... OFF

Gust Lock Pin ..... INSTALL

Rudder Pedals ..... LOCK

Lights ..... OFF

INTENTIONALLY BLANK

OPERATION IN ICING CONDITIONS

Icing conditions may exist whenever the Static Air Temperature (SAT) on the ground or for takeoff, or Total Air Temperature (TAT) in flight, is 10°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 or ice crystals).

Icing conditions may also exist when the SAT on the ground and for takeoff is 10°C or below when operating on ramps, taxiways, or runways where surface snow, ice, standing water, or slush may be ingested by the engines, or freeze on engines, nacelles, or engine sensor probes.

The procedures below complement or change the remaining procedures presented in this Section.

WARNING: EVEN IF THE ICE DETECTOR IS INSTALLED, THE FLIGHT CREW STILL HAS THE PRIMARY RESPONSIBILITY TO DETERMINE WHEN TO ACTIVATE ICE PROTECTION SYSTEM.

NOTE: - If necessary, set the CKPT FAN Switch to HI position to avoid fog on the cockpit side window.

- The A-I WINGSTB INHB caution message and A-I WINGSTB ARM advisory message may be presented during operation in icing conditions. If the message is presented, refer to the associated procedure in Section 4, Emergency and Abnormal Procedures.

BEFORE START

ADS PROBES Knob ..... ON

NOTE: It is recommended to turn on the system immediately before engine start.

BEFORE TAKEOFF

NOTE: Contamination check of wing upper surface and leading edge must be performed for takeoff.

With engines running check the ice protection system as follows:

WSHLD 1 and WSHLD 2 Switches ..... ON
The CAS messages WSHLD 1 (2) HTR FAIL must not be displayed.

WSHLD 1 and WSHLD 2 Switches ..... OFF

ENG 1 and ENG 2 Switches..... ON
The CAS messages A-I E1 (2) ON must be displayed (after 10 seconds).

ENG 1 and ENG 2 Switches..... OFF
The CAS messages must disappear.

BLEED 1 and BLEED 2 Switches..... AS REQUIRED

WINGSTAB Switch ..... ON
The CAS message A-I WINGSTB ARM or A-I WINGSTB INHB may be displayed.

WINGSTAB Switch ..... OFF
The CAS message A-I WINGSTB ARM or A-I WINGSTB INHB must disappear.

If ice detector is available:

TEST Panel Knob ..... ICE PROT

START TEST Button ..... PRESS
The CAS messages ICE CONDITION must be displayed.

After completing a successful test:

If SAT is between 5°C and 10°C with visible moisture:

ENG 1 and ENG 2 Switches..... ON

WINGSTAB Switch ..... OFF

WSHLD 1 and WSHLD 2 Switches ..... OFF

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If SAT is below 5°C with visible moisture:

ENG 1 and ENG 2 Switches ..... ON

WINGSTAB Switch..... ON

WSHLD 1 and WSHLD 2 Switches..... ON

ADS PROBES Switch..... AUTO

WARNING: TAKEOFF MUST NOT BE PERFORMED WITH CAS MESSAGE A-I WINGSTB INHB PRESENTED. REFER TO THE ASSOCIATED PROCEDURE IN SECTION 4, EMERGENCY AND ABNORMAL PROCEDURES.

AFTER TAKEOFF/CLIMB, CRUISE, DESCENT OR APPROACH

The crew must activate the ice protection system when flying in icing conditions or if icing conditions are forecasted as follows:

If TAT is between 5°C and 10°C with visible moisture:

ENG 1 and ENG 2 Switches ..... ON

WINGSTAB Switch..... OFF

WSHLD 1 and WSHLD 2 Switches..... OFF

If TAT is below 5°C with visible moisture, or at the first sign of ice accretion anywhere on the airplane, or ICE CONDITION message is displayed (if applicable), whichever occurs first:

ENG 1 and ENG 2 Switches ..... ON

WINGSTAB Switch..... ON

WSHLD 1 and WSHLD 2 Switches..... ON

NOTE: - Check the CAS message for proper system activation.

- In-flight, the windshield is the best indication of early ice formation detection. If the airplane is not flying in icing condition, no ice is building up in the windshield and if the windshield heater is not required for defog, leave the WSHLD 1 (2) Switches OFF, turning it ON when required.

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After leaving ice conditions and if there is no ice accretion on the airplane:

ENG 1 and ENG 2 Switches ..... OFF

WINGSTAB Switch ..... OFF

WSHLD 1 and WSHLD 2 Switches ..... OFF

WINGSTAB Switch ..... ICE SPEED RESET

WARNING: THE ICE PROTECTION SYSTEM MUST BE KEPT ON AND ICE SPEED MUST NOT BE RESET UNTIL CREW IS CERTAIN ALL ICE HAS BEEN REMOVED.

HOLDING CONFIGURATION

LDG GEAR Lever ..... UP

Flap ..... UP

Recommended airspeed:

Above 30000 ft ..... 165 KIAS MINIMUM

Below 30000 ft ..... 150 KIAS MINIMUM

DEMONSTRATED CROSSWIND

The maximum demonstrated crosswind component for takeoff is 25 kt and for landing is 28 kt. This value is not considered to be limiting.

NOTE: - For crosswind takeoff it may be necessary to use the lateral control to prevent the wing at the wind side from rising.

- For crosswind landings the "de-crab" technique shall be accomplished.

TURBULENT AIR PENETRATION

Turn on the fasten seat belts signs and adjust airspeed. Set thrust for penetration and avoid large thrust variations. Set trim for target speed and do not change it.

Use attitude indicator as the primary instrument. Allow altitude and airspeed to vary and maintain attitude. Avoid abrupt and large control inputs.

NOTE: Do not extend flap except for approach and landing.

MAXIMUM RECOMMENDED TURBULENT AIR PENETRATION SPEED

At or Below 32000 ft ..... 232 KIAS

Above 32000 ft..... 232 KIAS/0.65M, WHICHEVER IS LOWER

ENGINE DRY MOTORING

Associated Thrust Lever..... IDLE

Associated Start/Stop Knob..... STOP

Associated Ignition Switch..... OFF

Associated Start/Stop Knob..... START, THEN RUN

After 30 seconds:

Associated Start/Stop Knob ..... STOP

Associated Ignition Switch..... AUTO

TRAFFIC COLLISION AND AVOIDANCE SYSTEM – TCAS II

The pilot must not initiate evasive maneuvers using Traffic Advisory information (TA) only, without visually sighting conflicting traffic.

The traffic display and advisories are intended for assistance in visually locating the indicated conflicting traffic.

Maneuvers that are in the opposite direction of the RA are extremely hazardous, especially RAs involving altitude crossing, and thus are prohibited unless it is visually determined to be the only means to assure safe separation.

WARNING: IT IS POSSIBLE IN SOME CASES TO HAVE INSUFFICIENT AIRPLANE PERFORMANCE TO FOLLOW THE TCAS COMMAND WITHOUT FLYING INTO STALL WARNING OR BUFFET. CONDITIONS WHERE THIS MAY OCCUR INCLUDE:

- **BANK ANGLE IN EXCESS OF 15 DEGREES.**
- **OPERATIONS AT AIRPORTS ABOVE 5300 FT MSL OR TEMPERATURES GREATER THAN ISA + 28°C (ISA + 50°F).**
- **ENGINE INOPERATIVE.**
- **FAILURE TO CONFIGURE THE AIRPLANE TO GO-AROUND FOLLOWING A CLIMB RA IN LANDING CONFIGURATION.**
- **FAILURE TO ADVANCE THRUST TO MAX CONTINUOUS THRUST FOLLOWING A CLIMB RA AT REDUCED THRUST.**
- **SPEEDS LESS THAN NORMAL OPERATING SPEED.**
- **ABNORMAL CONFIGURATIONS WHICH REDUCE PERFORMANCE (E.G. GEAR DOWN).**
- **TCAS COMMAND REVERSAL TO A "CLIMB-CLIMB NOW".**
- **BUFFET MARGIN LESS THAN 0.3 G.**

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WARNING: IF STALL WARNING OCCURS DURING AN RA MANEUVER, IMMEDIATELY ABANDON THE RA AND EXECUTE STALL RECOVERY PROCEDURES. TCAS II WILL CONTINUE TO PROVIDE RAS DURING STALL WARNING AND RECOVERY PROCEDURE.

WARNING: IF HIGH SPEED BUFFET IS ENCOUNTERED WHEN INITIALLY RESPONDING TO AN RA, RELAX PITCH FORCE AS NECESSARY TO REDUCE BUFFET, BUT STILL CONTINUE TO MANEUVER.

NOTE: - The consequences of not following an RA may result in additional RA's in which aural alert and visual annunciations may not agree with each other.

- Using every available means, clear the airspace into which you are going to maneuver. If needed, promptly and smoothly adjust the airplane's pitch to fly into the green rectangle (if displayed), and fly out of the red trapezoidal shaped avoidance zone(s). This should require no more than 0.75 g to 1.25 g maneuver (± 0.25 g).
- Exaggerated responses to TCAS RAs are not desirable or appropriate because of the other potential traffic conflicts and ATC consequences. From level flight, proper response to a TCAS RA typically results in an overall altitude deviation of 300 to 500 ft to resolve a traffic conflict.
- If a CLIMB RA is issued with the airplane in the landing configuration, a normal go-around should be initiated including the appropriate thrust increase and configuration change.
- Compliance with TCAS resolution advisories is required unless the pilot considers it unsafe to do so.
- The pilot should promptly return to the previous ATC clearance after the TCAS voice message "Clear of Conflict" is announced.
- An immediate smooth response to a RA is required to obtain maximum separations. TCAS II algorithms are based on the pilot initiating the initial maneuver within 5 seconds of the RA and within 2 1/2 seconds for additional corrective RA's (increases or reversals). Any delay in responding to RA's will reduce the separations provided.

TERRAIN AWARENESS AND WARNING SYSTEM (TAWS)

When a TAWS alert occurs, use the flight controls and thrust as necessary to correct the airplane attitude, flight path and configuration, according to the voice message presented, to provide terrain clearance.

WARNING: **IF A TERRAIN AWARENESS WARNING OCCURS, IMMEDIATELY INITIATE AND CONTINUE A CLIMB THAT WILL PROVIDE MAXIMUM TERRAIN CLEARANCE UNTIL ALL ALERTS CEASE. ONLY VERTICAL MANEUVERS ARE RECOMMENDED, UNLESS OPERATING IN VISUAL METEOROLOGICAL CONDITIONS (V_{MC}), AND/OR THE PILOT DETERMINES, BASED ON AVAILABLE INFORMATION, THAT TURNING IN ADDITION TO THE VERTICAL ESCAPE MANEUVER IS A SAFER COURSE OF ACTION.**

CAUTION:

- FOR TAWS, THE TERRAIN DISPLAY IS INTENDED TO BE USED AS A SITUATIONAL AWARENESS TOOL ONLY AND MAY NOT PROVIDE THE ACCURACY AND/OR FIDELITY ON WHICH TO SOLELY BASE TERRAIN AVOIDANCE MANEUVERING DECISIONS.
- WHEN A TERRAIN AWARENESS CAUTION OCCURS, VERIFY THE AIRPLANE FLIGHT PATH AND CORRECT IT IF REQUIRED. IF IN DOUBT, PERFORM A CLIMB UNTIL THE CAUTION ALERT CEASES.

NOTE: It is the operator's responsibility to ensure that the database in use is valid for the planned route.

SECTION 4

EMERGENCY AND ABNORMAL PROCEDURES

TABLE OF CONTENTS

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INTRODUCTION

The emergency and abnormal procedures contained in this manual have been developed by the airplane manufacturer and approved by the Certification Authority for use in the operation of this airplane.

This Section provides the emergency and abnormal procedures to be performed in case of a system malfunction or failure, in order to protect passengers and/or crew from serious harm and to maintain the airworthiness of the airplane.

The Emergency and Abnormal Procedures, in this Section, are alphabetized and divided into three blocks:

- Non-Annunciated Procedures: procedures, which may not be related to a CAS message but rather to a condition presented in the airplane.
- Annunciated Procedures: procedures related to a CAS message. These procedures are grouped by system and titled with the correspondent CAS message wording.

  NOTE: All Warning and Caution CAS messages have an associated procedure in the AFM Section 4. Most of the Advisory CAS messages do not have an associated procedure, as they comprise crew awareness alerts only.

- Smoke Procedures: contain all annunciated and non-annunciated smoke related procedures.

The actions identified with ϕ are recall items. They must be performed expeditiously and from memory. The other actions should be performed as soon as the condition permits.

Some procedures require to LAND AS SOON AS POSSIBLE or LAND AS SOON AS PRACTICAL, refer to Section 1, General for definition.

Conditions resulting in a red, yellow or white message must be corrected prior to flight, unless airplane dispatch is allowed by an approved MEL or another authorized special condition. If messages occur in flight and the safety conditions permit, consideration should be given to landing at an airfield where corrective maintenance can be performed.

The procedures contained herein assume that:

- Normal procedures have been properly accomplished;
- System controls are in normal condition prior to initiation of the associated procedure;
- Airplane systems are operating normally prior to the failure;
- All emergency and abnormal checklists are performed in the order they are presented in the procedure;
- Some emergency or abnormal procedures require a correction in landing distance or landing reference speed. The reference for such correction is always flap FULL, even for those airplanes that do not have flap FULL selection available;
- Aural warnings are silenced as applicable. Master Warning/ Caution lights are reset as soon as the failure is recognized;
- Circuit breakers must not be reset, unless is requested by the procedures instruction.

NON-ANNUNCIATED PROCEDURES

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Block Page

ABNORMAL PROCEDURES

EMERGENCY PROCEDURES

BAGGAGE COMPARTMENT FIRE

LAND AS SOON AS POSSIBLE.

DITCHING

NOTE: The airplane is not certified for ditching. The procedure below is recommended, if required.

During descent:

Passengers ..... PREPARE/LIFE VESTS, IF AVAILABLE, DON
ATC ..... NOTIFY
Transponder 7700
SIGNS/OUTLET Switch ..... PED-BELTS/OFF
ELT ..... ON
Water Barrier ..... INSTALL

At 10000 ft, push the Pressurization DUMP Button in.

Ditching configuration:

LDG GEAR Lever ..... UP
Flap ..... MAX AVAILABLE
Oxygen Bottle Valve Handle ..... PULL TO CUTOUT

If it is not possible to achieve the selected flap position, maintain airspeed according to the following:

FLAP POSITION	MINIMUM AIRSPEED	
	NO ICING	IN ICING/WITH ICE
0	$V_{REF\ FULL}$ + 27 KIAS	$V_{REF\ FULL}$ + 38 KIAS
1	$V_{REF\ FULL}$ + 19 KIAS	$V_{REF\ FULL}$ + 27 KIAS
2 and 3	$V_{REF\ FULL}$ + 6 KIAS	$V_{REF\ FULL}$ + 15 KIAS
FULL	$V_{REF\ FULL}$	$V_{REF\ FULL}$ + 10 KIAS

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NOTE: - If flap stops between two positions, use the minimum airspeed associated with the next retracted position and the V_{FE} associated with the next extended position.

- Disregard green circle indication, as it may indicate slower speeds.

Just before water contact:

Passengers ..... ANNOUNCE IMPACT

After ditching:

Thrust Levers ..... IDLE
Start/Stop Knobs ..... STOP
Fire Extinguish System ..... AS REQUIRED
EMERGENCY EVACUATION
Procedure ..... ACCOMPLISH

DUAL ENGINE FAILURE

LAND AS SOON AS POSSIBLE.

ϕ Thrust Levers ..... IDLE
ϕ Crew Oxygen Masks ..... DON, 100%
ϕ Communication ..... ESTABLISH

If both engines are restarted via autorelight:

Engine Parameters ..... MONITOR
Monitor the engine parameters for remainder of the flight.

If no engine is restarted via autorelight:

Altitude ..... 30000 ft MAXIMUM
Airspeed ..... 250 KIAS MAXIMUM
XFEED Knob LO2

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NOTE: - Start the engines one at a time, initiating the in-flight start sequence through the right engine, if possible.

- Assisted start attempts in electrical emergency condition decrease battery duration.

If N2 is above 9% and airspeed is above 200 KIAS, a windmilling start may be accomplished as following:

Start/Stop Knob ..... STOP

Start/Stop Knob ..... RUN

If N2 is at 9% or below accomplish an assisted start as following:

Start/Stop Knob ..... STOP

Start/Stop Knob ..... START THEN RUN

If the dual engine failure condition persists:

FORCED LANDING or DITCHING Procedure ..... ACCOMPLISH

If at least one engine is recovered:

XFEED Knob ..... AS REQUIRED

Engine Parameters..... MONITOR

Monitor the engine parameters for remainder of the flight.

If applicable:

ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure..... ACCOMPLISH

EMERGENCY DESCENT

ϕ SIGNS/OUTLET Switch..... PED-BELTS/OFF

ϕ Altitude..... 10000 ft OR MEA, WHICHEVER IS HIGHER

ϕ Thrust Levers..... IDLE

ϕ SPEED BRAKE Switch..... OPEN

ϕ Airspeed..... 250 KIAS/M_{MO} MAXIMUM

ϕ LDG GEAR Lever..... DN

ϕ Transponder..... 7700

ϕ ATC..... NOTIFY

At 10000 ft or MEA:

SPEED BRAKE Switch..... CLOSE

EMERGENCY EVACUATION

- ϕ Thrust Levers ..... IDLE
- ϕ Emergency/Parking Brake ..... ON
- ϕ Start/Stop Knobs ..... STOP
- ϕ Fire Shutoff Button ..... PUSH IN
- ϕ PRESN MODE Switch..... MAN
- ϕ Pressurization DUMP Button ..... PUSH IN
- ϕ ATC ..... NOTIFY
- ϕ Evacuation..... PERFORM
- ϕ BATT 1 & 2 Switches ..... OFF

ENGINE ABNORMAL START

- ϕ Start/Stop Knob (affected engine)..... STOP

On ground, if an engine dry motoring is considered:

ENGINE DRY MOTORING Procedure..... ACCOMPLISH

ENGINE FIRE, SEVERE DAMAGE OR SEPARATION

ϕ Thrust Lever (affected engine) ..... IDLE

ϕ Start/Stop Knob (affected engine) ..... STOP

ϕ Fire Shutoff Button (affected engine) ..... PUSH IN

LAND AS SOON AS POSSIBLE.

Wait 30 seconds and if fire persists:

BOTTLE Switch ..... DISCH

Altitude ..... 36000 ft MAXIMUM

ECS Knob ..... UNAFFECTED SIDE

Thrust Lever (operative engine)..... AS REQUIRED

Reduce airspeed as required to keep vibration within acceptable levels.

If high vibration exists:

Airspeed..... REDUCE (140 KIAS MINIMUM)

When appropriate:

ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure..... ACCOMPLISH

FORCED LANDING

This procedure is recommended for landings with all engines inoperative or for landings on unprepared surfaces. Landing on unprepared surfaces is not recommended. However, if specific circumstances render such landing inevitable, accomplish the procedures below:

Passengers..... PREPARE
ATC..... NOTIFY
Transponder 7700
SIGNS/OUTLET Switch..... PED-BELTS/OFF
ELT ..... ON
Landing Data ..... SET

At 10000 ft push in the Pressurization DUMP Button and set the altimeters during approach.

For landing configuration:

LDG GEAR Lever ..... AS REQUIRED

NOTE: The decision to land with gear up or extended is left to pilots. The choice of configuration is based on airplane load distribution, controllability and conditions of the landing field.

Flap..... MAXIMUM AVAILABLE

If it is not possible to achieve the selected flap position, maintain airspeed according to the following:

FLAP POSITION	MINIMUM AIRSPEED	
	NO ICING	IN ICING/WITH ICE
0	$V_{REF\ FULL}$ + 27 KIAS	$V_{REF\ FULL}$ + 38 KIAS
1	$V_{REF\ FULL}$ + 19 KIAS	$V_{REF\ FULL}$ + 27 KIAS
2 and 3	$V_{REF\ FULL}$ + 6 KIAS	$V_{REF\ FULL}$ + 15 KIAS
FULL	$V_{REF\ FULL}$	$V_{REF\ FULL}$ + 10 KIAS

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NOTE: - If flap stops between two positions, use the minimum airspeed associated with the next retracted position and the V_{FE} associated with the next extended position.

- Disregard green circle indication, as it may indicate slower speeds.

Oxygen Bottle Valve Handle ..... PULL TO CUTOUT

Just before touchdown:

Passengers ..... ANNOUNCE IMPACT

Reduce the vertical speed as much as possible.

After landing, if conditions permit:

Thrust Levers ..... IDLE

Start/Stop Knobs ..... STOP

Fire Shutoff Buttons ..... PUSH IN

EMERGENCY EVACUATION
Procedure ..... ACCOMPLISH

FUEL LEAKAGE

LAND AS SOON AS POSSIBLE.

XFEED Knob ..... OFF

Thrust Levers ..... SAME N1 SET ON BOTH ENGINES

If N1 and fuel flow indications from both engines match, but one side is leaking:

Asymmetric Thrust ..... AS REQUIRED TO CONTROL FUEL IMBALANCE

If the fuel leakage continues and is severe:

Affected Engine Shutdown ..... CONSIDER

If N1 from both engines match, but fuel flow indications are discrepant:

Affected Engine ..... SHUTDOWN

If engine shutdown is performed:

Affected Engine Fire Shutoff Button ..... PUSH IN

REJECTED TAKEOFF (AT OR BELOW V_1)

ϕ Thrust Levers ..... IDLE

ϕ Brakes ..... APPLY MAXIMUM

ϕ Directional Control ..... MAINTAIN

Immediately after stopping:

ENGINE SHUTDOWN or
ENGINE FIRE, SEVERE DAMAGE OR SEPARATION Procedure ..... AS REQUIRED

TAKEOFF WITH ENGINE FAILURE AT OR ABOVE V_1

ϕ At V_R rotate the airplane according to following table:

FLAP POSITION	1	2
PITCH ANGLE	10.5°	8°

ϕ With positive rate of climb:

ϕ LDG GEAR Lever ..... UP

ϕ Airspeed ..... V_2

NOTE: Depending on the associated conditions, the Low Speed Awareness yellow band may surpass the calculated V_2 value. In this case, continue the takeoff disregarding the yellow band indication.

Maintain V_2 up to the acceleration altitude. At the acceleration altitude, set the flap UP position.

NOTE: For takeoff with flap 2, select the flap 1 position before setting to UP.

Accelerate the airplane to the final segment speed (V_{FS}) and set the engine thrust rate to continuous.

NOTE: After reaching the minimum airspeed, maintain the airspeed regardless of the pitch angle.

After retracting flap, accomplish the ENGINE 1 (2) FAILURE Procedure.

ABNORMAL PROCEDURES

ABNORMAL LANDING GEAR EXTENSION

LDG GEAR Lever ..... DN

Free Fall Handle ..... PULL

If gear does not lock down:

Airspeed..... 140 KIAS MINIMUM

Slip the airplane to attempt to lock the main gear.

Check landing gear indications. If landing gear indications are still not confirmed down, accomplish the PARTIAL OR GEAR UP LANDING Procedure.

BLANK DISPLAY UNIT WITH AUTOMATIC REVERSION

Cycle the DISPLAY BACKUP button (OUT then IN).

If the display does not revert to the normal condition or an abnormal behavior occurs, press the DISPLAY BACKUP button again.

NOTE: Only one attempt to return to a normal condition is allowed.

BLANK DISPLAY UNIT WITHOUT AUTOMATIC REVERSION

Press the DISPLAY BACKUP button and select the reversionary mode, as required.

EMERGENCY BRAKING TECHNIQUE

When applying emergency brakes, pull the handle gently until emergency/parking brake light is on. From this point, reposition of the emergency brake handle may be necessary to keep an adequate deceleration, depending on runway conditions and remaining runway length.

CAUTION: ANTISKID PROTECTION IS NOT AVAILABLE FOR EMERGENCY/PARKING BRAKE. SKIDDING THE TIRES DOES NOT DECREASE STOPPING DISTANCE AND MAY CAUSE TIRE BLOWOUT.

NOTE: The emergency/parking brake accumulator allows 6 actuations.

ENGINE ABNORMAL VIBRATION

Reduce the associated thrust lever to IDLE in order to keep vibration within acceptable levels.

NOTE: Reduce the thrust levers one at a time to attempt to identify the affected engine.

If the engine abnormal vibration persists, accomplish the ENGINE SHUTDOWN Procedure.

CAUTION: CONTINUOUS HIGH VIBRATION MAY DAMAGE THE ENGINE.

ENGINE IN-FLIGHT START

Check the in-flight envelope and set the inoperative engine as follows:

Assisted engine airstart:

N2 (operative engine) ..... MIN 72%

Inoperative engine:

Thrust Lever ..... IDLE

Start/Stop Knob ..... STOP

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Associated FUEL PUMP Switch..... ON
Start/Stop Knob ..... START, THEN RUN

Windmilling engine airstart:

Inoperative engine:

N2 ..... MIN 9%
Thrust Lever ..... IDLE
Start/Stop Knob ..... STOP
Associated FUEL PUMP Switch..... ON
Start/Stop Knob ..... RUN

If the engine is restarted normally:

Thrust Levers..... AS REQUIRED
FUEL PUMP Switches..... AUTO

If an abnormal start occurs:

Start/Stop Knob (affected engine) ..... STOP
Thrust Lever (operative engine) ..... AS REQUIRED
Fuel..... BALANCE

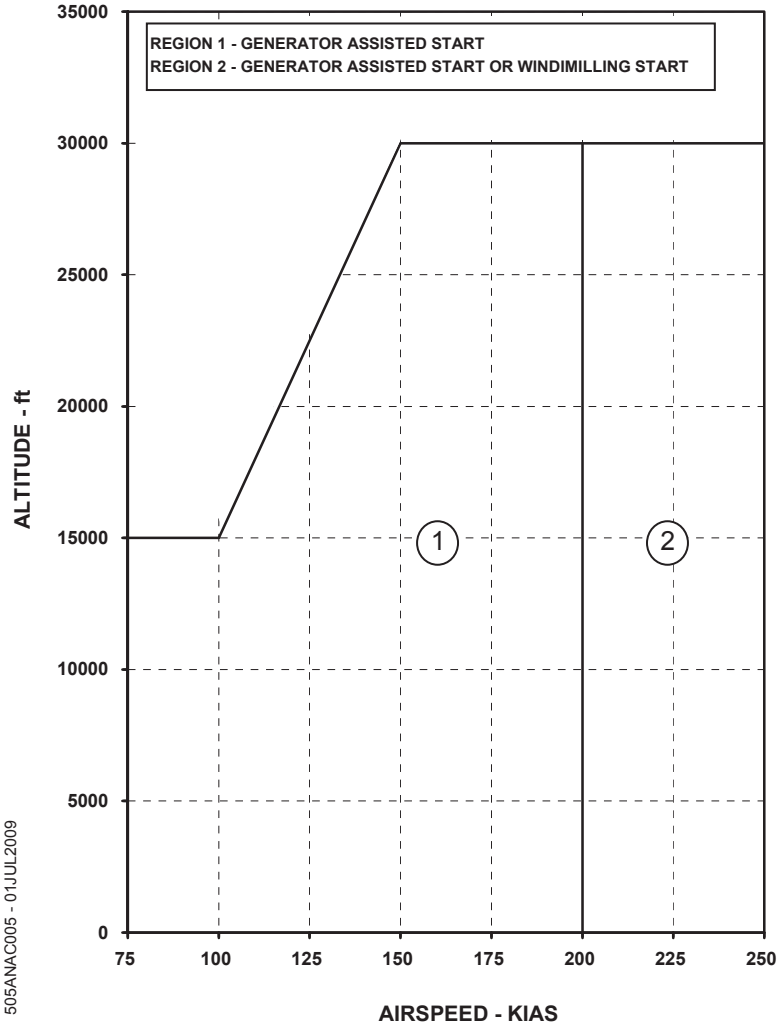
When appropriate:

ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure ..... ACCOMPLISH

CAUTION:

- THE ENGINE MAY BE STARTED AT ANY TIME AFTER SHUTDOWN, BUT IN ORDER TO REDUCE START ITT, IF TIME PERMITS, ALLOW ENGINE TO WINDMILL UNTIL ITT IS LESS THAN 100°C, BEFORE INITIATING ROUTINE STARTS.
- SHOULD THE ENGINE FAIL TO LIGHT-UP WITHIN 10 SECONDS OF FUEL ON, OR ACHIEVE STABILIZED FLIGHT IDLE WITHIN 60 SECONDS FROM FUEL ON, THE ENGINE START IS DEEMED TO HAVE BEEN UNSUCCESSFUL AND MUST BE ABORTED MANUALLY.
- ASSISTED START ATTEMPTS IN ELECTRICAL EMERGENCY CONDITION DECREASE BATTERY DURATION.

ENGINE IN-FLIGHT START ENVELOPE



ENGINE ITT OVERTEMPERATURE

The ITT gray quadrant indication becomes red.

Associated Thrust Lever ..... REDUCE

If the affected engine is still out of limits:

ENGINE SHUTDOWN Procedure..... ACCOMPLISH

ENGINE SHUTDOWN

LAND AS SOON AS POSSIBLE.

Thrust Lever (affected engine) ..... IDLE
Start/Stop Knob (affected engine) ..... STOP
Thrust Lever (operative engine) ..... AS REQUIRED
Fuel ..... BALANCE
Airspeed..... 140 KIAS MINIMUM

If in icing conditions:

ONE ENGINE INOPERATIVE IN ICING CONDITIONS Procedure..... ACCOMPLISH

When appropriate:

ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure ..... ACCOMPLISH

FUEL TEMPERATURE INDICATION FAILURE

If in flight, descend to a lower altitude if external temperature is below -37°C.

FUEL TEMPERATURE OUT OF RANGE

In flight:

If fuel temperature is below -37°C descend to lower altitudes.

If fuel temperature is above 80°C:

LAND AS SOON AS PRACTICAL.

GEAR LEVER CANNOT BE MOVED UP

If possible, wait until 400 ft height is achieved to verify if the LG WOW SYS FAIL message is presented.

If the message is not presented, simultaneously proceed:

DN LCK REL Button ..... PRESS

LDG GEAR Lever ..... UP

WARNING: IF CLIMB PERFORMANCE IS REQUIRED TO CLEAR OBSTACLES DURING TAKEOFF OR GO-AROUND, MOVE LANDING GEAR LEVER TO UP POSITION AT ANY TIME.

IMPAIRED OR CRACKED WINDSHIELD

Affected Windshield Heating Switch ..... OFF

Airspeed ..... 220 KIAS MAXIMUM

Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

During descent:

Pressurization Mode Selector ..... MAN

Cabin Altitude ..... INCREASE

Maintain cabin altitude at 10000 ft.

At or below 10000 ft:

ECS Knob ..... OFF VENT

INADVERTENT PUSHER ACTUATION

ϕ QUICK DISCONNECT Button ..... PRESS

ϕ PUSHER CUTOUT Button ..... PUSH IN

Avoid side slipping and high angles of attack.

NOTE: Low Speed Awareness cues (yellow and red band) and Stall aural warning will still be available.

LOSS OF PRESSURIZATION INDICATION

During pressurization manual controlling, use the table below as a reference when cabin altitude or cabin delta pressure is not being presented.

AIRPLANE ALTITUDE (ft)	CABIN ALTITUDE (ft)	DIFFERENTIAL PRESSURE (PSID)
10000	700	4.2
11000	800	4.6
12000	900	4.9
13000	1000	5.2
14000	1100	5.5
15000	1200	5.8
16000	1300	6.1
17000	1400	6.3
18000	1600	6.5
19000	1700	6.8
20000	1800	7.0
21000	1900	7.2
22000	2100	7.4
23000	2300	7.6
24000	2400	7.8
25000	2600	7.9
26000	2800	8.1
27000	3000	8.2
28000	3100	8.3
29000	3300	8.5
30000	3400	8.6
31000	3600	8.7
32000	3800	8.8
33000	4000	8.9
34000	4200	9.0
35000	4300	9.1
36000	4600	9.1
37000	4800	9.2
38000	5100	9.2
39000	5400	9.2
40000	5700	9.2
41000	6000	9.2
42000	6200	9.2
43000	6400	9.3
44000	6500	9.3
45000	6600	9.4

ONE ENGINE INOPERATIVE APPROACH AND LANDING

During descent:

Landing Speeds	SET
Landing Field Elevation	SET
Approach Aids	SET
Altimeters	SET/CHECK

Landing configuration:

LDG GEAR Lever	DN
Flap	3
Airspeed	$V_{REF\ FULL}$ + 12 KIAS MINIMUM

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.20.

If a go-around is required:

TO/GA Buttons	PRESS
Thrust Levers	TO/GA

Rotate the airplane to 8° nose up.

Flap	1

With positive rate of climb:

LDG GEAR Lever	UP
Airspeed	APPROACH CLIMB SPEED

ONE ENGINE INOPERATIVE IN ICING CONDITIONS

XBLEED Knob ..... AUTO

Minimum airspeed:

Wing and Stabilizer Anti-Ice System Inhibited (flap and gear up)..... 165 KIAS

Wing and Stabilizer Anti-Ice System Armed (flap and gear up)..... 165 KIAS

Wing and Stabilizer Anti-Ice System Uninhibited (flap and gear up) ..... 150 KIAS

Altitude ..... 15000 ft MAXIMUM

N1..... ABOVE WAI BUG

If it is not possible to descend below 15000 ft:

Icing Conditions ..... EXIT/AVOID

OXYGEN LEAKAGE

Leakage may be identified through the pressure indication on MFD.

Communicate the passengers that smoking is not allowed.

Altitude ..... 14000 ft OR MEA, WHICHEVER IS HIGHER

Oxygen Bottle Valve Handle..... PULL TO CUTOUT

PARTIAL OR GEAR UP LANDING

Burn off fuel to reduce touchdown speed.

Passengers ..... NOTIFY

Prior to approach:

Pressurization DUMP Button ..... PUSH IN

LDG GEAR Lever ..... AS REQUIRED

NOTE: The decision to land with all gear up or with any gear extended is left to the crew. The choice of configuration is based on the number of gear available, airplane load distribution, controllability and conditions of the landing field.

Just before touchdown:

Passengers ..... ANNOUNCE

Maximum Vertical Speed ..... 300 ft/MIN

NOTE: Reduce the vertical speed as much as possible at the touchdown.

After landing:

Thrust Levers ..... IDLE

Start/Stop Knobs ..... STOP

Fire Extinguishing System ..... AS REQUIRED

EMERGENCY EVACUATION Procedure ..... ACCOMPLISH

If a go-around is required, maintain the chosen landing gear configuration.

STRUCTURAL DAMAGE

LAND AS SOON AS POSSIBLE.

Limit the airspeed to 170 KIAS maximum.

If the fuselage is damaged:

Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

When reaching 10000 ft:

Pressurization DUMP Button ..... PUSH IN

ECS Knob ..... OFF VENT

Establish landing configuration early.

AIRPLANE GENERAL (DOORS, BAGGAGE COMPARTMENT AND LIGHTING)

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DOOR EMERGENCY OPEN

SIGNS/OUTLET Switch ..... PED-BELTS/OFF

LAND AS SOON AS POSSIBLE.

Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

DOOR PASSENGER OPEN

SIGNS/OUTLET Switch ..... PED-BELTS/OFF

LAND AS SOON AS POSSIBLE.

Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

At 10000 ft or MEA:

- Pressurization DUMP Button ..... PUSH IN
- ECS Knob ..... OFF VENT

DOOR BAGGAGE AFT OPEN

LAND AS SOON AS PRACTICAL.

Airspeed ..... REDUCE TO 160 KIAS

DOOR BAGGAGE LH (RH) OPEN

LAND AS SOON AS PRACTICAL.

Airspeed ..... REDUCE TO 160 KIAS

EMERGENCY LIGHT NOT ARMED

EMER LT Switch ..... ARM

AMS (AIR CONDITIONING, PNEUMATICS AND PRESSURIZATION)

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CABIN ALTITUDE HIGH

ϕ Crew Oxygen Masks ..... DON, 100%

ϕ Communication ..... ESTABLISH

ϕ SIGNS/OUTLET Switch ..... PED-BELTS/OFF

ϕ Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

ϕ Thrust Levers ..... IDLE

ϕ SPEED BRAKE Switch ..... OPEN

ϕ Airspeed ..... 250 KIAS/M_{MO} MAXIMUM

ϕ LDG GEAR Lever ..... DN

ϕ Transponder 7700

ϕ ATC ..... NOTIFY

If passenger masks are not deployed automatically or PAX OXY NO PRES message is displayed:

Oxygen SUPPLY CONTROL Knob ..... PAX OVRD

At 10000 ft or MEA:

Pressurization DUMP Button ..... PUSH IN

ECS Knob ..... OFF VENT

SPEED BRAKE Switch ..... CLOSE

LDG GEAR Lever ..... AS REQUIRED

If landing is not imminent, consider retracting landing gear for fuel saving.

AMS CONTROLLER FAILURE

If above 10000 ft:

- Crew Oxygen Masks ..... DON, 100%
- Communication ..... ESTABLISH
- Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

Leave and avoid icing conditions.

At 10000 ft or MEA:

- Pressurization DUMP Button ..... PUSH IN
- ECS Knob ..... OFF VENT

BLEED 1 (2) FAILURE

Affected BLEED Switch ..... OFF

Wait 1 minute.

Affected BLEED Switch ..... AUTO

If the BLEED 1 (2) FAIL message persists:

- Affected BLEED Switch ..... OFF
- Altitude ..... 36000 ft MAXIMUM

If below 30000 ft:

- Icing Conditions ..... EXIT/AVOID

BLEED 1 (2) LEAKAGE

Affected BLEED Switch ..... OFF
XBLEED Knob ..... OFF
ECS Knob ..... UNAFFECTED SIDE
WINGSTAB Switch ..... OFF
Altitude ..... 36000 ft MAXIMUM

If below 30000 ft:

Icing Conditions ..... EXIT/AVOID

If the associated BLEED OFF message is not displayed or BLEED LEAK message persists after 3 minutes:

Crew Oxygen Masks ..... DON, 100%
Communication ..... ESTABLISH
Associated Thrust Lever ..... IDLE
Opposite BLEED Switch ..... OFF
Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

At 10000 ft or MEA:

Pressurization DUMP Button ..... PUSH IN
ECS Knob ..... OFF VENT

If the associated BLEED LEAK message still persists:

Associated Engine ..... SHUTDOWN

When applicable:

ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure ..... ACCOMPLISH

BLEED 1 (2) OVERPRESSURE

Affected BLEED Switch ..... OFF

Wait 30 seconds.

Affected BLEED Switch ..... AUTO

If the BLEED 1 (2) OVERPRES message persists:

- Affected BLEED Switch ..... OFF
- XBLEED Knob ..... OFF
- ECS Knob ..... UNAFFECTED SIDE
- Altitude ..... 36000 ft MAXIMUM

If below 30000 ft:

- Icing Conditions ..... EXIT/AVOID

CABIN DELTA PRESSURE FAILURE

If the cabin differential pressure indication is positive:

- PRESN MODE Switch ..... MAN
- CABIN ALT Switch ..... UP

If unable to modulate cabin altitude:

- ECS Knob ..... OFF VENT

If above 10000 ft:

- Crew Oxygen Masks ..... DON, 100%
- Communication ..... ESTABLISH
- Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

At 10000 ft or MEA:

- Pressurization DUMP Button ..... PUSH IN

If the indication is negative:

- Airplane Descent Rate ..... REDUCE

DUCT 1 (2) OVERTEMPERATURE

AIR CONDITIONING MODE Switch ..... MAN

AIR CONDITIONING TEMP Switch ..... COLD FOR 5 SECONDS

Wait 1 minute.

If the DUCT 1 (2) OVERTEMP message extinguishes:

- AIR CONDITIONING MODE Switch ..... AUTO
- Adjust the temperature as required.

If the DUCT 1 (2) OVERTEMP message persists:

- ECS Knob ..... UNAFFECTED SIDE
- Altitude ..... 36000 ft MAXIMUM
- Wait 1 minute.
- If the DUCT 1 (2) OVERTEMP message still persists:
  - Associated BLEED Switch ..... OFF
  - XBLEED Knob ..... OFF
  - If below 30000 ft:
    - Icing Conditions ..... EXIT/AVOID
  - Wait 1 minute.
  - If the DUCT 1 (2) OVERTEMP message persists:
    - Associated Thrust Lever ..... IDLE
    - When applicable:
      - ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure ..... ACCOMPLISH

ELECTRONIC BAY LEAKAGE

ECS Knob ..... OFF VENT

If above 10000 ft:

- Crew Oxygen Mask ..... DON, 100%
- Communication ..... ESTABLISH
- Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

At 10000 ft or MEA:

- Pressurization DUMP Button ..... PUSH IN

If the EBAY LEAK message persists:

- BLEED 1 & 2 Switches ..... OFF

Leave and avoid icing conditions.

ELECTRONIC BAY OVERHEAT

AIR CONDITIONING MODE Switch ..... MAN

AIR CONDITIONING TEMP Switch ..... COLD FOR 5 SECONDS

Wait 90 seconds.

If the EBAY OVHT message extinguishes:

- AIR CONDITIONING MODE Switch ..... AUTO
- CABIN TEMP Knob ..... FULL COLD

If the EBAY OVHT message persists:

- Non-Essential Equipment ..... OFF
- Wait 5 minutes and if the EBAY OVHT message persists:
  - Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER
  - At 10000 ft or MEA:
    - Pressurization DUMP Button ..... PUSH IN
    - ECS Knob ..... OFF VENT
    - LAND AS SOON AS PRACTICAL.

ENVIRONMENTAL CONTROL SYSTEM 1 (2) VALVE FAILURE

If the opposite side ECS is available:

- ECS Knob ..... UNAFFECTED SIDE
- Altitude ..... 36000 ft MAXIMUM

If opposite side ECS is unavailable:

- Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER
- ECS Knob ..... OFF VENT

PRESSURIZATION AUTO FAILURE

PRESN MODE Switch ..... MAN, THEN AUTO

If the PRESN AUTO FAIL message persists and the manual mode is operative:

In case of single pilot operation and above 10000 ft:

Crew Oxygen Mask ..... DON, NORMAL

Communication ..... ESTABLISH

PRESN MODE Switch ..... MAN

CABIN ALT Switch ..... AS REQUIRED

Altitude ..... 25000 ft MAXIMUM

Cabin Pressurization Indications ..... MONITOR

If cabin altitude increases above 10000 ft:

CABIN ALTITUDE HIGH Procedure ..... ACCOMPLISH

When appropriate before landing:

CABIN ALT Switch ..... HOLD UP FOR 15 SECONDS

If the PRESN AUTO FAIL message persists and the manual mode is inoperative:

Crew Oxygen Masks ..... DON, 100%

Communication ..... ESTABLISH

ECS Knob ..... OFF VENT

Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

RAM AIR FAILURE

Report to maintenance after landing.

If associated with both ECS or bleed valves failure, LAND AS SOON AS PRACTICAL.

AUTOMATIC FLIGHT

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AUTOPILOT FAILURE

Autopilot ..... DISCONNECT

Fly the airplane manually and refer to the RVSM Operation Supplement, if in RVSM airspace.

AUTOPILOT PITCH MISTRIM

Control Wheel ..... HOLD FIRMLY
QUICK DISCONNECT Button ..... PRESS
Pitch Trim ..... AS REQUIRED

If normal pitch trim is inoperative:
PITCH BKP MODE Switch ..... BKP

AUTOPILOT ROLL MISTRIM

Roll Trim ..... AS REQUIRED

AUTOMATIC PITCH TRIM FAILURE

Control Wheel ..... HOLD FIRMLY
QUICK DISCONNECT Button ..... PRESS
Pitch Trim ..... AS REQUIRED

If normal pitch trim is inoperative:
PITCH BKP MODE Switch ..... BKP

YAW DAMPER FAILURE

If in icing conditions:

Airspeed ..... 180 KIAS MAXIMUM

If associated with VENTRAL RUD FAIL message:

Rudder Pedals ..... FIXED

Altitude ..... 25000 ft MAXIMUM

CAUTION: WITH VENTRAL RUDDER AND YAW DAMPER FAILED SIMULTANEOUSLY, LATERAL/DIRECTIONAL OSCILLATIONS MAY OCCUR. IN THIS CASE, OPENING THE SPEED BRAKE AND KEEPING A 20° BANK TURN HELP TO DAMP THE OSCILLATION.

Maintain the airspeed according to the table below:

ALTITUDE	AIRSPEED
BELOW 15000 FT	AS REQUIRED
FROM 15000 TO 20000 FT	200 KIAS MINIMUM
FROM 20000 TO 25000 FT	290 KIAS MINIMUM

NOTE: Values above are also valid for icing conditions.

YAW DAMPER MISTRIM

Yaw Trim ..... AS REQUIRED

VENTRAL RUDDER FAILURE

Yaw Damper ..... ENGAGE

If associated with YD FAIL message:

Rudder Pedals ..... FIXED

Altitude ..... 25000 ft MAXIMUM

CAUTION: WITH VENTRAL RUDDER AND YAW DAMPER FAILED SIMULTANEOUSLY, LATERAL/DIRECTIONAL OSCILLATIONS MAY OCCUR. IN THIS CASE, OPENING THE SPEED BRAKE AND KEEPING A 20° BANK TURN HELP TO DAMP THE OSCILLATION.

Maintain the airspeed according to the table below:

ALTITUDE	AIRSPEED
BELOW 15000 FT	AS REQUIRED
FROM 15000 TO 20000 FT	200 KIAS MINIMUM
FROM 20000 TO 25000 FT	290 KIAS MINIMUM

NOTE: Values above are also valid for icing conditions.

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ELECTRICAL

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ELECTRICAL EMERGENCY

ϕ PRESN MODE Switch ..... MAN

ϕ CABIN ALT Switch ..... HOLD DN FOR 10 SECONDS

If above 10000 ft:

CABIN ALTITUDE HIGH Procedure ..... ACCOMPLISH

At 10000 ft or MEA:

Pressurization DUMP Button ..... PUSH IN

ECS Knob ..... OFF VENT

LDG GEAR Lever ..... AS REQUIRED

Reset both generators.

If message persists:

LAND AS SOON AS POSSIBLE.

Rudder Pedals ..... FIXED

Altitude ..... 25000 ft MAXIMUM

CAUTION:

- WITH VENTRAL RUDDER AND YAW DAMPER FAILED SIMULTANEOUSLY, LATERAL/DIRECTIONAL OSCILLATIONS MAY OCCUR. IN THIS CASE, KEEPING A 20° BANK TURN HELP TO DAMP THE OSCILLATION.
- BATTERY DURATION IS 45 MINUTES MAXIMUM.

EMER LT Switch ..... OFF

Airplane ..... FLY MANUALLY

Icing Conditions ..... EXIT/AVOID

Confirm that IESI has reverted. If not, select ADSTBY on PFD.

Avoid side slipping the airplane and high angle of attack.

Before landing:

EMER LT Switch (if required) ..... ON

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When landing maintain airspeed according to the following:

FLAP POSITION	MINIMUM AIRSPEED	
	NO ICING	IN ICING/WITH ICE
ANY	$V_{REF\ FULL}$ + 17 KIAS	$V_{REF\ FULL}$ + 28 KIAS

NOTE: - If flap stops between two positions, use the minimum airspeed associated with the next retracted position and the V_{FE} associated with the next extended position.

- Disregard green circle indication, as it may indicate slower speeds.

CAUTION: TO DETERMINE THE MINIMUM SUITABLE LANDING DISTANCE, MULTIPLY THE UNFACTORED LANDING DISTANCE FOR FLAP FULL BY ONE OF THE FACTORS BELOW.

FLAP POSITION	CORRECTION FACTOR	
	NO ICING	IN ICING/WITH ICE
0 and 1	1.30	1.50
2 and 3	1.50	2.00
FULL	1.70	2.30

If a go-around is required, maintain the minimum airspeed presented in the applicable flap configuration from the table above, until the acceleration altitude is reached.

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The list below presents the relevant inoperative equipment/functions:

- AHRS 2
- Air Conditioning
- AMS Controller
- Anti-Ice System
- Audio Panel 2
- Autopilot
- Baggage Heater
- DME 1/2
- Engine 1/2 Flowmeter
- Flap System
- Flight Director 2
- FMS Panel
- Fuel Pump 2
- GIA 2
- GPS 2/VOR 2/ILS 2
- IASP 1/2
- Ice Detector
- Landing Lights
- Navigation/Taxi Lights
- Passenger Signs
- PFD 2
- Pitch Trim System
- Pressurization Auto
- Red Beacon
- Roll Trim
- Rudder Booster
- Stall Protection
- Stall Warning
- Spoiler System
- Strobe Lights
- Transponder 2
- Windshield Heater 1/2
- WX Radar
- Yaw Damper
- Yaw Trim

ELECTRICAL EMERGENCY TRANSFER FAIL

ϕ ELEC EMER Button ..... PUSH IN

LAND AS SOON AS POSSIBLE.

If transference is confirmed:

ELECTRICAL EMERGENCY Procedure..... ACCOMPLISH

If transference is still failed:

Electrical Load ..... REDUCE

CAUTION: IF EITHER PFD 2 OR MFD IS STILL ENERGIZED WITH ELEC XFR FAIL MESSAGE SHOWN, BATTERY DURATION IS LESS THAN 45 MINUTES.

BATTERY 1 (2) OFF BUS

Associated BATT Switch..... OFF, THEN ON

If message persists:

Associated BATT Switch ..... ON

BATTERY DISCHARGE

LAND AS SOON AS PRACTICAL.

Check BATT 1 and BATT 2 voltage on MFD.

If BATT 1 or BATT 2 voltage is out of range (yellow color):

Associated GEN Switch..... OFF

Associated Thrust Lever ..... IDLE

If the message persists:

LAND AS SOON AS POSSIBLE.

ELEC EMER Button..... PUSH IN

CAUTION: BATTERY DURATION IS 45 MINUTES.

BATTERY EXCEEDANCE

LAND AS SOON AS PRACTICAL.

Check BATT 1 and BATT 2 voltage on MFD.

If BATT 1 or BATT 2 voltage is out of range (yellow color):

Associated GEN Switch..... OFF

Associated Thrust Lever..... IDLE

If the message persists:

LAND AS SOON AS POSSIBLE.

ELEC EMER Button ..... PUSH IN

CAUTION: BATTERY DURATION IS 45 MINUTES.

GENERATOR 1 (2) OFF BUS

Associated GEN Switch..... OFF, THEN AUTO

If the message persists:

LAND AS SOON AS PRACTICAL.

Associated GEN Switch..... OFF

Associated Thrust Lever..... IDLE

If engine abnormal vibration and/or noise exist:

LAND AS SOON AS POSSIBLE.

ENGINE ABNORMAL VIBRATION Procedure ..... ACCOMPLISH

GENERATOR OVERLOAD

AIR CONDITIONING MODE Switch..... OFF

If the message persists:

WSHLD 2 Switch ..... OFF

If the message persists:

Electrical Load ..... REDUCE

GENERATOR START FAULT

BATT 2 Switch ..... OFF
ELEC EMER Button ..... PUSH IN
ELECTRICAL EMERGENCY Procedure ..... ACCOMPLISH

CAUTION: BATTERY DURATION IS 45 MINUTES.

DC BUS 1 OFF

Flight Director ..... SELECT FD2
Autopilot ..... ENGAGED

If in RVSM airspace, notify the ATC and co-ordinate an appropriate action plan.

Icing Conditions ..... EXIT/AVOID
Altitude ..... 36000 ft MAXIMUM

Avoid side slipping the airplane and high angle of attack.

When landing maintain airspeed according to the following:

FLAP POSITION	MINIMUM AIRSPEED	
	NO ICING	IN ICING/WITH ICE
ANY	$V_{REF\ FULL}$ + 17 KIAS	$V_{REF\ FULL}$ + 28 KIAS

NOTE: - If flap stops between two positions, use the V_{FE} associated with the next extended position.

- Disregard green circle indication, as it may indicate slower speeds.

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CAUTION: TO DETERMINE THE MINIMUM SUITABLE LANDING DISTANCE, MULTIPLY THE UNFACTORED LANDING DISTANCE FOR FLAP FULL BY ONE OF THE FACTORS BELOW.

FLAP POSITION	CORRECTION FACTOR	
	NO ICING	IN ICING/WITH ICE
0 and 1	1.20	1.40
2 and 3	1.30	1.50
FULL	1.30	1.50

The list below presents the relevant inoperative equipment/functions:

- AMS Controller Channel A
- Baggage Heater
- Cockpit Evaporator
- Cockpit FCSOV
- DME 1
- Engine 1 Anti-Ice
- Engine 1 Flowmeter
- Flap System
- IASP 1
- Landing Lights
- Passenger Signs
- Pitch Trim (Back-Up)
- Roll Trim
- Speed Brake/Roll Spoiler
- Stall Protection
- Strobe Lights
- Windshield Heater 1
- WX Radar
- Yaw Trim

DC BUS 2 OFF

Airplane ..... FLY MANUALLY
Fly the airplane manually. If in RVSM airspace, notify the ATC and co-ordinate an appropriate action plan.

Control Wheel ..... HOLD FIRMLY

Pitch Trim MODE Switch ..... BKP
Use the Pitch Trim BACKUP Switch as required.

Icing Conditions ..... EXIT/AVOID

Avoid side slipping the airplane and high angle of attack.

Rudder Pedals ..... FIXED

Altitude ..... 25000 ft MAXIMUM

CAUTION: WITH VENTRAL RUDDER AND YAW DAMPER FAILED SIMULTANEOUSLY, LATERAL/DIRECTIONAL OSCILLATIONS MAY OCCUR. IN THIS CASE, KEEPING A 20° BANK TURN HELP TO DAMP THE OSCILLATION.

Maintain the airspeed according to the table below:

ALTITUDE	AIRSPEED
BELOW 15000 FT	AS REQUIRED
FROM 15000 TO 20000 FT	200 KIAS MINIMUM
FROM 20000 TO 25000 FT	290 KIAS MINIMUM

Landing configuration:

Flap ..... MAXIMUM AVAILABLE

Airspeed ..... $V_{REF\ FULL}$ + 17 KIAS

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.80.

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The list below presents the relevant inoperative equipment/functions:

- AHRS 2
- AMS Controller Channel B
- Audio Panel 2
- Autopilot
- Cabin Evaporator
- Cabin FCSOV
- DME 2
- Engine 2 Anti-Ice
- Engine 2 Flowmeter
- FMS Panel
- Flight Director 2
- Fuel Pump 2
- GIA 2
- GPS 2/VOR 2/ILS 2
- IASP 2
- Ice Detector
- LH Navigation/Taxi Lights
- PFD 2
- Pitch Trim (Normal)
- Pressurization Auto
- Red Beacon
- Rudder Booster
- Spoiler System
- Stall Protection
- Transponder 2
- Ventral Rudder
- Windshield Heater 2
- Yaw Damper

EMERGENCY BUS OFF

Airplane ..... FLY MANUALLY

Fly the airplane manually. If in RVSM airspace, notify the ATC and co-ordinate an appropriate action plan.

Icing Conditions ..... EXIT/AVOID

Before landing:

LDG GEAR Lever ..... DN

Free Fall Handle ..... PULL UNTIL STOP

If gear does not lock down:

Airspeed ..... 140 KIAS MINIMUM

Slip the airplane to attempt to lock the main gear.

Landing configuration:

Flap ..... MAXIMUM AVAILABLE

Airspeed ..... $V_{REF\ FULL}$ + 2 KIAS

During landing run:

EMERGENCY BRAKING TECHNIQUE Procedure ..... ACCOMPLISH

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 2.00.

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The list below presents the relevant inoperative equipment/functions:

- AHRS 1
- Audio Panel 1
- Autopilot
- EFCU 1/2
- Engines Fire Extinguisher
- Flight Director 1/2
- Fuel Pump 1
- Fuel Shutoff Valves
- GIA 1
- GPS 1/VOR 1/ILS 1
- Ground Spoiler
- LDG Control Lever
- Main Brake
- Oxygen Transducer
- Pax Mask Deploy (Auto)
- PFD 1
- Pressurization Manual
- Ram Air Valve
- Transponder 1
- VHF 1 (Normal)
- WOW
- XFEED Valve
- Yaw Damper

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ENGINE

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ENGINE 1 (2) OIL LOW PRESSURE

If the affected oil pressure indication is abnormal:

ENGINE SHUTDOWN Procedure ..... ACCOMPLISH

ENGINE 1 (2) CONTROL FAULT

LAND AS SOON AS PRACTICAL.

CAUTION: AVOID QUICK THRUST LEVER MOVEMENT AND HIGH ENGINE THRUST OPERATION.

If it is not possible to control engine:

Associated Thrust Lever ..... IDLE

If engine parameters are still unstable:

ENGINE SHUTDOWN Procedure ..... ACCOMPLISH

ENGINE 1 (2) FAILURE

LAND AS SOON AS POSSIBLE.

Associated Thrust Lever ..... IDLE

If the affected engine was not successfully restarted via auto-relight:

Start/Stop Knob ..... STOP

If not accomplishing the takeoff procedure:

Thrust Lever (operative engine) ..... CON/CLB

If fuel leak is suspected:

FUEL LEAKAGE Procedure ..... ACCOMPLISH

If fuel leak is not suspected and a restart is considered:

ENGINE IN-FLIGHT START Procedure ..... ACCOMPLISH

If affected engine is not recovered and when appropriate:

ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure ..... ACCOMPLISH

ENGINE 1 (2) FUEL IMPENDING BYPASS

Report to the maintenance personnel.

WARNING: **IF BOTH E1 FUEL IMP BYP AND E2 FUEL IMP BYP MESSAGES ARE DISPLAYED, LAND AS SOON AS POSSIBLE.**

ENGINE 1 (2) TLA FAILURE

The engine thrust will be set to idle automatically.

When appropriate:

ONE ENGINE INOPERATIVE APPROACH
AND LANDING Procedure..... ACCOMPLISH

ENGINE 1 (2) TT0 HEATER FAILURE

NOTE: Applicable to airplanes Post-Mod. SB 505-73-0001 or equipped with FADEC software version 4.3 and on. For airplanes Pre-Mod. SB 505-73-0001 refer to Supplement 3.

Exit or avoid icing conditions.

ENGINE 1 (2) TT0 PROBE ICE

If in icing conditions:

Icing Conditions ..... EXIT

After exit icing conditions:

ENG 1 & 2 Switches ..... OFF

If not in icing conditions:

ENG 1 & 2 Switches ..... OFF

CAUTION: BEFORE ENTER IN ICING CONDITIONS AT A LATER POINT, TURN ON ENG 1 & 2 SWITCHES AND MAKE SURE THE E1 (2) TT0 PROBE ICE MESSAGE IS NOT DISPLAYED.

ENGINE NO TO DATA

Enter the Engine Takeoff Data.

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FIRE PROTECTION

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BAGGAGE SMOKE

LAND AS SOON AS POSSIBLE.

ENGINE 1 (2) FIRE

ϕ Thrust Lever (affected engine) ..... IDLE
ϕ Start/Stop Knob (affected engine) ..... STOP
ϕ Fire Shutoff Button (affected engine) ..... PUSH IN

LAND AS SOON AS POSSIBLE.

Wait 30 seconds and if fire persists:

BOTTLE Switch ..... DISCH

Altitude ..... 36000 ft MAXIMUM

ECS Knob ..... UNAFFECTED SIDE

Thrust Lever (operative engine) ..... AS REQUIRED

If airplane high vibration exists:

Airspeed ..... REDUCE (140 KIAS MINIMUM)

Reduce airspeed as required to keep vibration within acceptable levels.

When appropriate:

ONE ENGINE INOPERATIVE APPROACH AND LANDING Procedure ..... ACCOMPLISH

AFT BAGGAGE COMPARTMENT SMOKE DETECTION FAILURE

LAND AS SOON AS PRACTICAL.

ENGINE 1 (2) FIRE DETECTION FAILURE

If engine fire or overheat is suspected or if E1 (2) FIRE DET FAIL appears simultaneously with engine failure:

ENGINE 1 (2) FIRE Procedure ..... ACCOMPLISH

ENGINE 1 (2) FIRE EXTINGUISHER FAILURE

LAND AS SOON AS PRACTICAL.

FLIGHT CONTROLS

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FLAP FAILURE

Flap Lever ..... CYCLE

Up to 3 cycles may be attempted.

If failure persists:

Altitude ..... 18000 ft MAXIMUM

Leave and avoid icing conditions.

If it is not possible to avoid icing conditions:

LAND AS SOON AS POSSIBLE.

For landing:

- Check the available airports within the current range and choose the one that best matches the required runway length. Considerations for uphill slope and occurrence of headwind should be also made.
- Burn as much fuel as possible to reduce the landing weight.
- Maintain bank angle below 40°.
- Maintain the airspeed according to the following:

FLAP POSITION	MINIMUM AIRSPEED	
	NO ICING	IN ICING/WITH ICE
0	$V_{REF\ FULL}$ + 27 KIAS	$V_{REF\ FULL}$ + 38 KIAS
1	$V_{REF\ FULL}$ + 19 KIAS	$V_{REF\ FULL}$ + 27 KIAS
2 and 3	$V_{REF\ FULL}$ + 6 KIAS	$V_{REF\ FULL}$ + 15 KIAS
FULL	$V_{REF\ FULL}$	$V_{REF\ FULL}$ + 10 KIAS

NOTE: - If flap stops between two positions, use the minimum airspeed associated with the next retracted position and the V_{FE} associated with the next extended position.

- Disregard green circle indication, as it may indicate slower speeds.

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If a go-around is required, maintain the minimum airspeed presented in the applicable flap configuration from the table above, until the acceleration altitude is reached.

CAUTION: TO DETERMINE THE MINIMUM SUITABLE LANDING DISTANCE, MULTIPLY THE UNFACTORED LANDING DISTANCE FOR FLAP FULL BY ONE OF THE FACTORS BELOW.

FLAP POSITION	CORRECTION FACTOR	
	NO ICING	IN ICING/WITH ICE
0	1.40	1.60
1	1.30	1.40
2 and 3	1.10	1.30
FULL	1.00	1.20

GROUND SPOILER FAILURE

Landing configuration:

Flap 3

Airspeed ..... $V_{REF\ FULL}$ + 2 KIAS

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.30.

PITCH TRIM BACK-UP FAILURE

PITCH BKP Switch ..... OFF

Pitch Trim Switches ..... USE AS REQUIRED

PITCH TRIM NORMAL FAILURE

Control Wheel ..... HOLD FIRMLY

QUICK DISCONNECT Button ..... PRESS

PITCH BKP Switch ..... BKP

Use the pitch trim backup mode as required.

NOTE: Autopilot engagement is inhibited.

RUDDER GUST LOCKED

On ground:

Gust Lock Pin ..... CHECK REMOVED

Rudder Pedals ..... CHECK UNLOCKED

If the RUDDER GUST LOCKED message persists:

Do not takeoff.

In flight:

LAND AS SOON AS POSSIBLE.

NOTE: Avoid landing with crosswinds higher than 15 kt.

RUDDER OVERBOOST

Minimum Airspeed (flap and gear up)..... 135 KIAS

Avoid large rudder pedals deflection.

Landing configuration:

Flap ..... MAXIMUM AVAILABLE

Airspeed..... $V_{REF\ FULL}$ + 17 KIAS

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.40.

NOTE: Avoid landing with crosswinds higher than 15 kt.

PITCH TRIM SWITCH 1 (2) FAILURE

For dual pilot operation:

Remaining PITCH TRIM Switch ..... USE AS REQUIRED

NOTE: The Pitch Backup Mode may also be used if available.

For single pilot operation and if the left pitch trim switch is failed:

Pitch Trim Backup Mode..... USE AS REQUIRED

FLIGHT INSTRUMENTS, COMMUNICATION AND NAVIGATION

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ADS 1 (2) FAILURE

Confirm the affected ADS automatic reversion. If necessary, manually revert to the ADS not affected.

If in RVSM airspace, notify the ATC and co-ordinate an appropriate action plan.

If both ADS are lost:

CAUTION: WITH VENTRAL RUDDER AND YAW DAMPER FAILED SIMULTANEOUSLY, LATERAL/DIRECTIONAL OSCILLATIONS MAY OCCUR. IN THIS CASE, OPENING THE SPEED BRAKE AND KEEPING A 20° BANK TURN HELP TO DAMP THE OSCILLATION.

Maintain the airspeed according to the table below:

ALTITUDE	AIRSPEED
BELOW 15000 FT	AS REQUIRED
FROM 15000 TO 20000 FT	200 KIAS MINIMUM
FROM 20000 TO 25000 FT	290 KIAS MINIMUM

NOTE: - Values above are also valid for icing conditions.

- The airspeed and pressure altitude from IESI may be used.

ADS 1 (2) HEATER FAILURE

Monitor the air data indications. If the information seems to be unreliable, revert to the not affected ADS.

If in RVSM airspace, notify the ATC and co-ordinate an appropriate action plan.

If more than one ADS heater is failed, set the ADS PROBES Knob to ON position and pull the PSTAT HTR CTRL circuit breaker (B6). If messages persist, leave and avoid icing conditions.

AHRS 1 (2) FAILURE

Confirm the affected AHRS automatic reversion. If necessary, manually revert to the other AHRS.

If both AHRS are lost:

CAUTION: WITH VENTRAL RUDDER AND YAW DAMPER FAILED SIMULTANEOUSLY, LATERAL/DIRECTIONAL OSCILLATIONS MAY OCCUR. IN THIS CASE, OPENING THE SPEED BRAKE AND KEEPING A 20° BANK TURN HELP TO DAMP THE OSCILLATION.

Maintain the airspeed according to the table below:

ALTITUDE	AIRSPEED
BELOW 15000 FT	AS REQUIRED
FROM 15000 TO 20000 FT	200 KIAS MINIMUM
FROM 20000 TO 25000 FT	290 KIAS MINIMUM

NOTE: - Values above are also valid for icing conditions.

- The airspeed and pressure attitude from IESI may be used.

AUDIO PANEL 1 (2) FAILURE

Use headset as required.

NOTE: For affected side, the following items are operative:

- On-side VHF transmission/reception;
- Cross-side VHF reception.

CONFIGURATION MODULE FAILURE

Do not takeoff.

GIA 1 (2) FAILURE

Airplane..... FLY MANUALLY

If in RVSM airspace, notify the ATC and co-ordinate an appropriate action plan.

Icing Conditions ..... EXIT/AVOID

Relevant inoperative items:

GIA 1 failed:

- Autopilot
- Crossfeed (Auto)
- DME 1
- Flight Director 1
- GPS 1
- TCAS
- VHF/NAV 1
- Yaw Damper

GIA 2 failed:

- Autopilot
- DME 2
- Flight Director 2
- GPS 2
- TCAS
- VHF/NAV 2
- Yaw Damper

GIA 1 (2) OVERHEAT

Avoid using radios from the affected side.

MFD CONFIGURATION

On ground, report to the maintenance personnel.

In flight:

DISPLAY BACKUP Button ..... PRESS

MFD FAULT

On ground, report to the maintenance personnel.

In flight:

DISPLAY BACKUP Button ..... PRESS

MFD OVERHEAT

If associated with smoke from the MFD:

Crew Oxygen Masks ..... DON, EMERGENCY THEN 100%

EMERGENCY may be selected during 2 minutes maximum then set to 100%.

Crew Oxygen Masks Auto Dilution Valve ..... CLOSED

Smoke Goggles (if available) ..... DON

Communication ..... ESTABLISH

MFD Circuit Breakers (A9 and A24) ..... PULL

SMOKE EVACUATION Procedure ..... AS REQUIRED

PFD 1 (2) CONFIGURATION

On ground, report to the maintenance personnel.

In flight and associated with the flying pilot:

DISPLAY BACKUP Button ..... PRESS

PFD 1 (2) FAULT

On ground, report to the maintenance personnel.

In flight and associated with the flying pilot:

DISPLAY BACKUP Button ..... PRESS

PFD 1 (2) OVERHEAT

If associated with smoke from the affected PFD:

Crew Oxygen Masks ..... DON, EMERGENCY THEN 100%

EMERGENCY may be selected during 2 minutes maximum then set to 100%.

Crew Oxygen Masks Auto Dilution Valve..... CLOSED

Smoke Goggles (if available) ..... DON

Crew Communication ..... ESTABLISH

PFD 1 (A7) or PFD 2 (B24)
Circuit Breaker..... PULL

DISPLAY BACKUP Button ..... AS REQUIRED

SMOKE EVACUATION Procedure ..... AS REQUIRED

If required during approach:

Associated Circuit Breaker..... PUSH

STBY HEATER FAILURE

Monitor the air data indications. If the information seems to be unreliable, disregard IESI altitude and airspeed indication.

If more than one ADS heater is failed, set the ADS/AOA Knob to ON position and pull the PSTAT HTR CTRL circuit breaker (B6). If messages persist, leave and avoid icing conditions.

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FUEL

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FUEL 1 (2) LOW LEVEL

Associated FUEL PUMP Switch ..... ON

Thrust Levers ..... REDUCE TO LONG RANGE

Level the airplane and check both fuel quantities.

If fuel quantity is not sufficient:

LAND AS SOON AS POSSIBLE.

CAUTION: AVOID EXCESSIVE NOSE UP AND DOWN ATTITUDES, UNCOORDINATED MANEUVERS AND NEGATIVE G'S.

If fuel leak is suspected:

FUEL LEAKAGE Procedure ..... ACCOMPLISH

If fuel leak is not suspected:

XFEED Knob ..... AS REQUIRED

FUEL 1 (2) LOW PRESSURE

Associated FUEL PUMP Switch ..... ON

Associated Thrust Lever ..... AS REQUIRED

Engine Parameters ..... MONITOR

If engine parameters are abnormal:

Altitude ..... 22000 ft MAXIMUM

If fuel leak is suspected:

FUEL LEAKAGE Procedure ..... ACCOMPLISH

FUEL 1 (2) SHUTOFF VALVE FAILURE

If associated with engine fire:

LAND AS SOON AS POSSIBLE.

Associated FUEL PUMP Switch ..... OFF

XFEED Knob ..... OFF

FUEL CROSSFEED FAILURE

If message is presented when opening the crossfeed valve for balancing procedure:

XFEED Knob ..... OFF

Fuel Quantity ..... MONITOR

Thrust Levers ..... ADJUST

Use asymmetric thrust to improve or maintain fuel balance.

If message is presented after performing a fuel imbalance procedure:

FUEL PUMP Switches ..... ON

XFEED Knob ..... OFF

Fuel Quantity ..... MONITOR

If further fuel balancing is required:

FUEL PUMP Switch (low level wing) ..... OFF

FUEL PUMP Switch (high level wing) ..... ON

After fuel balancing:

FUEL PUMP Switches ..... ON

FUEL IMBALANCE

If fuel leak is suspected, accomplish the FUEL LEAKAGE Procedure.

If fuel leak is not suspected:

Attitude ..... WINGS LEVEL

In case of right wing low level:

XFEED Knob LO2

If associated with FUEL PUMP 1 FAIL message:

FUEL PUMP 1 Switch ..... ON

Fuel Quantity ..... MONITOR

(Continues on the next page)

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If imbalance does not decrease:

XFEED Knob ..... OFF

Use the asymmetric thrust as required to achieve fuel balance.

If asymmetric thrust can not be used:

LAND AS SOON AS PRACTICAL.

When balance is achieved:

XFEED Knob ..... OFF

FUEL PUMP Switches ..... AUTO

Fuel Quantity ..... MONITOR

In case of left wing low level:

XFEED Knob LO1

If associated with FUEL PUMP 2 FAIL message:

FUEL PUMP 2 Switch ..... ON

Fuel Quantity ..... MONITOR

If imbalance does not decrease:

XFEED Knob ..... OFF

Use the asymmetric thrust as required to achieve fuel balance.

If asymmetric thrust can not be used:

LAND AS SOON AS PRACTICAL.

When balance is achieved:

XFEED Knob ..... OFF

FUEL PUMP Switches ..... AUTO

Fuel Quantity ..... MONITOR

FUEL PUMP 1 (2) FAILURE

On ground: do not takeoff.

During flight:

If FUEL PUMP 1 (2) FAIL message is displayed during FUEL IMBALANCE Procedure or during ENGINE IN-FLIGHT START Procedure:

Associated FUEL PUMP Switch ..... ON

After procedure accomplished:

FUEL PUMP Switches ..... AUTO

HYDRAULIC

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HYDRAULIC HIGH TEMPERATURE

HYD PUMP SOV 1 & 2 Switches ..... CLOSED

Wait 7 minutes.

If HYD HI TEMP message does not extinguish and HYD SOV 1 (2) FAIL message is displayed:

LAND AS SOON AS POSSIBLE.

Thrust Lever (associated engine)..... IDLE

Start/Stop Knob (associated engine) ..... STOP

If the HYD HI TEMP message extinguishes:

HYD PUMP SOV Switch
(non-associated engine)..... OPEN

When appropriate:

ONE ENGINE INOPERATIVE APPROACH
AND LANDING Procedure ..... ACCOMPLISH

If HYD HI TEMP message extinguishes:

HYD PUMP SOV 2 Switch ..... OPEN

Monitor system.

If HYD HI TEMP is displayed again:

HYD PUMP SOV 2 Switch ..... CLOSED

Wait up to 7 minutes for HYD HI TEMP message extinguishing.

HYD PUMP SOV 1 Switch ..... OPEN

Monitor system.

If HYD HI TEMP message is displayed:

HYD PUMP SOV 1 Switch ..... CLOSED

HYDRAULIC LOW PRESSURE
Procedure..... ACCOMPLISH

Shutdown both engines as soon as possible after landing.

HYDRAULIC LOW PRESSURE

NOTE: Expect lower roll rates and no speedbrake actuation.

Avoid side slipping the airplane and high angle of attack.

For landing:

ABNORMAL LANDING GEAR EXTENSION Procedure ..... ACCOMPLISH

Landing configuration:

Flap ..... MAXIMUM AVAILABLE

Airspeed ..... $V_{REF\ FULL}$ + 17 KIAS

During landing run:

EMERGENCY BRAKING TECHNIQUE Procedure ..... ACCOMPLISH

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 2.70.

Inoperative items list:

- Multifunction Spoiler
- Normal Brakes
- Normal Landing Gear Operation
- Pusher Actuator
- Spring Loaded Rudder Booster

HYDRAULIC SOV 1 (2) FAILURE

Associated Engine ..... MONITOR

Hydraulic System ..... MONITOR

If associated with fire or HYD HI TEMP message:

HYD PUMP SOV 1 (2) Switch ..... CLOSED

ICE AND RAIN PROTECTION

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ANTI-ICE ENGINE 1 (2) FAILURE

Affected ENG Switch ..... OFF, THEN ON

If the A-I E1 (2) FAIL message persists:

Affected ENG Switch ..... ON

Icing Conditions ..... EXIT/AVOID

After exiting icing conditions:

Affected ENG Switch ..... OFF

If high engine vibration develops:

Associated Thrust Lever ..... IDLE

If the abnormal vibration persists:

ENGINE SHUTDOWN Procedure ..... ACCOMPLISH

ANTI-ICE LOW CAPACITY

Thrust Levers ..... ADVANCE

Advance thrust levers until reach N1 anti-icing bug, if displayed.

If A-I LO CAPACITY message persists, after 15 seconds:

WINGSTAB Switch ..... OFF

Icing Conditions ..... EXIT/AVOID

Airspeed ..... 165 KIAS MINIMUM

Landing configuration:

WARNING: DO NOT SELECT FLAP 2 OR HIGHER.

Bank Angle ..... BELOW 30°

Flap Lever 1

Airspeed ..... $V_{REF\ FULL}$ + 30 KIAS MINIMUM

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.40.

ANTI-ICE WING/STABILIZER FAILURE

Airspeed ..... 165 KIAS MINIMUM

Thrust Levers ..... SYMMETRIC POSITION

WINGSTAB Switch ..... OFF, THEN ON

If an asymmetric thrust operation is required:

- BLEED Switch (lower thrust engine) ..... OFF
- WINGSTAB Switch ..... OFF, THEN ON
- Altitude ..... 15000 ft MAXIMUM

In any case, if A-I WINGSTB FAIL message persists:

- Icing Conditions ..... EXIT/AVOID

Landing configuration:

WARNING: DO NOT SELECT FLAP 2 OR HIGHER.

- Bank Angle ..... BELOW 30°
- Flap Lever 1
- Airspeed ..... $V_{REF\ FULL}$ + 30 KIAS MINIMUM

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.40.

ANTI-ICE WING/STABILIZER LEAKAGE

Airspeed ..... 165 KIAS MINIMUM

WINGSTAB Switch ..... OFF

Exit and avoid icing conditions.

If A-I WINGSTB LEAK message persists:

- BLEED 1 Switch ..... OFF
- Altitude ..... 36000 ft MAXIMUM
- XBLEED Knob ..... CLOSED
- If A-I WINGSTB LEAK message persists:
  - BLEED 1 Switch ..... AUTO
  - BLEED 2 Switch ..... OFF
  - If A-I WINGSTB LEAK message persists:
    - BLEED 1 Switch ..... OFF
    - Crew Oxygen Masks ..... DON, 100%
    - Communication ..... ESTABLISH
    - Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER
    - At 10000 ft or MEA:
      - Pressurization DUMP Button ..... PUSH IN
      - ECS Knob ..... OFF VENT

Landing configuration:

WARNING: DO NOT SELECT FLAP 2 OR HIGHER.

- Bank Angle ..... BELOW 30°
- Flap Lever 1
- Airspeed ..... $V_{REF\ FULL}$ + 30 KIAS MINIMUM

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.40.

ANTI-ICE WING/STABILIZER INHIBIT

On ground:

Below 6°C:

Do not takeoff.

At or above 6°C:

WINGSTAB Switch ..... OFF, THEN ICE SPEED RESET

NOTE: If SAT is below 10°C, keep engine anti-ice system ON.

WARNING: TAKEOFF MUST NOT BE PERFORMED WITH THE MESSAGE PRESENTED.

In flight:

Airspeed ..... 165 KIAS MINIMUM

Flap ..... UP

WINGSTAB Switch ..... KEEP ON

For Airplanes Pre-Mod. SB 505-00-0001 ..... EXIT/AVOID ICING CONDITIONS

For Airplanes Post-Mod. SB 505-00-0001

Below 30000 ft ..... EXIT/AVOID ICING CONDITIONS

After leaving icing conditions and if there is no ice accretion on the airplane:

WINGSTAB Switch ..... OFF, THEN ICE SPEED RESET

WARNING: THE WINGSTAB SWITCH MUST BE KEPT ON UNTIL CREW IS CERTAIN THAT ALL ICE HAS BEEN REMOVED.

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During landing, if icing conditions are presented or if there is ice accretion:

WARNING: DO NOT SELECT FLAP 2 OR HIGHER.

Bank Angle ..... BELOW 30°
Flap Lever..... 1
Airspeed ..... $V_{REF\ FULL}$ + 30 KIAS MINIMUM

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.40.

ICE CONDITION

ENG 1 & 2 Switches ..... ON
WINGSTAB Switch ..... ON
WSHLD 1 & 2 Switches ..... ON

NOTE: Refer to the OPERATION IN ICING CONDITIONS Procedures in Section 3-04.

WINDSHIELD 1 (2) HEATER FAILURE

Both WSHLD Switches ..... OFF, THEN ON

If the WSHLD 1 (2) HTR FAIL message persists:

Associated WSHLD Switch ..... OFF
Icing Conditions (if required) ..... EXIT/AVOID

ANTI-ICE WING/STABILIZER ARMED

In flight:

Airspeed ..... 165 KIAS MINIMUM

Flap ..... ZERO

WINGSTAB Switch ..... KEEP ON

After leaving icing conditions and if there is no ice accretion on the airplane:

WINGSTAB Switch ..... OFF, THEN ICE SPEED RESET

WARNING: THE WINGSTAB SWITCH MUST BE KEPT ON UNTIL CREW IS CERTAIN THAT ALL ICE HAS BEEN REMOVED.

LANDING GEAR AND BRAKES

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LANDING GEAR LEVER DISAGREE

Airspeed ..... 250 KIAS MAXIMUM

LDG GEAR Lever ..... CYCLE

If the LG LEVER DISAG message persists and it was displayed after a landing gear extension:

ABNORMAL LANDING GEAR EXTENSION Procedure ..... ACCOMPLISH

If the LG LEVER DISAG message persists and it was displayed after a landing gear retraction:

LDG GEAR Lever ..... DN

Icing Conditions ..... EXIT/AVOID

LAND AS SOON AS PRACTICAL.

ANTISKID FAILURE

During landing run, apply the main brakes progressively until deceleration is felt and from this point, start to modulate the brakes to avoid tire blowout.

Landing configuration:

Flap ..... MAXIMUM AVAILABLE

Airspeed ..... $V_{REF\ FULL}$ + 2 KIAS

CAUTION:

- MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.60.
- MAIN BRAKES AVAILABLE WITH POSSIBLE CHANGED PEDAL RESPONSE. IF NO DECELERATION IS FELT DURING INITIAL APPLICATION OF THE PEDAL, CONTINUE APPLYING THE MAIN BRAKES PROGRESSIVELY UNTIL DECELERATION IS FELT (APPROXIMATELY HALF PEDAL COURSE) AND FROM THIS POINT, START TO MODULATE THE BRAKES TO AVOID TIRE BLOWOUT.

BRAKE FAILURE

Burn fuel to reduce the landing speed.

Landing configuration:

Flap ..... MAXIMUM AVAILABLE

Airspeed ..... $V_{REF\ FULL}$ + 2 KIAS

During landing run:

EMERGENCY BRAKING TECHNIQUE Procedure ..... ACCOMPLISH

CAUTION: MULTIPLY THE FLAP FULL UNFACTORED LANDING DISTANCE BY 1.60.

EMERGENCY BRAKE LOW PRESSURE

Emergency/parking brake is inoperative.

When parking the airplane, use wheel chocks.

LANDING GEAR WEIGHT-ON-WHEEL SYSTEM FAILURE

If climb performance is required to clear obstacles during takeoff and go-around, simultaneously proceed:

DN LCK REL Button ..... PRESS

LDG GEAR Lever ..... UP

The Weight on Wheel system failure may affect the functionality of some systems, as listed below. In this case, their associated failure procedures must be accomplished, at crew discretion.

Relevant affected systems:

- Environmental Control System
- Pressurization System
- Ice Protection System
- Stall Warning and Protection System

PARKING BRAKE NOT RELEASED

Before landing, release the emergency/parking brake.

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OXYGEN

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OXYGEN LOW PRESSURE

Oxygen Bottle Valve Handle..... PRESS TO RESTORE

If message persists, limit altitude to 14000 ft or MEA, whichever is higher.

PASSENGER OXYGEN NO PRESSURE

Set the OXYGEN SUPPLY CONTROL Knob to PAX OVRD.

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WARNING

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NO TAKEOFF CONFIGURATION

Configure the airplane for takeoff.

AURAL WARNING FAILURE

Monitor visual indications.

NOTE: Aural warnings, including TCAS, TAWS, TIS and STALL callouts are lost.

PUSHER FAILURE

PUSHER CUTOUT Button ..... PUSH IN

Avoid side slipping the airplane and high angle of attack.

NOTE: Low Speed Awareness cues (yellow and red band) and Stall aural warning will still be available.

PUSHER OFF

If the pusher was inadvertently cut off:

PUSHER CUTOUT Button ..... PUSH OUT

If the pusher was intentionally cut off:

Avoid side slipping the airplane and high angle of attack.

NOTE: Low Speed Awareness cues (yellow and red band) and Stall aural warning will still be available.

STALL WARNING AND PROTECTION SYSTEM FAILURE

Avoid side slipping the airplane and high angle of attack.

NOTE: Low Speed Awareness cues (yellow and red band) and green circle will not be shown on airspeed tape. Stall aural message will not be activated.

STALL WARNING AND PROTECTION SYSTEM FAULT

Avoid side slipping the airplane and high angle of attack.

For landing configuration:

Flap ..... MAXIMUM AVAILABLE

Maintain airspeed according to the following:

NO ICING	IN ICING/WITH ICE
$V_{REF\ FULL}$ + 6 KIAS	$V_{REF\ FULL}$ + 15 KIAS

CAUTION: TO DETERMINE THE MINIMUM SUITABLE LANDING DISTANCE, MULTIPLY THE UNFACTORED LANDING DISTANCE FOR FLAP FULL BY ONE OF THE FACTORS BELOW.

CORRECTION FACTOR	
NO ICING	**IN ICING/WITH ICE**
1.20	1.30

STALL WARNING AND PROTECTION SYSTEM UNTESTED

On ground, perform the pre-flight SWPS system test.

SMOKE PROCEDURES

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BAGGAGE SMOKE

LAND AS SOON AS POSSIBLE.

SMOKE/FIRE/FUME

ϕ Crew Oxygen Masks ..... DON, EMERGENCY THEN 100%

EMERGENCY may be selected during 2 minutes maximum then set to 100%.

ϕ Crew Oxygen Masks Auto Dilution Valve ..... CLOSED

ϕ Smoke Goggles (if available) ..... DON

ϕ Communication ..... ESTABLISH

ϕ Pressurization DUMP Button ..... PUSH IN

LAND AS SOON AS POSSIBLE.

WARNING: **ANY TIME SMOKE OR FUMES BECOME THE GREATEST THREAT, ACCOMPLISH THE SMOKE EVACUATION PROCEDURE.**

NOTE: Smoke will initially decrease due to pressurization dumping, even if the correct source has not been eliminated.

If smoke origin is identified:

Smoke Source ..... ELIMINATE

NOTE: Discharge of the entire contents of the fire extinguisher bottles into the occupied cabin area may exceed safe exposure limits. Use only the amount necessary to extinguish the fire.

If smoke source has been eliminated:

Pressurization DUMP Button ..... PUSH OUT

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If smoke origin is not identified:

EMERGENCY DESCENT Procedure..... ACCOMPLISH

If smoke persists:

GEN 2 Switch..... OFF

BUS TIE Knob..... 2 OPEN

Wait 1 minute and if smoke persists:

BUS TIE Knob..... AUTO

GEN 2 Switch..... AUTO

GEN 1 Switch..... OFF

BUS TIE Knob..... 1 OPEN

Wait 1 minute and if smoke persists:

GEN 1 Switch ..... AUTO

BATT 1 & 2 Switches..... OFF

Wait 1 minute and if smoke persists:

BUS TIE Knob ..... AUTO

BATT 1 & 2 Switches..... ON

Non-Essential Equipment..... OFF

Passenger Oxygen Supply ..... AS REQUIRED

Depending on which bus is off, refer to DC BUS 1 OFF, DC BUS 2 OFF or EMERGENCY BUS OFF Procedure for additional guidance.

NOTE: Even after turning on the Emergency Bus, the main brake will be inoperative and the Emergency/Parking brake must be used for landing. If situation permits in flight, the main brake may be recovered by cycling the BRAKE circuit breaker (B32) with the landing gear extended.

SMOKE EVACUATION

ϕ Crew Oxygen Masks ..... DON, EMERGENCY THEN 100%

EMERGENCY may be selected during 2 minutes maximum then set to 100%.

ϕ Crew Oxygen Masks Auto Dilution Valve ..... CLOSED

ϕ Smoke Goggles (if available) ..... DON

ϕ Oxygen SUPPLY CONTROL Knob..... CREW ONLY

ϕ Communication ..... ESTABLISH

ϕ Pressurization DUMP Button ..... PUSH IN

ϕ ECS Knob..... OFF VENT

LAND AS SOON AS POSSIBLE.

SIGNS/OUTLET Switch..... PED-BELTS/OFF

Altitude ..... 10000 ft OR MEA, WHICHEVER IS HIGHER

Thrust Levers..... IDLE

SPEED BRAKE Switch..... OPEN

Airspeed..... 250 KIAS/M_{MO} MAXIMUM

LDG GEAR Lever ..... DN

Transponder 7700

ATC..... NOTIFY

At 10000 ft or MEA:

Oxygen SUPPLY CONTROL Knob..... AS REQUIRED

If there is no evidence of fire in the cabin, set the oxygen SUPPLY CONTROL knob to PAX AUTO.

SPEED BRAKE Switch..... CLOSE

BAGGAGE SMOKE FAILURE

If baggage compartment is not empty:

LAND AS SOON AS PRACTICAL.

SECTION 5

PERFORMANCE

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INTRODUCTION

The performance information given in this Section is applicable to the PHENOM 300 airplane.

The performance data are based on the following conditions:

- Pertinent power less installation, air bleed, and accessory losses.
- Full temperature accountability within the operational limits for which the airplane is certified.

The performance information is not valid if:

- The airplane's gross weight exceeds the appropriate maximum allowable limits.
- Any of the limitations in Section 2 are not observed.
- A reading from any performance analysis is obtained by extrapolation (i.e. using values of parameters outside the range given on the graphs, tables or OPERA software.

PERFORMANCE CONFIGURATION

The configurations applicable to each performance phase are shown below.

	OPERATING ENGINES	TLA	FLAP	GEAR	AIRSPEED
TAKEOFF RUN	2 until V_{EF}, 1 after V_{EF}	TO/GA	1 or 2	DOWN	0 TO V_{LOF}
1ST SEGMENT	1	TO/GA	1 or 2	DOWN TO UP	V_{LOF} TO V_2
2ND SEGMENT	1	TO/GA	1 or 2	UP	V_2
3RD SEGMENT	1	TO/GA	TAKEOFF FLAP TO 0	UP	V_2 TO FINAL SEGMENT SPEED
FINAL SEGMENT	1	MAX CON	0	UP	FINAL SEGMENT SPEED
ENROUTE	1	MAX CON	0	UP	ENROUTE CLIMB SPEED
APPROACH CLIMB	1	TO/GA	1	UP	APPROACH CLIMB SPEED
LANDING CLIMB	2	TO/GA	3 or FULL	DOWN	LANDING CLIMB SPEED
LANDING	2	IDLE	3 or FULL	DOWN	V_{REF}

DEFINITIONS

OUTSIDE AIR TEMPERATURE – OAT OR SAT

Free static (ambient) temperature.

TOTAL AIR TEMPERATURE – TAT

Total temperature measured and corrected by the ADS system with airplane in motion.

INDICATED AIRSPEED – KIAS

It is the reading on the airspeed indicator (knots), as installed in the airplane. Zero instrument error is assumed by the OPERA.

CALIBRATED AIRSPEED – KCAS

It is the indicated airspeed corrected for the anemometric system position error.

TRUE AIRSPEED – TAS

It is the airplane speed in relation to the air and equal to the equivalent air speed corrected for air density. At sea level, ISA, the true airspeed is equal to the equivalent airspeed.

GROUND SPEED – GS

It is the airplane speed in relation to the ground. It is the true airspeed corrected for the wind speed.

TAKEOFF DECISION SPEED – V_1

It is the maximum speed in the takeoff at which the pilot must take the first action (e.g., apply brakes, reduce thrust) to stop the airplane within the accelerate-stop distance. V_1 also means the minimum speed in the takeoff, following a failure of the critical engine at V_{EF}, at which the pilot can continue the takeoff and achieve the required height above the takeoff surface within the takeoff distance.

STALL SPEED – V_S

It is the minimum steady flight speed at which the airplane is controllable.

ROTATION SPEED – V_R

It is the speed at which the pilot starts to rotate the airplane during the takeoff ground run.

LIFT-OFF SPEED – V_{LOF}

It is the speed at which the airplane first becomes airborne during takeoff.

FIRST SEGMENT

Starts at 35 ft above the takeoff surface, at the end of the one-engine-inoperative takeoff distance, and extends to the point where the landing gear is fully retracted using a constant V_2 speed and takeoff flap.

TAKEOFF SAFETY SPEED – V_2

It is the target speed to be attained at 35 ft height above runway surface, the critical engine having failed at V_{EF}.

SECOND SEGMENT

Extends from the end of the first segment up to the level-off height, with takeoff flap, gear up, and constant V_2 speed.

LEVEL-OFF HEIGHT

It is the height or altitude where the airplane is leveled for acceleration and flap retraction.

MINIMUM LEVEL-OFF HEIGHT

It is defined by regulations as 400 ft AGL. The user can define higher levels.

MAXIMUM LEVEL-OFF HEIGHT

It is the height where the takeoff thrust time limit occurs at the end of the final segment.

EXTENDED SECOND SEGMENT

It is an extension of the second takeoff climb segment, above the maximum level off height, to improve obstacle clearance performance.

THIRD (OR ACCELERATION) SEGMENT

Extends from the end of the second segment, at the level-off height, up to a point where the airplane is accelerated to final segment speed (V_{FS}) while retracting flap.

FINAL SEGMENT SPEED – V_{FS}

It is the speed to be achieved at the end of the acceleration segment and start of the final segment of the takeoff flight path, with one engine inoperative, landing gear retracted, and flap retracted.

FINAL SEGMENT

Extends from the end of the third segment to a gross height at least at 1500 ft AGL, with flap up and at final segment speed (V_{FS}).

NOISE LEVELS

The following Effective Perceived Noise Levels (EPNL's) comply with RBAC 36, corresponding to Title 14 CFR Part 36, Appendix B, Stage 4 maximum noise level requirements and were obtained by analysis of approved data from noise tests conducted under the provisions of Part 36 Amendment 36-28. The noise measurement and evaluation procedures used to obtain these noise levels are considered by ANAC to be equivalent to the Chapter 4 noise level required by the International Civil Aviation Organization (ICAO) in Annex 16, Volume I, Appendix 2, Amendment 7, effective March 21, 2002.

NOISE LEVEL IN EPNdb				
Engine Model	Noise Level	CONDITION		
		Flyover	Lateral	Approach
	Maximum Allowable	89.0	94.0	98.0
PW535E (1)	Actual	70.6	88.7	88.9
PW535E (2)	Actual	69.9	88.8	88.9
PW535E (3)	Actual	70.6	88.7	88.4

The noise levels for EMB-505 equipped with two Pratt & Whitney PW535E engines, were established as follows:

- Flyover: at maximum takeoff weight, flap setting 1, using thrust power cutback and V_2 + 20 KIAS;
- Lateral: at maximum takeoff weight, flap setting 1 and with all engines at maximum takeoff power setting;
- (1) and (2) Approach: at maximum landing weight, 3° glide slope, V_{REF} + 10 KIAS and flap setting FULL;
- (3) Approach: at maximum landing weight, 3° glide slope, V_{REF} + 10 KIAS and flap setting 3.

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NOTE: 1) Applicable to airplanes Post-Mod. SB 505-00-0008 and Post-Mod. SB 505-27-0011 or with an equivalent modifications factory incorporated.

NOTE: 2) Applicable to airplanes Pre-Mod. SB 505-00-0008 and Post-Mod. SB 505-27-0011 or with an equivalent modification factory incorporated.

NOTE: 3) Applicable to airplanes Pre-Mod. SB 505-27-0011 and Post-Mod. SB 505-00-0008 or with an equivalent modification factory incorporated.

No determination has been made by the Airworthiness Authority that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into, or out of any airport.

NOTE: Applicable to airplanes Pre-Mod. SB 505-27-0011 and Pre-Mod. SB 505-00-0008.

The following Effective Perceived Noise Levels (EPNL's) comply with the Chapter 4 noise limits set forth in RBHA 36, equivalent to ICAO Annex 16, Volume 1, Appendix 2, Amendment 8, effective July 11, 2005.

NOISE LEVEL IN EPNdb				
Engine Model	**Noise Level**	**CONDITION**		
		Flyover	**Lateral**	**Approach**
	Maximum Allowable	89.0	94.0	98.0
PW535E	**Actual**	69.9	88.8	88.5

The noise levels for EMB-505 equipped with two Pratt & Whitney PW535E engines, were established as follows:

- Flyover: at maximum takeoff weight, flap setting 1, using thrust power cutback and V_2 + 20 KIAS;
- Lateral: at maximum takeoff weight, flap setting 1 and with all engines at maximum takeoff power setting;
- Approach: at maximum landing weight, 3° glide slope, V_{REF} + 10 KIAS and flap setting 3.

No determination has been made by the Airworthiness Authority that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into, or out of any airport.

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SOFTWARE PRESENTATION

OPERA is the Optimized Performance Analyzer software certified to provide takeoff, landing and enroute approved performance data.

The OPERA replaces or supplements portions of the paper AFM, and is an ANAC approved source for that AFM information. As paper AFM performance information is generally based on a simplified analysis, it may show performance data more conservative than OPERA. Any modification to the ANAC approved OPERA software application, or subsequent alteration to the generated output, will cancel the airworthiness approval of the information, unless this change was approved by the appropriate airworthiness authority. This statement applies regardless of any approval notation printed on a generated output.

Performance wise, OPERA offers applicable aerodynamic and systems calculation options, to be selected according to the airplane specific configuration.

The OPERA installer incorporates the media identification, which will be displayed on the screen after installation and must be crosschecked with the AFM OPERA configuration.

The OPERA version is composed of two numbers. The second number identifies different databases. If there is an update only to the databases, only the second number moves on. When the OPERA is revised with changes on the Main Computer Interface or Calculation Modules the version moves on (e.g.: version 2.0 evolves to version 4.0).

Any time OPERA is revised, a new installer media is issued and the AFM is revised accordingly. After approval, both are provided to operators. Previous installer remains valid only if listed at Valid Versions table.

A dedicated User's Guide is also issued, as a separate document, providing detailed information on software usage aspects. In addition, the OPERA interface provides a Help feature with useful on line information.

If not mentioned, the latest Software Configuration Media incorporates all capabilities of the previous media.

The OPERA has been tested only on WINDOWS® XP and WINDOWS® 7 Operational Systems.

SOFTWARE CONFIGURATION

WARNING:
- **OPERA VERSION MUST BE IN ACCORDANCE WITH AIRPLANE CONFIGURATION.**
- **TAKEOFF AND LANDINGS ABOVE 8300 FT REQUIRE THE USE OF SUPPLEMENT 2 – HIGH ALTITUDE LANDING AND TAKEOFF OPERATION.**
- **VERSIONS NOT PRESENTED IN AFM ARE AUTOMATICALLY CANCELLED AND MUST NOT BE USED.**

CAUTION: AFTER USING THE AIRPORT ANALYSIS OPTION, CHECK THE MINIMUM REQUIRED RUNWAY LENGTH FOR TAKEOFF BY INPUTING THE ACTUAL TAKEOFF WEIGHT IN THE GIVEN WEIGHT OPTION.

NOTE: OPERA provides guidance information when operating from contaminated runways.

OP505AN535E version 2.0

The software OP505AN535E version 2.0 allows performance calculations for airplanes with the following configuration:

- PHENOM 300.
- PW535E engines.
- FADEC Software 3.04.
- Airplanes Pre-Mod. SB 505-00-0001.

NOTE: When operating from wet runways apply correction factors according to local regulations or guidance information suggested by the Embraer.

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OP505AN535E version 12.0

The software OP505AN535E version 12.0 allows performance calculations for airplanes with the following configuration:

- PHENOM 300.
- PW535E engines.
- FADEC Software 3.5 and on.
- Airplanes Post-Mod. SB 505-00-0001 or with an equivalent modification factory incorporated.

VALID VERSIONS

The table below presents valid OPERA versions.

AIRPLANE SERIAL NUMBER 505:	AIRPLANE CONFIGURATION	VALID OPERA VERSIONS	AFM LOCATION
00004 thru 00046	Pre-Mod. SB 505-00-0001.	2.0 (1)	Section 5-02
00004 thru 00046	Post-Mod. SB 505-00-0001.	12.0	
00047 and on	ALL		

NOTE: 1) The OPERA version 2.0 requires WINDOWS® XP Operational System.

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POSITION ERROR CORRECTIONS

The corrections to be applied to indicated airspeed or altitude in order to eliminate the effect of location of the static port on instrument readings are shown in the Airspeed Position Error Correction charts and in the Altitude Position Error Correction charts. No position error correction is required for ADS 1 and ADS 2, as their indication is already corrected. The position correction charts are only applicable for ADS Stand-by for flaps 0 (ZERO) and landing gear up position.

AIRSPEED POSITION ERROR CORRECTION CHART

USE

Enter the chart with indicated airspeed, considering the appropriate configuration, to read airspeed correction. The calibrated airspeed will be the sum of the indicated airspeed and airspeed correction.

EXAMPLE

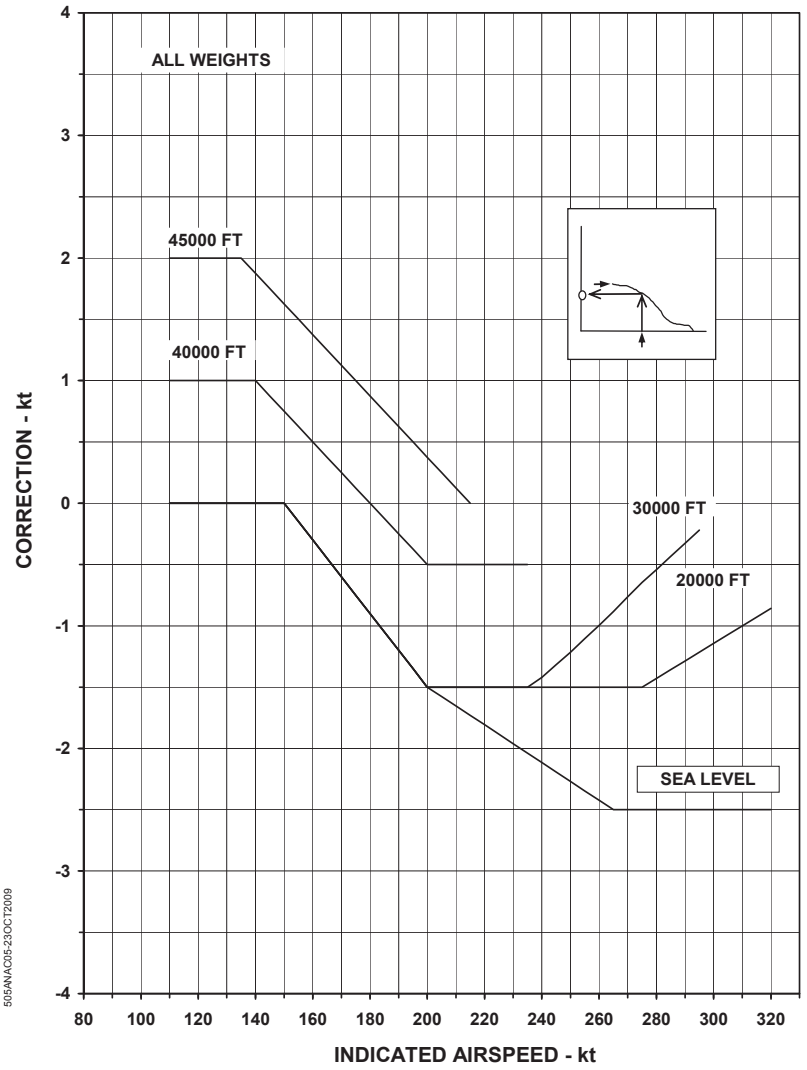
Given:

ADS Stand-by
Indicated Airspeed ..... 230 KIAS
Landing Gear ..... UP
Flaps ..... ZERO
Altitude ..... SEA LEVEL

Determine:

Airspeed Correction ..... -2.0
Calibrated Airspeed ..... 228 KCAS

AIRSPEED POSITION ERROR CORRECTION
ADS STAND-BY
LANDING GEAR UP - FLAPS ZERO



ALTITUDE POSITION ERROR CORRECTION CHARTS

USE

Enter the chart with indicated airspeed, the indicated pressure altitude considering the appropriate airplane configuration to read the altimetric correction. The true pressure altitude will be the indicated pressure altitude plus the altimetric correction.

EXAMPLE

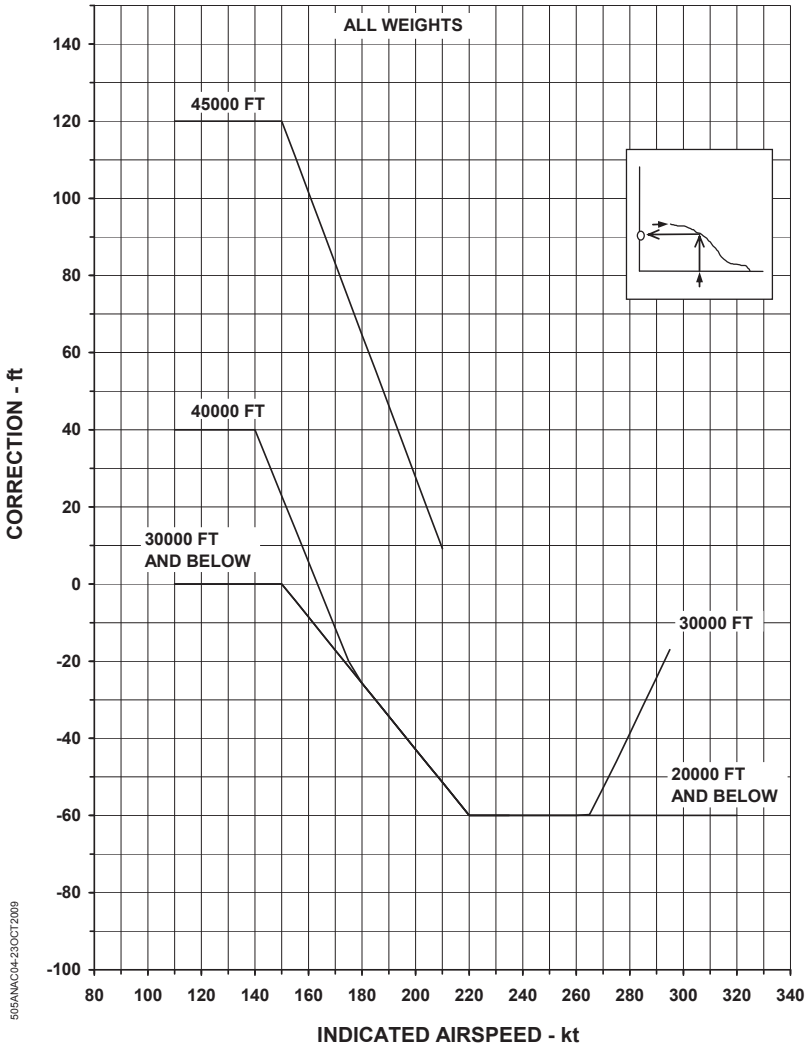
Given:

ADS Stand-by
Indicated Airspeed ..... 280 KIAS
Landing Gear ..... UP
Flaps ..... ZERO
Altitude ..... 30000 ft

Determine:

Altimetric Correction ..... -40 ft
True Pressure Altitude ..... 29960 ft

ALTITUDE POSITION ERROR CORRECTION
ADS STAND-BY
LANDING GEAR UP - FLAPS ZERO



STALL SPEED

ENGINE ICE PROTECTION OFF/ON – WINGSTAB OFF

NOTE: This table presents the stall speed value according to the airplane bank angle for the indicated weights with landing gear and flap up.

MTOW (kg)	BANK ANGLE				
	0°	15°	30°	45°	60°
	STALL SPEED (KIAS)				
8150	100	102	107	119	141
8340	101	103	108	120	143

NOTE: This table presents the stall speed value according to the airplane bank angle for the indicated weights with landing gear down and landing flap 3 or FULL.

MLW (kg)	FLAP	BANK ANGLE				
		0°	15°	30°	45°	60°
		STALL SPEED (KIAS)				
7650	3	89	90	95	106	125
	FULL	88	89	94	104	124
7730	3	89	91	96	106	126
	FULL	88	90	95	105	125

ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED)

NOTE: This table presents the stall speed value according to the airplane bank angle for the indicated weights with landing gear and flap up.

MTOW (kg)	BANK ANGLE				
	0°	15°	30°	45°	60°
	STALL SPEED (KIAS)				
8150	111	113	120	132	157
8340	113	114	121	134	159

NOTE: This table presents the stall speed value according to the airplane bank angle for the indicated weights with landing gear down and landing flap 3 or FULL.

MLW (kg)	FLAP	BANK ANGLE				
		0°	15°	30°	45°	60°
		STALL SPEED (KIAS)				
7650	3	95	97	102	113	135
	FULL	93	95	100	110	131
7730	3	96	97	103	114	135
	FULL	93	95	100	111	132

THRUST SETTING TABLES

Thrust setting table is presented for various pressure altitudes and static air temperatures, with engine bleed open, and anti-ice on or off.

The following tables present Takeoff N1 setting for TO/GA mode on PW535E engines.

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N1 FOR T/O MODE
ANTI-ICE OFF
AIRSPEED: 0 KIAS

PW535E ENGINES

Pressure Altitude (ft)	Static Air Temperature (°C)								
	-40	-35	-30	-25	-20	-15	-10	-5	0
-1000	77.0	77.9	78.7	79.5	80.3	81.1	81.9	82.6	83.4
0	78.1	79.0	79.8	80.6	81.4	82.2	83.0	83.8	84.5
1000	79.2	80.1	80.9	81.8	82.6	83.4	84.2	85.0	85.7
2000	80.4	81.2	82.1	82.9	83.7	84.5	85.4	86.1	86.9
3000	81.5	82.3	83.2	84.0	84.9	85.7	86.5	87.3	88.1
4000	82.5	83.4	84.3	85.2	86.0	86.9	87.7	88.5	89.3
5000	83.7	84.6	85.5	86.3	87.2	88.0	88.9	89.7	90.5
6000	84.5	85.4	86.3	87.2	88.1	88.9	89.8	90.6	91.5
7000	84.7	85.7	86.6	87.5	88.4	89.3	90.1	91.0	91.6
8000	85.0	85.9	86.9	87.8	88.7	89.6	90.4	91.3	91.0
9000	85.5	86.4	87.3	88.2	89.1	90.0	90.8	91.5	90.9
10000	85.8	86.7	87.6	88.5	89.4	90.3	91.2	91.6	91.1
11000	86.3	87.2	88.1	89.0	89.9	90.8	91.7	91.5	90.9
12000	86.7	87.6	88.6	89.5	90.4	91.3	91.9	91.4	90.7
13000	87.4	88.3	89.2	90.1	91.0	91.9	91.8	91.2	90.5
14000	87.8	88.8	89.8	90.8	91.7	92.4	91.7	91.0	90.3

Pressure Altitude (ft)	Static Air Temperature (°C)								
	5	10	15	20	25	30	35	40	45
-1000	84.1	84.9	85.6	86.3	87.1	87.8	88.4	87.0	85.6
0	85.3	86.0	86.8	87.5	88.3	89.0	88.2	86.8	85.4
1000	86.5	87.3	88.0	88.8	89.5	89.3	87.9	86.4	85.0
2000	87.7	88.5	89.2	90.0	90.0	89.0	87.5	86.1	84.6
3000	88.9	89.7	90.4	90.6	89.8	88.6	87.2	85.7	-
4000	90.1	90.9	91.1	90.4	89.6	88.3	86.8	85.3	-
5000	91.3	91.6	91.0	90.4	89.5	88.1	86.6	85.1	-
6000	91.8	91.2	90.6	90.0	89.2	87.6	86.1	-	-
7000	91.2	90.7	90.1	89.5	88.4	86.9	85.4	-	-
8000	90.5	90.2	89.8	89.0	87.6	86.0	-	-	-
9000	90.5	90.1	89.8	88.9	87.2	85.6	-	-	-
10000	90.7	90.3	89.8	88.8	87.2	85.6	-	-	-
11000	90.4	89.9	89.1	88.0	86.3	-	-	-	-
12000	90.1	89.5	88.5	87.1	85.5	-	-	-	-
13000	89.8	89.1	87.9	86.5	-	-	-	-	-
14000	89.6	88.7	87.5	85.9	-	-	-	-	-

N1 FOR T/O MODE
ANTI-ICE ON
AIRSPEED: 0 KIAS

PW535E ENGINES

Pressure Altitude (ft)	Static Air Temperature (°C)				
	-35	-30	-25	-20	-15
-1000	78.0	78.8	79.6	80.4	81.2
0	79.1	79.9	80.7	81.5	82.3
1000	80.2	81.0	81.8	82.7	83.5
2000	81.3	82.2	83.0	83.8	84.6
3000	82.4	83.3	84.1	84.9	85.8
4000	83.6	84.4	85.3	86.1	86.9
5000	84.7	85.6	86.4	87.3	88.1
6000	85.5	86.4	87.3	88.2	89.0
7000	85.8	86.7	87.6	88.5	89.4
8000	86.2	87.0	87.9	88.8	89.4
9000	86.5	87.4	88.3	89.2	89.1
10000	86.8	87.7	88.6	89.5	89.2

Pressure Altitude (ft)	Static Air Temperature (°C)			
	-10	-5	0	5
-1000	82.0	82.7	83.5	84.2
0	83.1	83.8	84.6	85.4
1000	84.3	85.0	85.8	86.6
2000	85.4	86.2	87.0	87.8
3000	86.6	87.4	88.2	89.0
4000	87.8	88.6	89.4	88.9
5000	89.0	89.8	89.4	88.4
6000	89.7	89.7	88.8	87.9
7000	89.5	88.7	87.9	86.9
8000	88.6	87.7	86.8	85.5
9000	88.3	87.4	86.4	85.1
10000	88.3	87.4	86.3	84.9

TAKEOFF DATA

TAKEOFF TECHNIQUE

The takeoff performance data in this manual is based on the following conditions:

- Thrust lever set to TO/GA position with the airplane stopped and brakes applied;
- Brakes released after N1 stabilized;
- When V_R is attained the airplane is rotated to appropriate pitch angle according to flap selection until 35 ft or until reaching V_2;
- Pitch angle adjusted as required to maintain V_2;
- Landing gear retracted when a positive rate of climb is established.

SIMPLIFIED TAKEOFF ANALYSIS TABLES

Simplified Takeoff Analysis tables are presented for a set of pressure altitudes, temperatures and minimum required runway lengths for the conditions below:

- Takeoff flap 1 or 2;
- Ice Protection OFF or ON (WINGSTAB+ENG 1/2);
- ATR OFF;
- Given weight calculation type;
- Dry runway;
- No clearway;
- No stopway;
- Zero slope;
- Zero wind;
- Minimum level-off height (400 ft);
- Optimum V_1;
- No obstacles (analysis assumption).

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NOTE: - ATR OFF does not ensure a conservative performance when compared to ATR ON due to V_{MCG} characteristics.

- The Limited Weight columns represent the weight limited by climb or brake energy for the given temperature. Always check the structural weight limitation on Section 2.
- Refer to the OPERA software configuration to check if any special setting is required in addition to the choices above.

EXAMPLE

Given:

Airplane Takeoff Weight	8000 kg
Airport Pressure Altitude	0 ft
Outside Air Temperature	20°C
Ice Protection	OFF
Flap	1

Determine:

Minimum Required Runway Length	1087 m
V_1	107 KIAS
V_R	107 KIAS
V_2	118 KIAS
V_{FS}	135 KIAS
Limited Weight	8340 kg

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: -1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	648 104/104/118	665 104/104/117	710 104/104/116	755 103/103/115	809 104/104/115	899 107/107/118	983 110/110/120	8340
-35	657 104/104/118	674 104/104/117	720 104/104/116	766 103/103/115	820 104/104/115	911 107/107/118	997 110/110/120	8340
-30	667 104/104/118	684 104/104/117	730 104/104/116	776 103/103/115	831 104/104/115	923 107/107/118	1010 110/110/120	8340
-25	677 104/104/118	693 104/104/117	740 104/104/116	787 103/103/115	843 104/104/115	936 107/107/118	1024 110/110/120	8340
-20	687 104/104/118	703 104/104/117	750 104/104/116	798 103/103/115	854 104/104/115	949 107/107/118	1039 110/110/120	8340
-15	696 104/104/118	713 104/104/117	760 104/104/116	808 103/103/115	866 104/104/115	962 107/107/118	1053 110/110/120	8340
-10	706 104/104/118	723 104/104/117	770 104/104/116	819 103/103/115	878 104/104/115	975 107/107/118	1067 110/110/120	8340
-5	715 104/104/118	733 104/104/117	780 104/104/116	830 103/103/115	890 104/104/115	988 107/107/118	1081 110/110/120	8340
0	725 104/104/118	743 104/104/117	789 103/103/116	840 103/103/115	901 104/104/115	1001 107/107/118	1096 110/110/120	8340
5	734 104/104/118	752 104/104/117	800 103/103/116	851 103/103/115	914 104/104/115	1015 107/107/118	1111 110/110/120	8340
10	743 104/104/117	762 104/104/116	810 103/103/115	862 103/103/114	927 104/104/115	1030 107/107/118	1128 110/110/120	8340
15	752 104/104/117	771 104/104/116	820 103/103/115	873 103/103/114	941 104/104/115	1046 107/107/118	1144 110/110/120	8340
20	761 104/104/117	780 103/103/116	831 103/103/115	884 103/103/114	954 104/104/115	1062 107/107/118	1162 110/110/120	8340
25	770 104/104/117	790 103/103/116	842 103/103/115	896 103/103/114	968 104/104/115	1078 107/107/118	1179 110/110/120	8340
30	777 103/103/116	806 103/103/115	863 102/102/114	918 102/102/113	1003 104/104/115	1124 108/108/118	1227 110/110/120	8340
35	778 99/99/111	837 99/99/110	895 99/99/109	998 102/102/112	1123 105/105/115	1249 108/108/118	1358 111/111/120	8340
40	810 96/96/107	868 96/96/106	985 99/99/109	1115 103/103/112	1246 106/106/115	1382 109/109/118	1517 112/112/120	8340
45	839 93/93/103	960 97/97/106	1098 100/100/109	1234 104/104/112	1382 107/107/115	1547 110/110/118	1690 113/113/120	8340
50	930 94/94/103	1073 97/97/106	1218 101/101/109	1378 104/104/112	1550 108/108/115	1724 111/111/118	1892 113/113/120	8340
52	975 94/94/103	1121 98/98/106	1272 101/101/109	1445 105/105/112	1620 108/108/115	1810 111/111/118	1982 114/114/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 0 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	666 105/105/118	682 104/104/117	726 104/104/116	773 104/104/115	826 104/104/115	915 107/107/118	1002 110/110/120	8340
-35	677 105/105/118	693 104/104/117	736 104/104/116	784 103/103/115	837 104/104/115	927 107/107/118	1015 110/110/120	8340
-30	687 105/105/118	703 104/104/117	747 104/104/116	795 103/103/115	849 104/104/115	940 107/107/118	1030 110/110/120	8340
-25	696 105/105/118	713 104/104/117	757 104/104/116	806 103/103/115	861 104/104/115	953 107/107/118	1044 110/110/120	8340
-20	706 104/104/118	724 104/104/117	767 104/104/116	817 103/103/115	873 104/104/115	967 107/107/118	1059 110/110/120	8340
-15	716 104/104/118	734 104/104/117	777 104/104/116	828 103/103/115	885 104/104/115	981 107/107/118	1074 110/110/120	8340
-10	726 104/104/118	744 104/104/117	788 104/104/116	839 103/103/115	898 104/104/115	995 107/107/118	1089 110/110/120	8340
-5	736 104/104/118	754 104/104/117	798 104/104/116	850 103/103/115	910 104/104/115	1008 107/107/118	1104 110/110/120	8340
0	745 104/104/118	764 104/104/117	808 104/104/116	861 103/103/115	922 104/104/115	1022 107/107/118	1119 110/110/120	8340
5	755 104/104/118	774 104/104/117	819 103/103/116	872 103/103/115	936 104/104/115	1038 107/107/118	1136 110/110/120	8340
10	764 104/104/117	784 104/104/116	830 103/103/116	884 103/103/115	950 104/104/115	1054 107/107/118	1153 110/110/120	8340
15	773 104/104/117	793 104/104/116	841 103/103/115	895 103/103/114	964 104/104/115	1070 107/107/118	1171 110/110/120	8340
20	782 104/104/117	803 103/103/116	852 103/103/115	907 103/103/114	978 104/104/115	1087 107/107/118	1189 110/110/120	8340
25	792 104/104/117	813 103/103/116	872 103/103/115	927 103/103/114	1004 104/104/115	1121 107/107/118	1225 110/110/120	8340
30	786 101/101/113	840 100/100/112	898 100/100/111	977 102/102/112	1097 105/105/115	1224 108/108/118	1333 111/111/120	8340
35	812 97/97/109	872 97/97/108	963 99/99/109	1092 103/103/112	1223 106/106/115	1357 109/109/118	1483 112/112/120	8340
40	843 94/94/104	939 96/96/106	1078 100/100/109	1214 103/103/112	1353 107/107/115	1517 110/110/118	1659 112/112/120	8340
45	909 93/93/103	1051 97/97/106	1197 101/101/109	1345 104/104/112	1517 107/107/115	1691 111/111/118	1848 113/113/120	8340
50	1021 94/94/103	1171 98/98/106	1334 102/102/109	1514 105/105/112	1695 108/108/115	1898 111/111/118	2076 114/114/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	684 105/105/118	700 104/104/117	744 104/104/116	792 103/103/115	847 104/104/115	938 107/107/118	1027 110/110/120	8340
-35	694 105/105/118	711 104/104/117	755 104/104/116	804 103/103/115	859 104/104/115	952 107/107/118	1041 110/110/120	8340
-30	705 105/105/118	722 104/104/117	765 104/104/116	815 103/103/115	871 104/104/115	965 107/107/118	1056 110/110/120	8340
-25	715 104/104/118	732 104/104/117	776 104/104/116	826 103/103/115	884 104/104/115	979 107/107/118	1071 110/110/120	8340
-20	725 104/104/118	743 104/104/117	787 104/104/116	838 103/103/115	896 104/104/115	993 107/107/118	1087 110/110/120	8340
-15	735 104/104/118	753 104/104/117	797 104/104/116	849 103/103/115	909 104/104/115	1007 107/107/118	1102 110/110/120	8340
-10	745 104/104/118	764 104/104/117	808 104/104/116	861 103/103/115	922 104/104/115	1021 107/107/118	1118 110/110/120	8340
-5	755 104/104/118	775 104/104/117	819 104/104/116	872 103/103/115	934 104/104/115	1035 107/107/118	1133 110/110/120	8340
0	765 104/104/118	785 104/104/117	829 104/104/116	883 103/103/115	947 104/104/115	1050 107/107/118	1149 110/110/120	8340
5	775 104/104/118	795 104/104/117	840 103/103/116	895 103/103/115	961 104/104/115	1066 107/107/118	1166 110/110/120	8340
10	784 104/104/117	805 104/104/116	851 103/103/115	907 103/103/115	975 104/104/115	1082 107/107/118	1184 110/110/120	8340
15	794 104/104/117	815 104/104/116	863 103/103/115	919 103/103/114	990 104/104/115	1099 107/107/118	1202 110/110/120	8340
20	803 104/104/117	825 103/103/116	880 103/103/115	936 103/103/114	1012 104/104/115	1128 107/107/118	1233 110/110/120	8340
25	801 101/101/114	848 101/101/113	908 101/101/112	979 101/101/112	1096 105/105/115	1224 108/108/118	1333 111/111/120	8340
30	816 98/98/110	877 98/98/109	952 99/99/109	1074 102/102/112	1206 106/106/115	1339 109/109/118	1455 111/111/120	8340
35	848 95/95/105	930 96/96/106	1062 100/100/109	1200 103/103/112	1339 106/106/115	1494 110/110/118	1637 112/112/120	8340
40	900 93/93/103	1035 97/97/106	1182 101/101/109	1326 104/104/112	1494 107/107/115	1668 110/110/118	1819 113/113/120	8340
45	1003 94/94/103	1154 98/98/106	1308 101/101/109	1488 105/105/112	1669 108/108/115	1863 111/111/118	2042 114/114/120	8340
48	1074 94/94/103	1230 98/98/106	1408 102/102/109	1594 105/105/112	1787 108/108/115	2001 111/111/118	2186 114/114/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 2000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	701 104/104/118	719 104/104/117	764 104/104/116	813 103/103/115	872 104/104/115	967 107/107/118	1058 110/110/120	8340
-35	712 104/104/118	729 104/104/117	775 104/104/116	825 103/103/115	885 104/104/115	981 107/107/118	1073 110/110/120	8340
-30	722 104/104/118	740 104/104/117	786 104/104/116	837 103/103/115	897 104/104/115	995 107/107/118	1088 110/110/120	8340
-25	733 104/104/118	751 104/104/117	797 104/104/116	849 103/103/115	910 104/104/115	1009 107/107/118	1104 110/110/120	8340
-20	743 104/104/118	762 104/104/117	808 103/103/116	860 103/103/115	923 104/104/115	1024 107/107/118	1120 110/110/120	8340
-15	754 104/104/118	773 104/104/117	819 103/103/116	872 103/103/115	936 104/104/115	1038 107/107/118	1136 110/110/120	8340
-10	764 104/104/118	784 104/104/117	830 103/103/116	884 103/103/115	949 104/104/115	1053 107/107/118	1152 110/110/120	8340
-5	774 104/104/117	794 104/104/116	841 103/103/115	895 103/103/115	963 104/104/115	1068 107/107/118	1169 110/110/120	8340
0	784 104/104/117	805 104/104/116	852 103/103/115	907 103/103/114	977 104/104/115	1084 107/107/118	1186 110/110/120	8340
5	794 104/104/117	815 104/104/116	863 103/103/115	919 103/103/114	991 104/104/115	1100 107/107/118	1203 110/110/120	8340
10	804 104/104/117	825 103/103/116	875 103/103/115	931 103/103/114	1005 104/104/115	1117 107/107/118	1221 110/110/120	8340
15	814 104/104/117	835 103/103/116	887 103/103/115	945 103/103/114	1022 104/104/115	1137 107/107/118	1243 110/110/120	8340
20	814 101/101/114	858 101/101/113	918 101/101/112	986 101/101/112	1102 105/105/115	1232 108/108/118	1342 111/111/120	8340
25	823 99/99/111	885 98/98/110	952 99/99/109	1069 102/102/112	1202 105/105/115	1337 109/109/118	1453 111/111/120	8340
30	853 96/96/107	919 96/96/106	1044 99/99/109	1182 103/103/112	1321 106/106/115	1466 109/109/118	1610 112/112/120	8340
35	892 93/93/103	1021 97/97/106	1168 100/100/109	1313 104/104/112	1472 107/107/115	1648 110/110/118	1799 113/113/120	8340
40	988 94/94/103	1139 97/97/106	1294 101/101/109	1465 104/104/112	1647 108/108/115	1832 111/111/118	2012 113/113/120	8340
45	1106 95/95/103	1265 98/98/106	1451 102/102/109	1641 105/105/112	1842 108/108/115	2062 112/112/118	2251 114/114/120	8340
46	1131 95/95/103	1292 98/98/106	1486 102/102/109	1678 105/105/112	1888 109/109/115	2110 112/112/118	2302 114/114/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 3000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	714 103/103/117	734 103/103/116	787 103/103/115	837 102/102/114	911 104/104/115	1015 107/107/118	1109 110/110/120	8340
-35	725 103/103/117	744 103/103/116	798 103/103/115	849 102/102/114	924 104/104/115	1030 107/107/118	1125 110/110/120	8340
-30	736 103/103/117	755 103/103/115	809 103/103/114	861 102/102/114	937 104/104/115	1045 107/107/118	1141 110/110/120	8340
-25	746 103/103/116	766 103/103/115	821 103/103/114	873 102/102/114	951 104/104/115	1060 107/107/118	1158 110/110/120	8340
-20	757 103/103/116	777 103/103/115	832 102/102/114	885 102/102/113	965 104/104/115	1075 107/107/118	1175 110/110/120	8340
-15	768 103/103/116	788 103/103/115	843 102/102/114	898 102/102/113	979 104/104/115	1091 107/107/118	1192 110/110/120	8340
-10	778 103/103/116	799 103/103/115	855 102/102/114	910 102/102/113	993 104/104/115	1107 107/107/118	1209 110/110/120	8340
-5	789 103/103/116	809 103/103/115	866 102/102/114	922 102/102/113	1007 104/104/115	1122 107/107/118	1226 110/110/120	8340
0	799 103/103/116	820 103/103/115	878 102/102/114	934 102/102/113	1021 104/104/115	1138 107/107/118	1244 110/110/120	8340
5	809 103/103/116	831 103/103/115	889 102/102/114	947 102/102/113	1036 104/104/115	1156 107/107/118	1263 110/110/120	8340
10	819 103/103/116	842 102/102/115	901 102/102/114	959 102/102/113	1051 104/104/115	1173 108/108/118	1282 110/110/120	8340
15	827 102/102/114	867 101/101/113	929 101/101/112	995 101/101/112	1110 105/105/115	1241 108/108/118	1353 111/111/120	8340
20	832 99/99/111	895 99/99/110	958 99/99/109	1074 102/102/112	1208 105/105/115	1344 109/109/118	1462 111/111/120	8340
25	860 96/96/108	923 96/96/107	1037 99/99/109	1176 103/103/112	1316 106/106/115	1458 109/109/118	1597 112/112/120	8340
30	890 93/93/104	1004 96/96/106	1152 100/100/109	1297 103/103/112	1446 107/107/115	1623 110/110/118	1775 113/113/120	8340
35	973 94/94/103	1125 97/97/106	1280 101/101/109	1442 104/104/112	1626 108/108/115	1812 111/111/118	1982 113/113/120	8340
40	1091 94/94/103	1251 98/98/106	1427 102/102/109	1618 105/105/112	1812 108/108/115	2031 111/111/118	2221 114/114/120	8340
44	1190 95/95/103	1365 99/99/106	1568 102/102/109	1767 106/106/112	1994 109/109/115	2225 112/112/118	- -	8279
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 4000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	727 102/102/115	757 102/102/114	812 102/102/113	863 101/101/112	956 104/104/115	1070 108/108/118	1168 110/110/120	8340
-35	738 102/102/115	768 102/102/114	824 102/102/113	876 101/101/112	970 104/104/115	1086 108/108/118	1185 110/110/120	8340
-30	749 102/102/115	779 102/102/114	835 102/102/113	888 101/101/112	984 104/104/115	1102 108/108/118	1202 110/110/120	8340
-25	760 102/102/115	790 102/102/114	847 101/101/113	900 101/101/112	999 104/104/115	1118 108/108/118	1220 110/110/120	8340
-20	771 102/102/115	801 102/102/114	859 101/101/113	913 101/101/112	1013 104/104/115	1134 108/108/118	1238 110/110/120	8340
-15	782 102/102/115	812 102/102/114	870 101/101/113	926 101/101/112	1028 104/104/115	1151 108/108/118	1255 110/110/120	8340
-10	793 102/102/115	823 102/102/114	882 101/101/113	939 101/101/112	1043 104/104/115	1167 108/108/118	1274 110/110/120	8340
-5	803 102/102/115	834 102/102/114	894 101/101/113	952 101/101/112	1057 104/104/115	1184 108/108/118	1292 110/110/120	8340
0	814 102/102/115	845 102/102/114	906 101/101/113	965 101/101/112	1073 105/105/115	1201 108/108/118	1310 110/110/120	8340
5	824 102/102/115	856 101/101/114	918 101/101/113	980 101/101/112	1090 105/105/115	1220 108/108/118	1331 110/110/120	8340
10	837 102/102/114	875 101/101/113	938 101/101/112	1004 101/101/112	1119 105/105/115	1251 108/108/118	1365 111/111/120	8340
15	841 99/99/111	906 99/99/110	968 99/99/109	1082 102/102/112	1218 105/105/115	1355 109/109/118	1474 111/111/120	8340
20	869 97/97/108	934 96/96/107	1039 99/99/109	1179 103/103/112	1320 106/106/115	1464 109/109/118	1600 112/112/120	8340
25	897 94/94/105	993 96/96/106	1136 100/100/109	1282 103/103/112	1430 107/107/115	1599 110/110/118	1751 112/112/120	8340
30	961 93/93/103	1108 97/97/106	1264 101/101/109	1418 104/104/112	1600 107/107/115	1787 110/110/118	1949 113/113/120	8340
35	1076 94/94/103	1237 98/98/106	1404 101/101/109	1596 105/105/112	1790 108/108/115	2001 111/111/118	2192 114/114/120	8340
40	1200 95/95/103	1375 99/99/106	1581 102/102/109	1783 106/106/112	2010 109/109/115	2244 112/112/118	2446 114/114/120	8340
42	1253 95/95/103	1445 99/99/106	1655 102/102/109	1871 106/106/112	2107 109/109/115	2347 112/112/118	- -	8140
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 5000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	741 101/101/114	785 101/101/113	840 100/100/112	910 101/101/112	1017 105/105/115	1135 108/108/118	1236 111/111/120	8340
-35	753 101/101/114	796 101/101/113	852 100/100/112	923 101/101/112	1032 105/105/115	1152 108/108/118	1255 111/111/120	8340
-30	764 101/101/114	807 101/101/113	865 100/100/112	936 101/101/112	1046 105/105/115	1168 108/108/118	1273 111/111/120	8340
-25	775 101/101/114	818 101/101/113	877 100/100/112	950 101/101/112	1062 105/105/115	1186 108/108/118	1291 111/111/120	8340
-20	786 101/101/113	830 100/100/112	889 100/100/111	964 101/101/112	1077 105/105/115	1203 108/108/118	1310 111/111/120	8340
-15	797 101/101/113	841 100/100/112	901 100/100/111	978 101/101/112	1093 105/105/115	1220 108/108/118	1330 111/111/120	8340
-10	808 101/101/113	852 100/100/112	913 100/100/111	991 101/101/112	1108 105/105/115	1238 108/108/118	1349 111/111/120	8340
-5	819 101/101/113	864 100/100/112	925 100/100/111	1006 101/101/112	1125 105/105/115	1256 108/108/118	1368 111/111/120	8340
0	830 101/101/113	875 100/100/112	938 100/100/111	1020 101/101/112	1140 105/105/115	1274 108/108/118	1388 111/111/120	8340
5	841 101/101/113	887 100/100/112	950 100/100/111	1035 101/101/112	1158 105/105/115	1293 108/108/118	1409 111/111/120	8340
10	852 100/100/112	917 99/99/111	981 99/99/110	1089 102/102/112	1226 105/105/115	1366 108/108/118	1486 111/111/120	8340
15	879 97/97/108	945 97/97/107	1046 99/99/109	1185 103/103/112	1329 106/106/115	1474 109/109/118	1609 112/112/120	8340
20	907 95/95/105	997 96/96/106	1137 100/100/109	1284 103/103/112	1434 106/106/115	1598 110/110/118	1751 112/112/120	8340
25	948 93/93/103	1086 97/97/106	1242 100/100/109	1397 104/104/112	1567 107/107/115	1754 110/110/118	1915 113/113/120	8340
30	1051 94/94/103	1212 98/98/106	1377 101/101/109	1560 105/105/112	1755 108/108/115	1954 111/111/118	2145 114/114/120	8340
35	1179 95/95/103	1348 98/98/106	1548 102/102/109	1750 105/105/112	1966 109/109/115	2200 112/112/118	2402 114/114/120	8340
40	1310 95/95/103	1516 99/99/106	1733 103/103/109	1965 106/106/112	2209 109/109/115	- -	- -	7983
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 6000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	757 100/100/112	813 99/99/111	870 99/99/110	961 102/102/112	1081 105/105/115	1204 108/108/118	1310 111/111/120	8340
-35	768 100/100/112	825 99/99/111	882 99/99/110	975 102/102/112	1097 105/105/115	1222 108/108/118	1329 111/111/120	8340
-30	780 100/100/112	836 99/99/111	895 99/99/110	989 102/102/112	1112 105/105/115	1239 108/108/118	1348 111/111/120	8340
-25	791 100/100/112	848 99/99/111	908 99/99/110	1004 102/102/112	1129 105/105/115	1258 108/108/118	1368 111/111/120	8340
-20	802 100/100/112	860 99/99/111	920 99/99/110	1019 102/102/112	1146 105/105/115	1276 108/108/118	1389 111/111/120	8340
-15	814 100/100/112	872 99/99/111	933 99/99/110	1033 102/102/112	1162 105/105/115	1295 108/108/118	1409 111/111/120	8340
-10	825 99/99/112	884 99/99/111	946 99/99/110	1048 102/102/112	1179 105/105/115	1314 108/108/118	1429 111/111/120	8340
-5	837 99/99/112	895 99/99/111	958 99/99/110	1063 102/102/112	1196 105/105/115	1332 108/108/118	1450 111/111/120	8340
0	847 99/99/112	907 99/99/111	971 99/99/110	1078 102/102/112	1213 105/105/115	1352 108/108/118	1471 111/111/120	8340
5	865 99/99/111	931 99/99/110	995 99/99/109	1115 102/102/112	1255 105/105/115	1397 109/109/118	1519 111/111/120	8340
10	893 97/97/108	960 96/96/107	1068 99/99/109	1211 103/103/112	1357 106/106/115	1505 109/109/118	1645 112/112/120	8340
15	920 94/94/105	1016 96/96/106	1160 100/100/109	1310 103/103/112	1463 106/106/115	1632 110/110/118	1788 112/112/120	8340
20	960 93/93/103	1101 97/97/106	1259 100/100/109	1416 104/104/112	1589 107/107/115	1778 110/110/118	1942 113/113/120	8340
25	1042 94/94/103	1205 97/97/106	1371 101/101/109	1549 104/104/112	1745 108/108/115	1944 111/111/118	2132 113/113/120	8340
30	1169 94/94/103	1340 98/98/106	1533 102/102/109	1737 105/105/112	1946 108/108/115	2182 111/111/118	2385 114/114/120	8340
35	1301 95/95/103	1500 99/99/106	1719 102/102/109	1944 106/106/112	2189 109/109/115	2439 112/112/118	- -	8177
38	1389 96/96/103	1610 99/99/106	1839 103/103/109	2089 106/106/112	2344 109/109/115	- -	- -	7828
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 7000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	787 98/98/109	846 97/97/108	926 99/99/109	1044 102/102/112	1172 106/106/115	1301 109/109/118	1412 111/111/120	8340
-35	798 98/98/109	859 97/97/108	940 99/99/109	1059 102/102/112	1189 106/106/115	1321 109/109/118	1434 111/111/120	8340
-30	809 98/98/109	871 97/97/108	953 99/99/109	1074 102/102/112	1206 106/106/115	1340 109/109/118	1455 111/111/120	8340
-25	821 98/98/109	883 97/97/108	967 99/99/109	1090 102/102/112	1224 106/106/115	1360 109/109/118	1476 111/111/120	8340
-20	832 98/98/109	895 97/97/108	981 99/99/109	1106 102/102/112	1242 106/106/115	1380 109/109/118	1498 111/111/120	8340
-15	844 98/98/109	908 97/97/108	995 99/99/109	1122 102/102/112	1260 106/106/115	1400 109/109/118	1520 111/111/120	8340
-10	855 97/97/109	920 97/97/108	1009 99/99/109	1138 102/102/112	1278 106/106/115	1420 109/109/118	1542 111/111/120	8340
-5	866 97/97/109	932 97/97/108	1024 99/99/109	1155 102/102/112	1297 106/106/115	1441 109/109/118	1565 111/111/120	8340
0	879 97/97/109	945 97/97/108	1039 99/99/109	1172 102/102/112	1317 106/106/115	1463 109/109/118	1589 111/111/120	8340
5	911 96/96/107	978 96/96/106	1106 99/99/109	1253 103/103/112	1402 106/106/115	1554 109/109/118	1704 112/112/120	8340
10	937 94/94/104	1046 96/96/106	1197 100/100/109	1350 103/103/112	1506 107/107/115	1684 110/110/118	1844 112/112/120	8340
15	985 93/93/103	1131 97/97/106	1292 100/100/109	1452 104/104/112	1631 107/107/115	1824 110/110/118	1991 113/113/120	8340
20	1059 94/94/103	1224 97/97/106	1393 101/101/109	1573 104/104/112	1772 108/108/115	1974 111/111/118	2163 113/113/120	8340
25	1171 94/94/103	1344 98/98/106	1535 102/102/109	1741 105/105/112	1950 108/108/115	2186 111/111/118	2392 114/114/120	8340
30	1304 95/95/103	1501 99/99/106	1721 102/102/109	1944 106/106/112	2192 109/109/115	2445 112/112/118	2664 115/115/120	8340
35	1461 96/96/103	1689 100/100/106	1933 103/103/109	2192 106/106/112	2456 110/110/115	- -	- -	7783
36	1498 96/96/103	1728 100/100/106	1982 103/103/109	2245 107/107/112	2512 110/110/115	- -	- -	7673
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 8000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	820 96/96/107	883 96/96/106	1000 99/99/109	1133 103/103/112	1268 106/106/115	1405 109/109/118	1540 112/112/120	8340
-35	832 96/96/107	896 96/96/106	1014 99/99/109	1150 103/103/112	1287 106/106/115	1425 109/109/118	1563 112/112/120	8340
-30	843 96/96/107	909 96/96/106	1028 99/99/109	1166 103/103/112	1305 106/106/115	1446 109/109/118	1585 112/112/120	8340
-25	855 96/96/107	922 96/96/106	1044 99/99/109	1183 103/103/112	1325 106/106/115	1468 109/109/118	1609 112/112/120	8340
-20	867 96/96/107	935 96/96/106	1059 99/99/109	1201 103/103/112	1344 106/106/115	1489 109/109/118	1633 112/112/120	8340
-15	879 96/96/107	949 96/96/106	1074 99/99/109	1218 103/103/112	1363 106/106/115	1511 109/109/118	1657 112/112/120	8340
-10	891 96/96/107	962 96/96/106	1089 99/99/109	1235 103/103/112	1383 106/106/115	1533 109/109/118	1681 112/112/120	8340
-5	903 96/96/107	976 96/96/106	1105 99/99/109	1253 103/103/112	1403 106/106/115	1555 109/109/118	1705 112/112/120	8340
0	930 95/95/106	1013 96/96/106	1152 100/100/109	1303 103/103/112	1456 106/106/115	1617 110/110/118	1775 112/112/120	8340
5	957 93/93/103	1084 96/96/106	1243 100/100/109	1401 104/104/112	1561 107/107/115	1752 110/110/118	1915 113/113/120	8340
10	1013 93/93/103	1166 97/97/106	1332 101/101/109	1497 104/104/112	1688 107/107/115	1886 110/110/118	2057 113/113/120	8340
15	1079 94/94/103	1246 97/97/106	1417 101/101/109	1598 104/104/112	1800 108/108/115	2004 111/111/118	2194 113/113/120	8340
20	1181 94/94/103	1355 98/98/106	1542 102/102/109	1750 105/105/112	1961 108/108/115	2194 111/111/118	2401 114/114/120	8340
25	1315 95/95/103	1510 99/99/106	1733 102/102/109	1955 106/106/112	2205 109/109/115	2461 112/112/118	2684 115/115/120	8340
30	1481 96/96/103	1713 100/100/106	1960 103/103/109	2224 106/106/112	2491 110/110/115	- -	- -	7843
34	1632 96/96/103	1882 100/100/106	2162 104/104/109	2439 107/107/112	- -	- -	- -	7411
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 9000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	850 95/95/105	935 96/96/106	1065 100/100/109	1204 103/103/112	1345 106/106/115	1495 110/110/118	1639 112/112/120	8340
-35	862 94/94/105	949 96/96/106	1081 100/100/109	1222 103/103/112	1364 106/106/115	1517 110/110/118	1664 112/112/120	8340
-30	874 94/94/105	963 96/96/106	1097 100/100/109	1240 103/103/112	1385 106/106/115	1540 110/110/118	1688 112/112/120	8340
-25	887 94/94/105	977 96/96/106	1113 100/100/109	1258 103/103/112	1405 106/106/115	1563 110/110/118	1713 112/112/120	8340
-20	899 94/94/105	991 96/96/106	1129 100/100/109	1276 103/103/112	1426 106/106/115	1586 110/110/118	1739 112/112/120	8340
-15	911 94/94/105	1005 96/96/106	1145 100/100/109	1295 103/103/112	1447 106/106/115	1610 110/110/118	1765 112/112/120	8340
-10	924 94/94/105	1020 96/96/106	1162 100/100/109	1314 103/103/112	1468 106/106/115	1634 110/110/118	1791 112/112/120	8340
-5	937 94/94/105	1035 96/96/106	1180 100/100/109	1334 103/103/112	1490 106/106/115	1659 110/110/118	1819 112/112/120	8340
0	970 93/93/103	1097 96/96/106	1259 100/100/109	1419 104/104/112	1581 107/107/115	1773 110/110/118	1939 113/113/120	8340
5	1032 93/93/103	1188 97/97/106	1355 101/101/109	1522 104/104/112	1714 107/107/115	1914 110/110/118	2088 113/113/120	8340
10	1099 94/94/103	1269 97/97/106	1442 101/101/109	1627 104/104/112	1831 108/108/115	2039 111/111/118	2232 113/113/120	8340
15	1181 94/94/103	1357 98/98/106	1540 101/101/109	1750 105/105/112	1962 108/108/115	2192 111/111/118	2401 114/114/120	8340
20	1293 95/95/103	1478 99/99/106	1701 102/102/109	1921 105/105/112	2162 109/109/115	2418 112/112/118	2640 114/114/120	8340
25	1447 96/96/103	1679 99/99/106	1917 103/103/109	2179 106/106/112	2446 109/109/115	2720 113/113/118	- -	8054
30	1640 96/96/103	1888 100/100/106	2171 104/104/109	2452 107/107/112	- -	- -	- -	7500
32	1718 97/97/103	1986 100/100/106	2277 104/104/109	2565 107/107/112	- -	- -	- -	7284
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 10000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	881 93/93/104	991 96/96/106	1135 100/100/109	1280 103/103/112	1427 107/107/115	1596 110/110/118	1746 113/113/120	8340
-35	894 93/93/104	1006 96/96/106	1152 100/100/109	1299 103/103/112	1448 107/107/115	1620 110/110/118	1772 112/112/120	8340
-30	906 93/93/104	1020 96/96/106	1169 100/100/109	1318 103/103/112	1470 107/107/115	1644 110/110/118	1799 112/112/120	8340
-25	919 93/93/104	1035 96/96/106	1186 100/100/109	1338 103/103/112	1492 107/107/115	1669 110/110/118	1826 112/112/120	8340
-20	932 93/93/104	1051 96/96/106	1204 100/100/109	1358 103/103/112	1514 107/107/115	1694 110/110/118	1853 113/113/120	8340
-15	945 93/93/104	1066 96/96/106	1221 100/100/109	1378 103/103/112	1536 107/107/115	1719 110/110/118	1881 113/113/120	8340
-10	958 93/93/104	1081 96/96/106	1239 100/100/109	1398 103/103/112	1559 107/107/115	1744 110/110/118	1909 113/113/120	8340
-5	974 93/93/103	1100 96/96/106	1261 100/100/109	1422 103/103/112	1586 107/107/115	1775 110/110/118	1943 113/113/120	8340
0	1035 93/93/103	1189 97/97/106	1358 101/101/109	1526 104/104/112	1715 107/107/115	1917 110/110/118	2093 113/113/120	8340
5	1107 94/94/103	1279 97/97/106	1455 101/101/109	1642 104/104/112	1849 108/108/115	2061 111/111/118	2255 113/113/120	8340
10	1190 94/94/103	1369 98/98/106	1553 101/101/109	1767 105/105/112	1983 108/108/115	2214 111/111/118	2426 114/114/120	8340
15	1290 95/95/103	1477 98/98/106	1694 102/102/109	1917 105/105/112	2153 109/109/115	2410 112/112/118	2633 114/114/120	8340
20	1413 95/95/103	1632 99/99/106	1869 103/103/109	2117 106/106/112	2383 109/109/115	2655 112/112/118	- -	8215
25	1585 96/96/103	1830 100/100/106	2099 103/103/109	2377 107/107/112	2662 110/110/115	- -	- -	7679
30	1791 97/97/103	2073 100/100/106	2373 104/104/109	- -	- -	- -	- -	7136
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 11000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	925 93/93/103	1056 97/97/106	1209 100/100/109	1361 104/104/112	1521 107/107/115	1703 110/110/118	1860 113/113/120	8340
-35	938 93/93/103	1071 97/97/106	1227 100/100/109	1381 104/104/112	1543 107/107/115	1729 110/110/118	1888 113/113/120	8340
-30	952 93/93/103	1087 97/97/106	1245 100/100/109	1401 104/104/112	1566 107/107/115	1754 110/110/118	1916 113/113/120	8340
-25	966 93/93/103	1103 97/97/106	1264 100/100/109	1422 104/104/112	1589 107/107/115	1781 110/110/118	1945 113/113/120	8340
-20	980 93/93/103	1119 97/97/106	1282 100/100/109	1443 104/104/112	1613 107/107/115	1807 110/110/118	1974 113/113/120	8340
-15	994 93/93/103	1135 97/97/106	1301 100/100/109	1464 104/104/112	1637 107/107/115	1834 110/110/118	2003 113/113/120	8340
-10	1008 93/93/103	1152 97/97/106	1320 100/100/109	1486 104/104/112	1661 107/107/115	1861 110/110/118	2033 113/113/120	8340
-5	1051 93/93/103	1206 97/97/106	1378 101/101/109	1548 104/104/112	1739 107/107/115	1945 110/110/118	2123 113/113/120	8340
0	1131 94/94/103	1306 97/97/106	1485 101/101/109	1676 104/104/112	1888 108/108/115	2103 111/111/118	2303 113/113/120	8340
5	1225 94/94/103	1407 98/98/106	1600 102/102/109	1817 105/105/112	2038 108/108/115	2278 111/111/118	2494 114/114/120	8340
10	1321 95/95/103	1511 98/98/106	1735 102/102/109	1962 105/105/112	2204 109/109/115	2466 112/112/118	2693 114/114/120	8340
15	1435 95/95/103	1656 99/99/106	1897 103/103/109	2146 106/106/112	2416 109/109/115	2692 112/112/118	- -	8245
20	1592 96/96/103	1840 100/100/106	2108 103/103/109	2390 107/107/112	2677 110/110/115	- -	- -	7740
25	1792 97/97/103	2072 100/100/106	2375 104/104/109	2677 107/107/112	- -	- -	- -	7214
28	1931 97/97/103	2238 101/101/106	2554 104/104/109	- -	- -	- -	- -	6894
V_{FS}	117	121	125	129	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 12000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	982 93/93/103	1129 97/97/106	1288 101/101/109	1447 104/104/112	1627 107/107/115	1818 110/110/118	1982 113/113/120	8340
-35	996 93/93/103	1145 97/97/106	1308 101/101/109	1468 104/104/112	1651 107/107/115	1845 110/110/118	2012 113/113/120	8340
-30	1010 93/93/103	1162 97/97/106	1327 101/101/109	1490 104/104/112	1676 107/107/115	1873 110/110/118	2042 113/113/120	8340
-25	1025 93/93/103	1179 97/97/106	1346 101/101/109	1512 104/104/112	1701 107/107/115	1901 110/110/118	2073 113/113/120	8340
-20	1040 93/93/103	1196 97/97/106	1366 101/101/109	1535 104/104/112	1726 107/107/115	1929 110/110/118	2104 113/113/120	8340
-15	1055 93/93/103	1214 97/97/106	1386 101/101/109	1557 104/104/112	1752 107/107/115	1958 110/110/118	2135 113/113/120	8340
-10	1072 93/93/103	1232 97/97/106	1408 101/101/109	1581 104/104/112	1779 107/107/115	1988 110/110/118	2169 113/113/120	8340
-5	1144 94/94/103	1322 97/97/106	1504 101/101/109	1696 104/104/112	1910 108/108/115	2128 111/111/118	2329 113/113/120	8340
0	1245 94/94/103	1431 98/98/106	1627 102/102/109	1848 105/105/112	2072 108/108/115	2316 111/111/118	2536 114/114/120	8340
5	1349 95/95/103	1543 99/99/106	1773 102/102/109	2004 105/105/112	2252 109/109/115	2518 112/112/118	2749 114/114/120	8340
10	1458 95/95/103	1683 99/99/106	1927 103/103/109	2180 106/106/112	2455 109/109/115	2736 112/112/118	- -	8267
15	1604 96/96/103	1855 100/100/106	2122 103/103/109	2407 106/106/112	2698 110/110/115	- -	- -	7807
20	1796 97/97/103	2073 100/100/106	2379 104/104/109	2684 107/107/112	- -	- -	- -	7295
25	2029 97/97/103	2347 101/101/106	- -	- -	- -	- -	- -	6786
26	2084 97/97/103	2406 101/101/106	- -	- -	- -	- -	- -	6693
V_{FS}	117	121	125	129	132	135	138	

<u>WARNING:</u> THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 13000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	1040 94/94/103	1204 97/97/106	1371 101/101/109	1540 104/104/112	1738 108/108/115	1937 111/111/118	2115 113/113/120	8340
-35	1056 94/94/103	1221 97/97/106	1391 101/101/109	1563 104/104/112	1764 108/108/115	1966 111/111/118	2146 113/113/120	8340
-30	1071 94/94/103	1239 97/97/106	1411 101/101/109	1586 104/104/112	1790 108/108/115	1996 111/111/118	2178 113/113/120	8340
-25	1087 94/94/103	1257 97/97/106	1432 101/101/109	1610 104/104/112	1817 108/108/115	2026 111/111/118	2211 113/113/120	8340
-20	1103 94/94/103	1276 97/97/106	1453 101/101/109	1634 104/104/112	1844 108/108/115	2056 111/111/118	2245 113/113/120	8340
-15	1119 94/94/103	1294 97/97/106	1475 101/101/109	1658 104/104/112	1871 108/108/115	2087 111/111/118	2278 113/113/120	8340
-10	1159 94/94/103	1339 97/97/106	1523 101/101/109	1716 104/104/112	1933 108/108/115	2154 111/111/118	2356 113/113/120	8340
-5	1260 94/94/103	1448 98/98/106	1645 102/102/109	1869 105/105/112	2096 108/108/115	2342 111/111/118	2565 114/114/120	8340
0	1368 95/95/103	1565 99/99/106	1797 102/102/109	2032 105/105/112	2283 109/109/115	2554 112/112/118	2789 114/114/120	8340
5	1481 95/95/103	1709 99/99/106	1957 103/103/109	2212 106/106/112	2491 109/109/115	2776 112/112/118	- -	8286
10	1616 96/96/103	1870 100/100/106	2137 103/103/109	2426 106/106/112	2720 110/110/115	- -	- -	7863
15	1796 96/96/103	2069 100/100/106	2378 104/104/109	2684 107/107/112	- -	- -	- -	7396
20	2014 97/97/103	2334 101/101/106	2663 104/104/109	- -	- -	- -	- -	6889
24	2230 98/98/103	2567 101/101/106	- -	- -	- -	- -	- -	6527
V_{FS}	117	121	125	129	132	136	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 14000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	1110 94/94/103	1282 98/98/106	1457 101/101/109	1648 105/105/112	1855 108/108/115	2064 111/111/118	2262 114/114/120	8340
-35	1127 94/94/103	1301 98/98/106	1479 101/101/109	1672 105/105/112	1882 108/108/115	2095 111/111/118	2296 114/114/120	8340
-30	1143 94/94/103	1320 98/98/106	1501 101/101/109	1697 105/105/112	1910 108/108/115	2126 111/111/118	2331 114/114/120	8340
-25	1160 94/94/103	1340 98/98/106	1523 101/101/109	1723 105/105/112	1939 108/108/115	2159 111/111/118	2366 114/114/120	8340
-20	1177 94/94/103	1359 98/98/106	1545 101/101/109	1748 105/105/112	1968 108/108/115	2191 111/111/118	2401 114/114/120	8340
-15	1194 94/94/103	1379 98/98/106	1568 101/101/109	1774 105/105/112	1997 108/108/115	2223 111/111/118	2437 114/114/120	8340
-10	1275 94/94/103	1466 98/98/106	1664 102/102/109	1891 105/105/112	2122 108/108/115	2369 111/111/118	2596 114/114/120	8340
-5	1385 95/95/103	1585 99/99/106	1819 102/102/109	2056 105/105/112	2309 109/109/115	2584 112/112/118	2822 114/114/120	8340
0	1500 95/95/103	1729 99/99/106	1981 103/103/109	2239 106/106/112	2522 109/109/115	2811 112/112/118	- -	8313
5	1632 96/96/103	1890 100/100/106	2159 103/103/109	2451 106/106/112	2749 110/110/115	- -	- -	7906
10	1796 96/96/103	2066 100/100/106	2377 104/104/109	2685 107/107/112	- -	- -	- -	7488
15	1995 97/97/103	2314 101/101/106	2645 104/104/109	- -	- -	- -	- -	7013
20	2258 98/98/103	2601 101/101/106	- -	- -	- -	- -	- -	6554
22	2373 98/98/103	- -	- -	- -	- -	- -	- -	6377
V_{FS}	117	121	125	129	132	136	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: -1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	747 109/109/122	735 106/106/118	724 103/103/114	715 100/100/111	714 98/98/108	770 101/101/111	820 104/104/113	8340
-35	758 109/109/122	746 106/106/118	735 103/103/114	726 100/100/111	724 98/98/108	782 101/101/111	833 104/104/113	8340
-30	769 109/109/122	757 106/106/118	746 103/103/114	737 100/100/111	735 98/98/108	794 101/101/111	846 104/104/113	8340
-25	780 109/109/122	768 106/106/118	757 103/103/114	747 100/100/111	746 98/98/108	806 101/101/111	859 104/104/113	8340
-20	791 109/109/122	779 106/106/118	768 103/103/114	758 100/100/111	757 98/98/108	818 101/101/111	872 104/104/113	8340
-15	802 109/109/122	790 106/106/118	779 103/103/114	769 100/100/111	768 98/98/108	830 101/101/111	884 104/104/113	8340
-10	813 109/109/122	800 106/106/118	790 103/103/114	780 100/100/111	779 98/98/108	842 101/101/111	897 104/104/113	8340
-5	824 109/109/121	811 106/106/118	800 103/103/114	790 100/100/111	790 98/98/108	854 101/101/111	910 104/104/113	8340
0	835 109/109/121	822 106/106/118	811 103/103/114	800 100/100/111	801 98/98/108	866 101/101/111	924 104/104/113	8340
5	845 109/109/121	832 106/106/118	821 103/103/114	811 100/100/111	813 98/98/108	878 101/101/111	937 104/104/113	8340
10	856 109/109/121	842 106/106/118	831 102/102/114	821 100/100/111	824 98/98/108	891 101/101/111	951 104/104/113	8340
15	866 109/109/121	853 105/105/117	841 102/102/114	831 100/100/110	836 98/98/108	904 101/101/111	965 104/104/113	8340
20	876 109/109/121	863 105/105/117	851 102/102/114	841 99/99/110	848 98/98/108	917 101/101/111	979 104/104/113	8340
25	886 109/109/121	873 105/105/117	861 102/102/114	851 99/99/110	860 98/98/108	931 102/102/111	994 104/104/113	8340
30	895 108/108/120	882 105/105/116	871 102/102/113	860 99/99/109	883 99/99/108	956 102/102/111	1022 105/105/113	8340
35	888 104/104/115	876 101/101/112	864 98/98/108	866 96/96/106	943 100/100/108	1038 103/103/111	1134 106/106/113	8340
40	883 101/101/111	871 98/98/107	860 95/95/104	927 97/97/106	1035 101/101/108	1161 104/104/111	1278 107/107/113	8340
45	878 97/97/106	867 94/94/103	905 95/95/103	1025 98/98/106	1160 102/102/108	1310 105/105/111	1448 107/107/113	8340
50	873 94/94/102	883 92/92/100	1011 96/96/103	1155 99/99/106	1316 102/102/108	1494 106/106/111	- -	8141
52	872 92/92/100	925 92/92/100	1063 96/96/103	1217 100/100/106	1386 103/103/108	- -	- -	7922
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 0 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	769 110/110/122	756 106/106/118	745 103/103/115	735 100/100/111	732 98/98/108	790 101/101/111	842 104/104/113	8340
-35	780 110/110/122	767 106/106/118	756 103/103/115	746 100/100/111	743 98/98/108	802 101/101/111	855 104/104/113	8340
-30	792 110/110/122	779 106/106/118	768 103/103/115	758 100/100/111	755 98/98/108	815 101/101/111	868 104/104/113	8340
-25	803 110/110/122	790 106/106/118	779 103/103/115	768 100/100/111	766 98/98/108	827 101/101/111	881 104/104/113	8340
-20	814 109/109/122	801 106/106/118	790 103/103/115	779 100/100/111	777 98/98/108	839 101/101/111	895 104/104/113	8340
-15	826 109/109/122	812 106/106/118	801 103/103/115	790 100/100/111	789 98/98/108	852 101/101/111	908 104/104/113	8340
-10	837 109/109/122	823 106/106/118	812 103/103/114	801 100/100/111	800 98/98/108	864 101/101/111	922 104/104/113	8340
-5	848 109/109/122	834 106/106/118	823 103/103/114	812 100/100/111	812 98/98/108	877 101/101/111	935 104/104/113	8340
0	859 109/109/122	845 106/106/118	833 103/103/114	823 100/100/111	823 98/98/108	889 101/101/111	949 104/104/113	8340
5	870 109/109/122	855 106/106/118	844 103/103/114	833 100/100/111	835 98/98/108	903 101/101/111	963 104/104/113	8340
10	880 109/109/121	866 106/106/118	854 103/103/114	843 100/100/111	847 98/98/108	916 101/101/111	978 104/104/113	8340
15	891 109/109/121	876 106/106/118	865 102/102/114	854 100/100/111	859 98/98/108	929 101/101/111	992 104/104/113	8340
20	901 109/109/121	887 105/105/117	875 102/102/114	864 99/99/110	872 98/98/108	943 101/101/111	1007 104/104/113	8340
25	912 109/109/121	899 105/105/117	887 102/102/113	876 99/99/110	889 98/98/108	963 102/102/111	1029 104/104/113	8340
30	906 105/105/117	894 102/102/113	882 99/99/110	871 97/97/106	937 99/99/108	1017 103/103/111	1111 105/105/113	8340
35	901 102/102/112	889 99/99/109	877 96/96/105	922 97/97/106	1014 100/100/108	1132 104/104/111	1248 106/106/113	8340
40	896 98/98/108	885 95/95/104	902 94/94/103	1006 98/98/106	1133 101/101/108	1276 104/104/111	1413 107/107/113	8340
45	892 95/95/104	880 92/92/100	991 95/95/103	1127 99/99/106	1280 102/102/108	1448 105/105/111	- -	8314
50	887 92/92/99	968 93/93/100	1117 96/96/103	1281 100/100/106	1462 103/103/108	- -	- -	7774
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	789 110/110/122	776 106/106/118	765 103/103/115	754 100/100/111	752 98/98/108	812 101/101/111	865 104/104/113	8340
-35	801 109/109/122	787 106/106/118	776 103/103/115	766 100/100/111	764 98/98/108	825 101/101/111	879 104/104/113	8340
-30	813 109/109/122	799 106/106/118	788 103/103/115	777 100/100/111	775 98/98/108	837 101/101/111	893 104/104/113	8340
-25	824 109/109/122	810 106/106/118	799 103/103/115	789 100/100/111	787 98/98/108	850 101/101/111	906 104/104/113	8340
-20	836 109/109/122	822 106/106/118	810 103/103/115	800 100/100/111	799 98/98/108	863 101/101/111	920 104/104/113	8340
-15	847 109/109/122	833 106/106/118	822 103/103/114	811 100/100/111	811 98/98/108	876 101/101/111	934 104/104/113	8340
-10	859 109/109/122	845 106/106/118	833 103/103/114	822 100/100/111	822 98/98/108	889 101/101/111	948 104/104/113	8340
-5	870 109/109/122	856 106/106/118	844 103/103/114	834 100/100/111	834 98/98/108	902 101/101/111	962 104/104/113	8340
0	882 109/109/122	867 106/106/118	855 103/103/114	845 100/100/111	846 98/98/108	915 101/101/111	976 104/104/113	8340
5	893 109/109/122	878 106/106/118	866 103/103/114	855 100/100/111	858 98/98/108	928 101/101/111	991 104/104/113	8340
10	904 109/109/121	889 106/106/118	877 102/102/114	866 100/100/111	871 98/98/108	942 101/101/111	1006 104/104/113	8340
15	914 109/109/121	900 105/105/118	888 102/102/114	877 99/99/110	883 98/98/108	956 101/101/111	1021 104/104/113	8340
20	926 109/109/121	911 105/105/117	899 102/102/114	888 99/99/110	899 98/98/108	974 102/102/111	1040 104/104/113	8340
25	923 106/106/118	910 103/103/114	898 100/100/110	887 97/97/107	945 99/99/108	1025 102/102/111	1112 105/105/113	8340
30	919 103/103/114	906 100/100/110	895 97/97/106	920 97/97/106	1003 100/100/108	1116 103/103/111	1225 106/106/113	8340
35	914 99/99/109	902 96/96/106	901 94/94/103	993 98/98/106	1115 101/101/108	1257 104/104/111	1388 107/107/113	8340
40	910 96/96/105	898 93/93/101	977 95/95/103	1106 99/99/106	1255 102/102/108	1422 105/105/111	1575 108/108/113	8340
45	906 93/93/101	953 92/92/100	1094 96/96/103	1252 99/99/106	1427 103/103/108	- -	- -	7928
48	903 91/91/98	1019 93/93/100	1180 97/97/103	1356 100/100/106	1553 103/103/108	- -	- -	7608
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 2000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	809 109/109/122	795 106/106/118	784 103/103/114	774 100/100/111	775 98/98/108	836 101/101/111	892 104/104/113	8340
-35	821 109/109/122	807 106/106/118	796 103/103/114	785 100/100/111	786 98/98/108	850 101/101/111	906 104/104/113	8340
-30	833 109/109/122	819 106/106/118	808 103/103/114	797 100/100/111	798 98/98/108	863 101/101/111	920 104/104/113	8340
-25	845 109/109/122	831 106/106/118	820 103/103/114	809 100/100/111	810 98/98/108	876 101/101/111	934 104/104/113	8340
-20	857 109/109/122	843 106/106/118	831 103/103/114	820 100/100/111	823 98/98/108	889 101/101/111	949 104/104/113	8340
-15	869 109/109/122	855 106/106/118	843 103/103/114	832 100/100/111	835 98/98/108	903 101/101/111	963 104/104/113	8340
-10	881 109/109/122	866 106/106/118	854 103/103/114	843 100/100/111	847 98/98/108	916 101/101/111	977 104/104/113	8340
-5	892 109/109/121	878 106/106/118	866 102/102/114	855 100/100/111	859 98/98/108	929 101/101/111	992 104/104/113	8340
0	904 109/109/121	889 106/106/118	877 102/102/114	866 100/100/111	872 98/98/108	943 101/101/111	1007 104/104/113	8340
5	915 109/109/121	900 105/105/118	888 102/102/114	877 99/99/110	884 98/98/108	957 101/101/111	1022 104/104/113	8340
10	926 109/109/121	912 105/105/117	899 102/102/114	888 99/99/110	897 98/98/108	971 101/101/111	1037 104/104/113	8340
15	937 109/109/121	923 105/105/117	910 102/102/114	899 99/99/110	910 98/98/108	986 102/102/111	1053 104/104/113	8340
20	938 106/106/118	925 103/103/114	913 100/100/111	902 97/97/107	955 99/99/108	1036 102/102/111	1119 105/105/113	8340
25	936 103/103/114	923 100/100/111	912 97/97/107	926 96/96/106	1009 100/100/108	1113 103/103/111	1218 106/106/113	8340
30	932 100/100/110	920 97/97/107	909 94/94/103	985 97/97/106	1099 101/101/108	1233 104/104/111	1358 107/107/113	8340
35	928 97/97/106	916 94/94/102	965 95/95/103	1092 98/98/106	1237 102/102/108	1398 105/105/111	1544 108/108/113	8340
40	924 93/93/102	939 92/92/100	1075 96/96/103	1229 99/99/106	1401 103/103/108	1590 106/106/111	- -	8077
45	923 90/90/98	1050 93/93/100	1216 97/97/103	1400 100/100/106	- -	- -	- -	7550
46	932 89/89/97	1078 93/93/100	1251 97/97/103	1436 100/100/106	- -	- -	- -	7445
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 3000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	824 108/108/120	810 105/105/117	799 102/102/113	789 99/99/110	804 98/98/108	869 102/102/111	927 104/104/113	8340
-35	836 108/108/120	823 105/105/117	811 102/102/113	801 99/99/110	816 98/98/108	883 102/102/111	942 104/104/113	8340
-30	848 108/108/120	835 105/105/117	823 102/102/113	813 99/99/110	829 98/98/108	896 102/102/111	957 104/104/113	8340
-25	860 108/108/120	847 105/105/117	835 102/102/113	824 99/99/110	842 98/98/108	910 102/102/111	972 104/104/113	8340
-20	872 108/108/120	859 105/105/117	847 102/102/113	836 99/99/110	854 98/98/108	924 102/102/111	987 104/104/113	8340
-15	885 108/108/120	871 105/105/117	859 102/102/113	848 99/99/110	867 98/98/108	938 102/102/111	1002 104/104/113	8340
-10	897 108/108/120	883 105/105/117	871 102/102/113	860 99/99/109	880 98/98/108	952 102/102/111	1017 104/104/113	8340
-5	909 108/108/120	895 105/105/116	883 102/102/113	871 99/99/109	893 98/98/108	966 102/102/111	1033 104/104/113	8340
0	920 108/108/120	906 105/105/116	894 101/101/113	883 99/99/109	905 98/98/108	981 102/102/111	1048 104/104/113	8340
5	932 108/108/120	918 104/104/116	906 101/101/113	894 99/99/109	919 98/98/108	995 102/102/111	1064 104/104/113	8340
10	944 108/108/120	929 104/104/116	917 101/101/113	906 98/98/109	932 98/98/108	1010 102/102/111	1080 104/104/113	8340
15	952 107/107/118	939 103/103/115	927 100/100/111	916 97/97/108	966 99/99/108	1048 102/102/111	1128 105/105/113	8340
20	951 104/104/115	939 101/101/111	927 98/98/108	936 96/96/106	1020 100/100/108	1120 103/103/111	1224 106/106/113	8340
25	950 101/101/111	937 98/98/108	925 95/95/104	990 97/97/106	1094 100/100/108	1223 104/104/111	1348 106/106/113	8340
30	946 98/98/107	934 95/95/104	963 95/95/103	1077 98/98/106	1215 101/101/108	1369 105/105/111	1516 107/107/113	8340
35	942 94/94/103	937 92/92/100	1062 96/96/103	1210 99/99/106	1376 102/102/108	1556 105/105/111	- -	8225
40	939 91/91/99	1036 93/93/100	1196 96/96/103	1373 100/100/106	1568 103/103/108	- -	- -	7694
44	983 90/90/97	1142 94/94/100	1328 97/97/103	1530 101/101/106	- -	- -	- -	7283
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 4000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	838 107/107/119	826 104/104/115	814 101/101/112	804 98/98/108	837 99/99/108	905 102/102/111	970 105/105/113	8340
-35	851 107/107/119	838 104/104/115	827 101/101/112	816 98/98/108	850 99/99/108	920 102/102/111	984 105/105/113	8340
-30	863 107/107/119	851 104/104/115	839 101/101/112	828 98/98/108	863 99/99/108	934 102/102/111	999 105/105/113	8340
-25	876 107/107/119	863 104/104/115	851 101/101/112	840 98/98/108	876 99/99/108	949 102/102/111	1014 105/105/113	8340
-20	888 107/107/119	875 104/104/115	863 101/101/112	853 98/98/108	889 99/99/108	963 102/102/111	1030 105/105/113	8340
-15	901 107/107/119	887 104/104/115	876 101/101/112	865 98/98/108	903 99/99/108	978 102/102/111	1046 105/105/113	8340
-10	913 107/107/119	900 104/104/115	888 101/101/112	877 98/98/108	916 99/99/108	993 102/102/111	1062 105/105/113	8340
-5	925 107/107/119	912 103/103/115	900 100/100/112	889 98/98/108	929 99/99/108	1008 102/102/111	1078 105/105/113	8340
0	937 107/107/119	924 103/103/115	911 100/100/111	900 98/98/108	943 99/99/108	1022 102/102/111	1094 105/105/113	8340
5	949 107/107/119	935 103/103/115	923 100/100/111	912 98/98/108	957 99/99/108	1038 102/102/111	1111 105/105/113	8340
10	964 106/106/118	951 103/103/115	938 100/100/111	927 97/97/108	978 99/99/108	1061 102/102/111	1138 105/105/113	8340
15	966 104/104/115	953 101/101/112	941 98/98/108	947 96/96/106	1032 100/100/108	1129 103/103/111	1234 106/106/113	8340
20	966 101/101/112	954 98/98/108	942 95/95/105	999 97/97/106	1098 100/100/108	1225 104/104/111	1351 106/106/113	8340
25	965 99/99/109	953 96/96/105	964 94/94/103	1063 98/98/106	1194 101/101/108	1347 104/104/111	1489 107/107/113	8340
30	961 95/95/104	949 92/92/101	1047 95/95/103	1188 99/99/106	1347 102/102/108	1527 105/105/111	1694 108/108/113	8340
35	958 92/92/100	1023 93/93/100	1177 96/96/103	1348 100/100/106	1535 103/103/108	- -	- -	7853
40	991 90/90/97	1150 93/93/100	1337 97/97/103	1538 100/100/106	- -	- -	- -	7337
42	1037 90/90/97	1210 94/94/100	1409 97/97/103	- -	- -	- -	- -	7134
V_{FS}	117	121	125	128	132	135	138	

<u>WARNING:</u> THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 5000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	855 106/106/117	843 102/102/114	831 99/99/110	821 97/97/107	876 99/99/108	949 102/102/111	1030 105/105/113	8340
-35	868 106/106/117	855 102/102/114	844 99/99/110	833 97/97/107	890 99/99/108	965 102/102/111	1045 105/105/113	8340
-30	881 106/106/117	868 102/102/114	857 99/99/110	846 97/97/107	904 99/99/108	980 102/102/111	1060 105/105/113	8340
-25	893 106/106/117	881 102/102/114	869 99/99/110	858 97/97/107	918 99/99/108	995 102/102/111	1076 105/105/113	8340
-20	906 106/106/117	893 102/102/114	881 99/99/110	870 97/97/107	932 99/99/108	1010 102/102/111	1093 105/105/113	8340
-15	919 106/106/117	906 102/102/114	894 99/99/110	883 97/97/107	946 99/99/108	1026 102/102/111	1109 105/105/113	8340
-10	931 106/106/117	918 102/102/114	906 99/99/110	895 97/97/107	960 99/99/108	1042 102/102/111	1125 105/105/113	8340
-5	944 106/106/117	931 102/102/114	919 99/99/110	908 96/96/106	974 99/99/108	1057 102/102/111	1142 105/105/113	8340
0	956 105/105/117	943 102/102/113	931 99/99/110	920 96/96/106	988 99/99/108	1073 102/102/111	1158 105/105/113	8340
5	969 105/105/117	955 102/102/113	943 99/99/110	932 96/96/106	1003 99/99/108	1089 102/102/111	1177 105/105/113	8340
10	982 104/104/116	969 101/101/112	957 98/98/108	958 96/96/106	1043 100/100/108	1137 103/103/111	1244 106/106/113	8340
15	982 102/102/112	969 99/99/109	957 96/96/105	1010 97/97/106	1105 100/100/108	1233 104/104/111	1358 106/106/113	8340
20	983 99/99/109	970 96/96/105	972 94/94/103	1066 98/98/106	1197 101/101/108	1347 104/104/111	1486 107/107/113	8340
25	981 96/96/106	969 93/93/102	1029 95/95/103	1164 98/98/106	1319 102/102/108	1491 105/105/111	1646 108/108/113	8340
30	978 93/93/101	1001 92/92/100	1146 96/96/103	1311 99/99/106	1495 103/103/108	1698 106/106/111	- -	8011
35	978 90/90/97	1122 93/93/100	1300 97/97/103	1495 100/100/106	- -	- -	- -	7486
40	1088 90/90/97	1273 94/94/100	1484 98/98/103	- -	- -	- -	- -	6990
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 6000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	873 104/104/116	860 101/101/112	849 98/98/109	845 96/96/106	919 99/99/108	1000 103/103/111	1094 105/105/113	8340
-35	886 104/104/116	874 101/101/112	862 98/98/109	858 96/96/106	933 99/99/108	1015 103/103/111	1110 105/105/113	8340
-30	899 104/104/116	887 101/101/112	875 98/98/109	872 96/96/106	948 99/99/108	1030 103/103/111	1126 105/105/113	8340
-25	912 104/104/116	899 101/101/112	888 98/98/109	885 96/96/106	963 99/99/108	1046 103/103/111	1144 105/105/113	8340
-20	925 104/104/116	912 101/101/112	900 98/98/108	898 96/96/106	978 99/99/108	1062 103/103/111	1161 105/105/113	8340
-15	938 104/104/116	925 101/101/112	913 98/98/108	912 96/96/106	992 99/99/108	1078 103/103/111	1178 105/105/113	8340
-10	951 104/104/116	938 101/101/112	926 98/98/108	925 96/96/106	1007 99/99/108	1095 103/103/111	1196 105/105/113	8340
-5	964 104/104/116	951 101/101/112	939 98/98/108	939 96/96/106	1022 99/99/108	1111 103/103/111	1213 105/105/113	8340
0	977 104/104/116	963 101/101/112	951 98/98/108	952 96/96/106	1037 99/99/108	1128 103/103/111	1231 105/105/113	8340
5	994 104/104/115	981 101/101/111	968 98/98/108	977 96/96/106	1065 100/100/108	1164 103/103/111	1273 106/106/113	8340
10	995 101/101/112	982 98/98/108	970 95/95/105	1030 97/97/106	1129 100/100/108	1260 104/104/111	1389 106/106/113	8340
15	996 99/99/109	984 96/96/105	990 94/94/103	1087 98/98/106	1222 101/101/108	1376 104/104/111	1519 107/107/113	8340
20	997 96/96/106	984 93/93/102	1045 95/95/103	1180 98/98/106	1337 102/102/108	1512 105/105/111	1670 108/108/113	8340
25	995 94/94/102	1002 92/92/100	1139 96/96/103	1301 99/99/106	1481 102/102/108	1679 106/106/111	- -	8094
30	993 90/90/98	1112 93/93/100	1286 97/97/103	1478 100/100/106	- -	- -	- -	7582
35	1078 90/90/97	1257 94/94/100	1465 97/97/103	- -	- -	- -	- -	7083
38	1161 91/91/97	1362 94/94/100	- -	- -	- -	- -	- -	6797
V_{FS}	117	121	125	128	132	135	138	

WARNING: **THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.**

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 7000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	887 102/102/113	874 99/99/110	863 96/96/106	895 97/97/106	975 100/100/108	1084 103/103/111	1189 106/106/113	8340
-35	900 102/102/113	888 99/99/110	876 96/96/106	909 97/97/106	990 100/100/108	1101 103/103/111	1207 106/106/113	8340
-30	913 102/102/113	901 99/99/110	889 96/96/106	923 97/97/106	1006 100/100/108	1117 103/103/111	1225 106/106/113	8340
-25	927 102/102/113	914 99/99/110	903 96/96/106	937 97/97/106	1022 100/100/108	1134 103/103/111	1243 106/106/113	8340
-20	940 102/102/113	927 99/99/110	916 96/96/106	952 97/97/106	1038 100/100/108	1151 103/103/111	1262 106/106/113	8340
-15	953 102/102/113	941 99/99/109	929 96/96/106	966 97/97/106	1054 100/100/108	1168 103/103/111	1281 106/106/113	8340
-10	967 102/102/113	954 99/99/109	942 96/96/106	981 97/97/106	1070 100/100/108	1186 103/103/111	1301 106/106/113	8340
-5	980 102/102/113	967 99/99/109	955 96/96/106	995 97/97/106	1086 100/100/108	1203 103/103/111	1320 106/106/113	8340
0	993 102/102/113	980 99/99/109	968 96/96/106	1011 97/97/106	1103 100/100/108	1222 103/103/111	1341 106/106/113	8340
5	1007 101/101/111	994 98/98/107	982 95/95/104	1059 97/97/106	1169 101/101/108	1307 104/104/111	1440 107/107/113	8340
10	1009 98/98/108	996 95/95/104	1016 94/94/103	1122 98/98/106	1261 101/101/108	1422 104/104/111	1571 107/107/113	8340
15	1011 96/96/105	999 93/93/102	1071 95/95/103	1212 98/98/106	1374 102/102/108	1554 105/105/111	1716 108/108/113	8340
20	1013 94/94/102	1021 92/92/100	1158 96/96/103	1322 99/99/106	1505 102/102/108	1704 106/106/111	- -	8119
25	1011 91/91/99	1115 93/93/100	1288 96/96/103	1478 100/100/106	1688 103/103/108	- -	- -	7648
30	1080 90/90/97	1257 94/94/100	1464 97/97/103	- -	- -	- -	- -	7126
35	1222 91/91/97	1435 95/95/100	- -	- -	- -	- -	- -	6657
36	1253 91/91/97	1474 95/95/100	- -	- -	- -	- -	- -	6569
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 8000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	901 100/100/111	889 97/97/107	877 94/94/103	949 97/97/106	1053 101/101/108	1179 104/104/111	1299 107/107/113	8340
-35	915 100/100/111	902 97/97/107	891 94/94/103	964 97/97/106	1069 101/101/108	1196 104/104/111	1318 107/107/113	8340
-30	929 100/100/111	916 97/97/107	905 94/94/103	979 97/97/106	1085 101/101/108	1214 104/104/111	1338 107/107/113	8340
-25	942 100/100/111	930 97/97/107	918 94/94/103	995 97/97/106	1101 101/101/108	1232 104/104/111	1358 107/107/113	8340
-20	956 100/100/111	943 97/97/107	932 94/94/103	1010 97/97/106	1118 101/101/108	1251 104/104/111	1379 107/107/113	8340
-15	970 100/100/111	957 97/97/107	945 94/94/103	1025 97/97/106	1134 101/101/108	1269 104/104/111	1399 107/107/113	8340
-10	983 100/100/111	970 97/97/107	959 94/94/103	1041 97/97/106	1151 101/101/108	1288 104/104/111	1420 107/107/113	8340
-5	997 100/100/110	984 97/97/107	972 94/94/103	1057 97/97/106	1168 101/101/108	1308 104/104/111	1441 107/107/113	8340
0	1018 100/100/110	1005 97/97/106	995 94/94/103	1092 97/97/106	1216 101/101/108	1365 104/104/111	1502 107/107/113	8340
5	1021 97/97/107	1009 94/94/103	1047 95/95/103	1166 98/98/106	1315 101/101/108	1481 105/105/111	1639 107/107/113	8340
10	1025 96/96/105	1013 93/93/101	1104 95/95/103	1252 99/99/106	1421 102/102/108	1611 105/105/111	1786 108/108/113	8340
15	1030 94/94/102	1041 92/92/100	1180 96/96/103	1346 99/99/106	1530 102/102/108	1731 106/106/111	- -	8147
20	1030 91/91/99	1125 93/93/100	1296 96/96/103	1486 100/100/106	1692 103/103/108	- -	- -	7750
25	1089 90/90/97	1267 94/94/100	1473 97/97/103	1697 101/101/106	- -	- -	- -	7216
30	1239 91/91/97	1456 95/95/100	- -	- -	- -	- -	- -	6705
34	1381 91/91/97	- -	- -	- -	- -	- -	- -	6360
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 9000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	921 99/99/109	909 96/96/105	911 94/94/103	998 98/98/106	1120 101/101/108	1259 104/104/111	1388 107/107/113	8340
-35	936 99/99/109	923 96/96/105	926 94/94/103	1014 98/98/106	1137 101/101/108	1278 104/104/111	1409 107/107/113	8340
-30	950 99/99/109	937 96/96/105	940 94/94/103	1030 98/98/106	1154 101/101/108	1298 104/104/111	1430 107/107/113	8340
-25	964 99/99/109	951 96/96/105	955 94/94/103	1046 98/98/106	1172 101/101/108	1317 104/104/111	1452 107/107/113	8340
-20	978 99/99/109	966 96/96/105	969 94/94/103	1063 98/98/106	1189 101/101/108	1337 104/104/111	1474 107/107/113	8340
-15	992 99/99/109	980 96/96/105	984 94/94/103	1079 98/98/106	1207 101/101/108	1358 104/104/111	1496 107/107/113	8340
-10	1006 99/99/109	993 96/96/105	999 94/94/103	1096 98/98/106	1225 101/101/108	1378 104/104/111	1519 107/107/113	8340
-5	1020 99/99/109	1007 96/96/105	1014 94/94/103	1113 98/98/106	1244 101/101/108	1400 104/104/111	1543 107/107/113	8340
0	1037 98/98/107	1024 95/95/104	1062 95/95/103	1181 98/98/106	1331 101/101/108	1499 105/105/111	1659 107/107/113	8340
5	1041 95/95/104	1028 92/92/101	1125 95/95/103	1275 99/99/106	1446 102/102/108	1637 105/105/111	1812 108/108/113	8340
10	1046 93/93/102	1061 92/92/100	1203 96/96/103	1371 99/99/106	1559 102/102/108	1762 106/106/111	- -	8146
15	1049 92/92/99	1127 93/93/100	1295 96/96/103	1482 100/100/106	1686 103/103/108	- -	- -	7812
20	1069 90/90/97	1238 93/93/100	1436 97/97/103	1649 100/100/106	- -	- -	- -	7387
25	1210 91/91/97	1419 94/94/100	1657 98/98/103	- -	- -	- -	- -	6876
30	1384 91/91/97	1634 95/95/100	- -	- -	- -	- -	- -	6432
32	1461 92/92/97	- -	- -	- -	- -	- -	- -	6260
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 10000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	943 98/98/108	930 95/95/104	959 94/94/103	1063 98/98/106	1195 101/101/109	1346 105/105/111	1489 107/107/113	8340
-35	957 98/98/108	945 95/95/104	974 94/94/103	1079 98/98/106	1213 101/101/109	1367 105/105/111	1511 107/107/113	8340
-30	972 98/98/108	959 95/95/104	989 94/94/103	1095 98/98/106	1231 101/101/109	1387 105/105/111	1534 107/107/113	8340
-25	987 98/98/107	974 95/95/104	1004 94/94/103	1112 98/98/106	1250 101/101/109	1409 105/105/111	1558 107/107/113	8340
-20	1001 98/98/107	988 95/95/104	1020 94/94/103	1129 98/98/106	1269 101/101/109	1430 105/105/111	1582 107/107/113	8340
-15	1016 98/98/107	1003 95/95/104	1036 94/94/103	1146 98/98/106	1288 101/101/109	1452 105/105/111	1606 107/107/113	8340
-10	1030 98/98/107	1017 95/95/104	1052 94/94/103	1163 98/98/106	1308 101/101/109	1474 105/105/111	1630 107/107/113	8340
-5	1048 98/98/107	1035 94/94/104	1071 94/94/103	1184 98/98/106	1332 101/101/109	1500 105/105/111	1659 107/107/113	8340
0	1060 96/96/105	1047 93/93/101	1128 95/95/103	1275 99/99/106	1447 102/102/109	1636 105/105/111	1807 108/108/113	8340
5	1064 94/94/102	1073 92/92/100	1212 96/96/103	1382 99/99/106	1572 102/102/109	1778 106/106/111	- -	8123
10	1069 92/92/100	1136 93/93/100	1305 96/96/103	1494 100/100/106	1701 103/103/109	- -	- -	7807
15	1072 90/90/97	1231 93/93/100	1426 97/97/103	1640 100/100/106	- -	- -	- -	7437
20	1174 90/90/97	1370 94/94/100	1597 97/97/103	- -	- -	- -	- -	7014
25	1328 91/91/97	1562 95/95/100	- -	- -	- -	- -	- -	6577
30	1528 92/92/97	- -	- -	- -	- -	- -	- -	6139
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 11000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	964 96/96/106	952 93/93/102	1009 95/95/103	1133 98/98/106	1280 102/102/109	1444 105/105/111	1596 108/108/113	8340
-35	980 96/96/106	967 93/93/102	1025 95/95/103	1150 98/98/106	1299 102/102/109	1466 105/105/111	1620 108/108/113	8340
-30	995 96/96/106	982 93/93/102	1041 95/95/103	1167 98/98/106	1319 102/102/109	1488 105/105/111	1645 108/108/113	8340
-25	1010 96/96/106	997 93/93/102	1057 95/95/103	1185 98/98/106	1339 102/102/109	1510 105/105/111	1670 108/108/113	8340
-20	1025 96/96/106	1012 93/93/102	1074 95/95/103	1203 98/98/106	1359 102/102/109	1533 105/105/111	1695 108/108/113	8340
-15	1040 96/96/106	1027 93/93/102	1090 95/95/103	1221 98/98/106	1380 102/102/109	1556 105/105/111	1721 108/108/113	8340
-10	1054 96/96/106	1041 93/93/102	1107 95/95/103	1239 98/98/106	1400 102/102/109	1580 105/105/111	1747 108/108/113	8340
-5	1078 96/96/105	1064 93/93/101	1147 95/95/103	1295 99/99/106	1468 102/102/109	1660 105/105/111	1833 108/108/113	8340
0	1080 94/94/102	1094 92/92/100	1238 96/96/103	1413 99/99/106	1607 102/102/109	1818 106/106/111	- -	8117
5	1085 91/91/99	1169 93/93/100	1345 96/96/103	1541 100/100/106	1754 103/103/109	- -	- -	7755
10	1093 89/89/97	1263 93/93/100	1463 97/97/103	1681 100/100/106	- -	- -	- -	7416
15	1192 90/90/97	1391 94/94/100	1621 97/97/103	- -	- -	- -	- -	7032
20	1334 91/91/97	1568 95/95/100	- -	- -	- -	- -	- -	6624
25	1526 92/92/97	- -	- -	- -	- -	- -	- -	6202
V_{FS}	117	121	125	129	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 12000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	987 95/95/104	975 92/92/101	1068 95/95/103	1209 99/99/106	1371 102/102/109	1552 105/105/111	1716 108/108/114	8340
-35	1003 95/95/104	990 92/92/101	1084 95/95/103	1227 99/99/106	1392 102/102/109	1575 105/105/111	1741 108/108/114	8340
-30	1018 95/95/104	1005 92/92/101	1100 95/95/103	1245 99/99/106	1413 102/102/109	1599 105/105/111	1768 108/108/114	8340
-25	1034 95/95/104	1021 92/92/101	1117 95/95/103	1264 99/99/106	1435 102/102/109	1623 105/105/111	1795 108/108/114	8340
-20	1049 95/95/104	1036 92/92/101	1134 95/95/103	1283 99/99/106	1457 102/102/109	1648 105/105/111	1822 108/108/114	8340
-15	1065 95/95/104	1052 92/92/101	1151 95/95/103	1303 99/99/106	1478 102/102/109	1673 105/105/111	1849 108/108/114	8340
-10	1081 95/95/104	1068 92/92/101	1169 95/95/103	1323 99/99/106	1502 102/102/109	1700 105/105/111	1879 108/108/114	8340
-5	1099 94/94/102	1111 92/92/100	1254 96/96/103	1430 99/99/106	1625 102/102/109	1838 106/106/111	- -	8147
0	1102 91/91/99	1189 93/93/100	1369 96/96/103	1567 100/100/106	1784 103/103/109	- -	- -	7760
5	1117 90/90/97	1292 93/93/100	1497 97/97/103	1719 100/100/106	- -	- -	- -	7399
10	1212 90/90/97	1414 94/94/100	1647 97/97/103	- -	- -	- -	- -	7045
15	1345 91/91/97	1580 95/95/100	- -	- -	- -	- -	- -	6669
20	1525 92/92/97	- -	- -	- -	- -	- -	- -	6266
V_{FS}	117	121	125	129	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 13000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	1010 94/94/103	1013 92/92/100	1139 96/96/103	1296 99/99/106	1471 102/102/109	1664 106/106/111	- -	8204
-35	1026 94/94/103	1029 92/92/100	1156 96/96/103	1315 99/99/106	1493 102/102/109	1689 106/106/111	- -	8213
-30	1042 94/94/103	1045 92/92/100	1174 96/96/103	1335 99/99/106	1515 102/102/109	1714 106/106/111	- -	8221
-25	1059 94/94/103	1061 92/92/100	1192 96/96/103	1355 99/99/106	1538 102/102/109	1741 106/106/111	- -	8229
-20	1074 94/94/103	1078 92/92/100	1209 96/96/103	1376 99/99/106	1562 102/102/109	1767 106/106/111	- -	8236
-15	1090 94/94/103	1094 92/92/100	1227 96/96/103	1396 99/99/106	1585 102/102/109	1794 106/106/111	- -	8242
-10	1116 94/94/102	1128 92/92/100	1271 96/96/103	1448 99/99/106	1645 102/102/109	1858 106/106/111	- -	8157
-5	1122 91/91/99	1204 93/93/100	1385 96/96/103	1585 100/100/106	1803 103/103/109	- -	- -	7785
0	1134 90/90/97	1310 93/93/100	1518 97/97/103	1743 100/100/106	- -	- -	- -	7413
5	1233 90/90/97	1437 94/94/100	1673 97/97/103	- -	- -	- -	- -	7055
10	1355 91/91/97	1590 95/95/100	- -	- -	- -	- -	- -	6708
15	1522 92/92/97	- -	- -	- -	- -	- -	- -	6342
V_{FS}	117	121	125	129	132	136	-	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) OFF – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 14000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	1033 93/93/101	1067 92/92/100	1214 96/96/103	1387 99/99/106	1580 103/103/109	1791 106/106/111	- -	8001
-35	1050 93/93/101	1084 92/92/100	1232 96/96/103	1408 99/99/106	1604 103/103/109	1818 106/106/111	- -	8009
-30	1066 93/93/101	1101 92/92/100	1251 96/96/103	1430 99/99/106	1628 103/103/109	1845 106/106/111	- -	8017
-25	1083 93/93/101	1118 92/92/100	1270 96/96/103	1452 99/99/106	1653 103/103/109	1873 106/106/111	- -	8025
-20	1100 93/93/101	1136 92/92/100	1289 96/96/103	1473 99/99/106	1678 103/103/109	1902 106/106/111	- -	8033
-15	1116 93/93/101	1154 92/92/100	1308 96/96/103	1495 99/99/106	1703 103/103/109	1930 106/106/111	- -	8039
-10	1141 92/92/100	1219 93/93/100	1401 96/96/103	1603 100/100/106	1825 103/103/109	- -	- -	7809
-5	1151 90/90/97	1326 93/93/100	1536 97/97/103	1764 100/100/106	- -	- -	- -	7437
0	1248 90/90/97	1455 94/94/100	1693 97/97/103	- -	- -	- -	- -	7077
5	1370 91/91/97	1607 94/94/100	- -	- -	- -	- -	- -	6737
10	1518 91/91/97	1789 95/95/100	- -	- -	- -	- -	- -	6409
15	1721 92/92/97	- -	- -	- -	- -	- -	- -	6036
V_{FS}	117	121	125	129	132	136	-	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: -1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	649 105/105/118	667 104/104/117	713 104/104/116	758 103/103/115	810 104/104/115	901 107/107/118	985 110/110/120	8340
-35	659 105/105/118	676 104/104/117	722 104/104/116	768 103/103/115	822 104/104/115	913 107/107/118	999 110/110/120	8340
-30	669 105/105/118	686 104/104/117	732 104/104/116	779 103/103/115	833 104/104/115	926 107/107/118	1013 110/110/120	8340
-25	678 104/104/118	695 104/104/117	742 104/104/116	789 103/103/115	845 104/104/115	939 107/107/118	1027 110/110/120	8340
-20	688 104/104/118	704 104/104/117	752 104/104/116	800 103/103/115	857 104/104/115	952 107/107/118	1042 110/110/120	8340
-15	697 104/104/118	714 104/104/117	762 104/104/116	811 103/103/115	869 104/104/115	966 107/107/118	1057 110/110/120	8340
-10	707 104/104/118	724 104/104/117	772 104/104/116	821 103/103/115	881 104/104/115	979 107/107/118	1071 110/110/120	8340
-5	716 104/104/118	734 104/104/117	782 103/103/116	832 103/103/115	893 104/104/115	993 107/107/118	1087 110/110/120	8340
0	725 104/104/117	743 104/104/116	792 103/103/115	843 103/103/115	906 104/104/115	1007 107/107/118	1102 110/110/120	8340
5	734 104/104/117	752 104/104/116	802 103/103/115	854 103/103/114	919 104/104/115	1022 107/107/118	1119 110/110/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 0 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	669 105/105/118	685 104/104/117	730 104/104/116	777 104/104/115	827 104/104/115	917 107/107/118	1003 110/110/120	8340
-35	678 105/105/118	694 104/104/117	739 104/104/116	786 104/104/115	839 104/104/115	930 107/107/118	1018 110/110/120	8340
-30	688 105/105/118	704 104/104/117	749 104/104/116	797 104/104/115	851 104/104/115	943 107/107/118	1032 110/110/120	8340
-25	698 105/105/118	715 104/104/117	759 104/104/116	808 104/104/115	863 104/104/115	957 107/107/118	1047 110/110/120	8340
-20	707 104/104/118	725 104/104/117	769 104/104/116	819 103/103/115	876 104/104/115	971 107/107/118	1063 110/110/120	8340
-15	717 104/104/118	735 104/104/117	780 104/104/116	830 103/103/115	889 104/104/115	985 107/107/118	1079 110/110/120	8340
-10	726 104/104/118	744 104/104/117	790 104/104/116	841 103/103/115	901 104/104/115	1000 107/107/118	1094 110/110/120	8340
-5	736 104/104/118	754 104/104/117	801 103/103/116	852 103/103/115	914 104/104/115	1015 107/107/118	1110 110/110/120	8340
0	745 104/104/118	764 104/104/117	811 103/103/116	864 103/103/115	928 104/104/115	1029 107/107/118	1127 110/110/120	8340
5	754 104/104/117	773 104/104/116	822 103/103/115	875 103/103/114	942 104/104/115	1046 107/107/118	1145 110/110/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	686 105/105/118	703 104/104/117	748 104/104/116	796 104/104/115	848 104/104/115	941 107/107/118	1029 110/110/120	8340
-35	696 105/105/118	713 104/104/117	757 104/104/116	806 104/104/115	861 104/104/115	955 107/107/118	1044 110/110/120	8340
-30	706 105/105/118	723 104/104/117	768 104/104/116	818 103/103/115	874 104/104/115	968 107/107/118	1060 110/110/120	8340
-25	716 104/104/118	734 104/104/117	779 104/104/116	829 103/103/115	886 104/104/115	983 107/107/118	1075 110/110/120	8340
-20	726 104/104/118	744 104/104/117	789 104/104/116	840 103/103/115	900 104/104/115	997 107/107/118	1091 110/110/120	8340
-15	736 104/104/118	754 104/104/117	800 104/104/116	852 103/103/115	913 104/104/115	1012 107/107/118	1107 110/110/120	8340
-10	745 104/104/118	764 104/104/117	811 104/104/116	863 103/103/115	926 104/104/115	1027 107/107/118	1124 110/110/120	8340
-5	755 104/104/118	774 104/104/117	821 103/103/116	875 103/103/115	939 104/104/115	1042 107/107/118	1140 110/110/120	8340
0	765 104/104/117	784 104/104/116	832 103/103/115	886 103/103/115	953 104/104/115	1058 107/107/118	1157 110/110/120	8340
5	774 104/104/117	794 103/103/116	843 103/103/115	898 103/103/114	968 104/104/115	1075 107/107/118	1176 110/110/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 2000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	704 105/105/118	722 104/104/117	768 104/104/116	818 103/103/115	874 104/104/115	969 107/107/118	1060 110/110/120	8340
-35	714 104/104/118	731 104/104/117	778 104/104/116	828 103/103/115	887 104/104/115	984 107/107/118	1076 110/110/120	8340
-30	724 104/104/118	742 104/104/117	788 104/104/116	839 103/103/115	900 104/104/115	999 107/107/118	1092 110/110/120	8340
-25	734 104/104/118	752 104/104/117	799 104/104/116	851 103/103/115	913 104/104/115	1013 107/107/118	1108 110/110/120	8340
-20	744 104/104/118	763 104/104/117	810 103/103/116	863 103/103/115	927 104/104/115	1028 107/107/118	1125 110/110/120	8340
-15	754 104/104/117	774 104/104/116	821 103/103/115	875 103/103/115	940 104/104/115	1044 107/107/118	1141 110/110/120	8340
-10	764 104/104/117	784 104/104/116	833 103/103/115	886 103/103/114	954 104/104/115	1060 107/107/118	1159 110/110/120	8340
-5	774 104/104/117	794 104/104/116	844 103/103/115	898 103/103/114	968 104/104/115	1076 107/107/118	1177 110/110/120	8340
0	784 104/104/117	804 103/103/116	855 103/103/115	910 103/103/114	983 104/104/115	1093 107/107/118	1195 110/110/120	8340
5	792 103/103/116	813 103/103/115	872 103/103/114	927 102/102/114	1009 104/104/115	1126 107/107/118	1231 110/110/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 3000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	717 104/104/117	737 103/103/116	791 103/103/115	841 103/103/114	913 104/104/115	1018 107/107/118	1111 110/110/120	8340
-35	727 103/103/117	747 103/103/116	801 103/103/115	852 102/102/114	927 104/104/115	1033 107/107/118	1128 110/110/120	8340
-30	737 103/103/117	757 103/103/116	812 103/103/115	864 102/102/114	940 104/104/115	1049 107/107/118	1145 110/110/120	8340
-25	748 103/103/116	768 103/103/115	824 103/103/114	876 102/102/114	954 104/104/115	1064 107/107/118	1162 110/110/120	8340
-20	758 103/103/116	778 103/103/115	835 102/102/114	889 102/102/113	969 104/104/115	1081 107/107/118	1180 110/110/120	8340
-15	768 103/103/116	789 103/103/115	847 102/102/114	901 102/102/113	983 104/104/115	1097 107/107/118	1198 110/110/120	8340
-10	778 103/103/116	799 103/103/115	858 102/102/114	913 102/102/113	998 104/104/115	1114 108/108/118	1216 110/110/120	8340
-5	788 103/103/116	810 103/103/115	870 102/102/114	925 102/102/113	1013 104/104/115	1131 108/108/118	1235 110/110/120	8340
0	798 103/103/116	821 102/102/115	881 102/102/114	937 102/102/113	1028 104/104/115	1148 108/108/118	1254 110/110/120	8340
5	800 101/101/113	850 100/100/112	910 100/100/111	992 102/102/112	1112 105/105/115	1240 108/108/118	1350 111/111/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 4000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	730 102/102/115	761 102/102/114	816 102/102/113	867 101/101/112	959 105/105/115	1073 108/108/118	1170 110/110/120	8340
-35	740 102/102/115	771 102/102/114	827 102/102/113	879 101/101/112	974 105/105/115	1089 108/108/118	1188 110/110/120	8340
-30	751 102/102/115	782 102/102/114	838 102/102/113	891 101/101/112	988 105/105/115	1106 108/108/118	1206 110/110/120	8340
-25	762 102/102/115	793 102/102/114	850 102/102/113	904 101/101/112	1003 105/105/115	1123 108/108/118	1225 110/110/120	8340
-20	772 102/102/115	804 102/102/114	862 101/101/113	917 101/101/112	1019 105/105/115	1140 108/108/118	1243 110/110/120	8340
-15	782 102/102/115	815 102/102/114	874 101/101/113	930 101/101/112	1034 105/105/115	1157 108/108/118	1263 110/110/120	8340
-10	793 102/102/115	826 102/102/114	885 101/101/113	944 101/101/112	1050 105/105/115	1175 108/108/118	1282 110/110/120	8340
-5	803 102/102/115	837 101/101/114	897 101/101/113	959 101/101/112	1067 105/105/115	1193 108/108/118	1302 110/110/120	8340
0	813 101/101/113	860 101/101/113	921 100/100/112	997 101/101/112	1116 105/105/115	1246 108/108/118	1357 111/111/120	8340
5	828 98/98/110	890 98/98/109	970 99/99/109	1093 102/102/112	1227 106/106/115	1363 109/109/118	1480 111/111/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 5000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg)							
	MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	745 101/101/114	789 101/101/113	845 101/101/112	912 101/101/112	1019 105/105/115	1138 108/108/118	1239 111/111/120	8340
-35	755 101/101/114	799 101/101/113	856 100/100/112	926 101/101/112	1035 105/105/115	1155 108/108/118	1258 111/111/120	8340
-30	766 101/101/114	810 101/101/113	868 100/100/112	939 101/101/112	1050 105/105/115	1173 108/108/118	1277 111/111/120	8340
-25	776 101/101/113	821 101/101/112	880 100/100/111	953 101/101/112	1066 105/105/115	1191 108/108/118	1297 111/111/120	8340
-20	787 101/101/113	833 100/100/112	892 100/100/111	968 101/101/112	1083 105/105/115	1209 108/108/118	1317 111/111/120	8340
-15	798 101/101/113	844 100/100/112	904 100/100/111	983 102/102/112	1100 105/105/115	1228 108/108/118	1337 111/111/120	8340
-10	809 101/101/113	856 100/100/112	917 100/100/111	998 102/102/112	1117 105/105/115	1246 108/108/118	1358 111/111/120	8340
-5	820 101/101/113	868 100/100/112	929 100/100/111	1013 102/102/112	1134 105/105/115	1266 108/108/118	1379 111/111/120	8340
0	839 98/98/110	902 98/98/109	976 99/99/109	1098 102/102/112	1233 106/106/115	1371 109/109/118	1489 111/111/120	8340
5	869 95/95/106	942 96/96/106	1069 99/99/109	1210 103/103/112	1352 106/106/115	1499 109/109/118	1645 112/112/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 6000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	760 100/100/112	817 100/100/111	874 99/99/110	963 102/102/112	1084 105/105/115	1207 108/108/118	1312 111/111/120	8340
-35	770 100/100/112	828 99/99/111	886 99/99/110	978 102/102/112	1100 105/105/115	1225 108/108/118	1332 111/111/120	8340
-30	781 100/100/112	839 99/99/111	898 99/99/110	992 102/102/112	1117 105/105/115	1244 108/108/118	1353 111/111/120	8340
-25	793 100/100/112	851 99/99/111	911 99/99/110	1008 102/102/112	1134 105/105/115	1263 108/108/118	1374 111/111/120	8340
-20	804 100/100/112	863 99/99/111	923 99/99/110	1023 102/102/112	1152 105/105/115	1283 108/108/118	1396 111/111/120	8340
-15	815 99/99/112	875 99/99/111	936 99/99/110	1039 102/102/112	1169 105/105/115	1303 108/108/118	1417 111/111/120	8340
-10	827 99/99/111	891 99/99/110	953 99/99/109	1060 102/102/112	1194 105/105/115	1329 108/108/118	1446 111/111/120	8340
-5	855 98/98/110	920 98/98/109	997 99/99/109	1123 102/102/112	1261 106/106/115	1400 109/109/118	1521 111/111/120	8340
0	885 96/96/107	956 96/96/106	1086 99/99/109	1228 103/103/112	1372 106/106/115	1522 109/109/118	1670 112/112/120	8340
5	914 93/93/103	1042 97/97/106	1193 100/100/109	1342 104/104/112	1498 107/107/115	1679 110/110/118	1834 113/113/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 7000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	792 98/98/110	851 98/98/109	928 99/99/109	1046 102/102/112	1175 106/106/115	1304 109/109/118	1416 111/111/120	8340
-35	802 98/98/109	862 97/97/108	942 99/99/109	1062 102/102/112	1193 106/106/115	1324 109/109/118	1438 111/111/120	8340
-30	812 98/98/109	874 97/97/108	956 99/99/109	1078 102/102/112	1211 106/106/115	1344 109/109/118	1460 111/111/120	8340
-25	824 98/98/109	886 97/97/108	971 99/99/109	1095 102/102/112	1229 106/106/115	1365 109/109/118	1482 112/112/120	8340
-20	835 98/98/109	898 97/97/108	986 99/99/109	1112 102/102/112	1248 106/106/115	1386 109/109/118	1505 112/112/120	8340
-15	847 97/97/109	911 97/97/108	1000 99/99/109	1129 102/102/112	1267 106/106/115	1408 109/109/118	1529 112/112/120	8340
-10	875 97/97/109	940 97/97/108	1039 99/99/109	1178 103/103/112	1319 106/106/115	1463 109/109/118	1597 112/112/120	8340
-5	906 95/95/105	993 96/96/106	1133 100/100/109	1280 103/103/112	1428 106/106/115	1591 110/110/118	1744 112/112/120	8340
0	948 93/93/103	1086 97/97/106	1241 100/100/109	1394 104/104/112	1563 107/107/115	1748 110/110/118	1908 113/113/120	8340
5	1037 94/94/103	1197 97/97/106	1359 101/101/109	1537 104/104/112	1728 108/108/115	1924 111/111/118	2109 113/113/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 8000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	824 96/96/107	885 96/96/106	1002 99/99/109	1136 103/103/112	1271 106/106/115	1408 109/109/118	1544 112/112/120	8340
-35	835 96/96/107	899 96/96/106	1018 99/99/109	1153 103/103/112	1290 106/106/115	1429 109/109/118	1568 112/112/120	8340
-30	846 96/96/107	912 96/96/106	1033 99/99/109	1171 103/103/112	1310 106/106/115	1451 109/109/118	1592 112/112/120	8340
-25	858 96/96/107	926 96/96/106	1048 99/99/109	1188 103/103/112	1330 106/106/115	1473 109/109/118	1616 112/112/120	8340
-20	870 96/96/107	940 96/96/106	1065 99/99/109	1207 103/103/112	1351 106/106/115	1496 109/109/118	1642 112/112/120	8340
-15	887 95/95/106	961 96/96/106	1090 99/99/109	1235 103/103/112	1381 106/106/115	1531 109/109/118	1681 112/112/120	8340
-10	925 94/94/105	1023 96/96/106	1171 100/100/109	1321 103/103/112	1472 107/107/115	1646 110/110/118	1802 112/112/120	8340
-5	983 93/93/103	1131 97/97/106	1290 101/101/109	1447 104/104/112	1630 107/107/115	1820 110/110/118	1983 113/113/120	8340
0	1074 94/94/103	1236 98/98/106	1403 101/101/109	1591 105/105/112	1788 108/108/115	1991 111/111/118	2184 114/114/120	8340
5	1202 95/95/103	1374 98/98/106	1578 102/102/109	1784 105/105/112	2004 109/109/115	2241 112/112/118	2447 114/114/120	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 9000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg)							
	MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	854 95/95/105	938 96/96/106	1068 100/100/109	1207 103/103/112	1348 106/106/115	1500 110/110/118	1644 112/112/120	8340
-35	865 95/95/105	952 96/96/106	1084 100/100/109	1226 103/103/112	1369 106/106/115	1523 110/110/118	1669 112/112/120	8340
-30	877 94/94/105	966 96/96/106	1101 100/100/109	1244 103/103/112	1390 106/106/115	1547 110/110/118	1695 112/112/120	8340
-25	890 94/94/105	981 96/96/106	1118 100/100/109	1264 103/103/112	1411 106/106/115	1571 110/110/118	1722 112/112/120	8340
-20	902 94/94/105	996 96/96/106	1135 100/100/109	1283 103/103/112	1433 106/106/115	1596 110/110/118	1749 112/112/120	8340
-15	931 94/94/104	1038 96/96/106	1188 100/100/109	1340 103/103/112	1494 107/107/115	1672 110/110/118	1829 112/112/120	8340
-10	986 93/93/103	1134 97/97/106	1294 101/101/109	1453 104/104/112	1632 107/107/115	1824 110/110/118	1989 113/113/120	8340
-5	1084 94/94/103	1249 98/98/106	1417 101/101/109	1604 105/105/112	1802 108/108/115	2005 111/111/118	2199 114/114/120	8340
0	1198 95/95/103	1371 98/98/106	1569 102/102/109	1776 105/105/112	1991 108/108/115	2229 112/112/118	2435 114/114/120	8340
5	1333 95/95/103	1541 99/99/106	1763 103/103/109	1997 106/106/112	2247 109/109/115	2502 112/112/118	- -	8201
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 1 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 10000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	886 94/94/104	993 96/96/106	1138 100/100/109	1283 103/103/112	1430 107/107/115	1601 110/110/118	1751 113/113/120	8340
-35	897 93/93/104	1009 96/96/106	1156 100/100/109	1304 103/103/112	1453 107/107/115	1626 110/110/118	1779 113/113/120	8340
-30	910 93/93/104	1024 96/96/106	1174 100/100/109	1324 103/103/112	1475 107/107/115	1651 110/110/118	1807 113/113/120	8340
-25	922 93/93/104	1040 96/96/106	1192 100/100/109	1344 103/103/112	1498 107/107/115	1677 110/110/118	1834 113/113/120	8340
-20	935 93/93/104	1056 96/96/106	1210 100/100/109	1365 103/103/112	1522 107/107/115	1704 110/110/118	1864 113/113/120	8340
-15	981 93/93/103	1123 97/97/106	1284 100/100/109	1444 104/104/112	1617 107/107/115	1810 110/110/118	1976 113/113/120	8340
-10	1076 94/94/103	1242 97/97/106	1411 101/101/109	1593 104/104/112	1792 108/108/115	1995 111/111/118	2185 113/113/120	8340
-5	1180 94/94/103	1353 98/98/106	1541 102/102/109	1748 105/105/112	1957 108/108/115	2190 111/111/118	2395 114/114/120	8340
0	1301 95/95/103	1492 99/99/106	1713 102/102/109	1931 106/106/112	2177 109/109/115	2429 112/112/118	2647 115/115/120	8340
5	1465 96/96/103	1695 100/100/106	1938 103/103/109	2199 106/106/112	2465 110/110/115	- -	- -	7774
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: -1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) / MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	749 109/109/122	737 106/106/118	726 103/103/115	717 100/100/111	714 98/98/108	771 101/101/111	821 104/104/113	8340
-35	760 109/109/122	747 106/106/118	737 103/103/114	727 100/100/111	725 98/98/108	783 101/101/111	834 104/104/113	8340
-30	771 109/109/122	758 106/106/118	748 103/103/114	738 100/100/111	736 98/98/108	795 101/101/111	847 104/104/113	8340
-25	782 109/109/122	769 106/106/118	759 103/103/114	749 100/100/111	747 98/98/108	807 101/101/111	860 104/104/113	8340
-20	792 109/109/122	780 106/106/118	769 103/103/114	759 100/100/111	758 98/98/108	819 101/101/111	873 104/104/113	8340
-15	803 109/109/121	791 106/106/118	780 103/103/114	770 100/100/111	770 98/98/108	831 101/101/111	886 104/104/113	8340
-10	814 109/109/121	801 106/106/118	790 103/103/114	780 100/100/111	781 98/98/108	844 101/101/111	900 104/104/113	8340
-5	824 109/109/121	812 106/106/118	801 103/103/114	791 100/100/111	792 98/98/108	856 101/101/111	913 104/104/113	8340
0	835 109/109/121	822 106/106/118	811 103/103/114	801 100/100/111	804 98/98/108	869 101/101/111	927 104/104/113	8340
5	845 109/109/121	832 105/105/117	821 102/102/114	811 100/100/110	815 98/98/108	882 101/101/111	941 104/104/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 0 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	772 110/110/122	759 106/106/118	748 103/103/115	738 100/100/111	733 98/98/108	791 101/101/111	843 104/104/113	8340
-35	782 110/110/122	769 106/106/118	758 103/103/115	748 100/100/111	744 98/98/108	803 101/101/111	856 104/104/113	8340
-30	793 110/110/122	780 106/106/118	769 103/103/115	759 100/100/111	756 98/98/108	816 101/101/111	869 104/104/113	8340
-25	805 110/110/122	791 106/106/118	780 103/103/115	770 100/100/111	767 98/98/108	828 101/101/111	883 104/104/113	8340
-20	815 109/109/122	802 106/106/118	791 103/103/115	780 100/100/111	779 98/98/108	841 101/101/111	897 104/104/113	8340
-15	826 109/109/122	813 106/106/118	802 103/103/114	791 100/100/111	791 98/98/108	854 101/101/111	911 104/104/113	8340
-10	837 109/109/122	824 106/106/118	812 103/103/114	802 100/100/111	802 98/98/108	867 101/101/111	925 104/104/113	8340
-5	848 109/109/122	834 106/106/118	823 103/103/114	812 100/100/111	814 98/98/108	880 101/101/111	939 104/104/113	8340
0	859 109/109/121	845 106/106/118	833 103/103/114	823 100/100/111	826 98/98/108	893 101/101/111	952 104/104/113	8340
5	869 109/109/121	855 106/106/118	843 102/102/114	833 100/100/110	838 98/98/108	906 101/101/111	967 104/104/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 1000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg)							
	MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	791 110/110/122	778 106/106/118	767 103/103/115	757 100/100/111	753 98/98/108	813 101/101/111	866 104/104/113	8340
-35	802 110/110/122	789 106/106/118	778 103/103/115	768 100/100/111	765 98/98/108	826 101/101/111	880 104/104/113	8340
-30	814 110/110/122	800 106/106/118	789 103/103/115	779 100/100/111	777 98/98/108	839 101/101/111	894 104/104/113	8340
-25	825 109/109/122	812 106/106/118	800 103/103/115	790 100/100/111	789 98/98/108	852 101/101/111	908 104/104/113	8340
-20	837 109/109/122	823 106/106/118	812 103/103/114	801 100/100/111	801 98/98/108	865 101/101/111	923 104/104/113	8340
-15	848 109/109/122	834 106/106/118	823 103/103/114	812 100/100/111	813 98/98/108	878 101/101/111	937 104/104/113	8340
-10	859 109/109/122	845 106/106/118	834 103/103/114	823 100/100/111	825 98/98/108	891 101/101/111	951 104/104/113	8340
-5	870 109/109/121	856 106/106/118	844 103/103/114	834 100/100/111	837 98/98/108	905 101/101/111	966 104/104/113	8340
0	881 109/109/121	867 106/106/118	855 102/102/114	844 100/100/111	849 98/98/108	918 101/101/111	980 104/104/113	8340
5	892 109/109/121	877 105/105/117	866 102/102/114	855 99/99/110	862 98/98/108	932 101/101/111	995 104/104/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 2000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	812 110/110/122	799 106/106/118	787 103/103/115	777 100/100/111	776 98/98/108	838 101/101/111	893 104/104/113	8340
-35	823 109/109/122	809 106/106/118	798 103/103/114	787 100/100/111	788 98/98/108	851 101/101/111	908 104/104/113	8340
-30	834 109/109/122	821 106/106/118	809 103/103/114	799 100/100/111	800 98/98/108	864 101/101/111	922 104/104/113	8340
-25	846 109/109/122	832 106/106/118	821 103/103/114	810 100/100/111	812 98/98/108	878 101/101/111	937 104/104/113	8340
-20	858 109/109/122	844 106/106/118	832 103/103/114	821 100/100/111	825 98/98/108	892 101/101/111	951 104/104/113	8340
-15	869 109/109/121	855 106/106/118	844 103/103/114	833 100/100/111	837 98/98/108	905 101/101/111	966 104/104/113	8340
-10	881 109/109/121	867 106/106/118	855 102/102/114	844 100/100/111	850 98/98/108	919 101/101/111	981 104/104/113	8340
-5	892 109/109/121	878 105/105/117	866 102/102/114	855 99/99/110	862 98/98/108	933 101/101/111	996 104/104/113	8340
0	903 109/109/121	889 105/105/117	877 102/102/114	866 99/99/110	875 98/98/108	947 102/102/111	1011 104/104/113	8340
5	912 108/108/120	899 105/105/117	887 102/102/113	876 99/99/110	894 98/98/108	968 102/102/111	1034 104/104/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 3000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	827 109/109/121	814 105/105/117	803 102/102/113	792 99/99/110	805 98/98/108	870 102/102/111	929 104/104/113	8340
-35	838 108/108/120	825 105/105/117	813 102/102/113	803 99/99/110	818 98/98/108	884 102/102/111	944 104/104/113	8340
-30	850 108/108/120	837 105/105/117	825 102/102/113	814 99/99/110	831 98/98/108	898 102/102/111	959 104/104/113	8340
-25	862 108/108/120	848 105/105/117	837 102/102/113	826 99/99/110	843 98/98/108	913 102/102/111	974 104/104/113	8340
-20	874 108/108/120	860 105/105/117	849 102/102/113	838 99/99/109	857 98/98/108	927 102/102/111	990 104/104/113	8340
-15	885 108/108/120	872 105/105/116	860 102/102/113	849 99/99/109	870 98/98/108	941 102/102/111	1006 104/104/113	8340
-10	897 108/108/120	883 105/105/116	871 101/101/113	860 99/99/109	883 98/98/108	956 102/102/111	1021 104/104/113	8340
-5	908 108/108/120	895 104/104/116	883 101/101/113	872 99/99/109	896 98/98/108	971 102/102/111	1037 104/104/113	8340
0	920 108/108/120	906 104/104/116	894 101/101/113	883 98/98/109	909 98/98/108	985 102/102/111	1053 105/105/113	8340
5	922 105/105/117	909 102/102/113	897 99/99/110	886 96/96/106	955 99/99/108	1036 102/102/111	1127 105/105/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 4000 ft

TEMP (ºC)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	841 107/107/119	829 104/104/116	817 101/101/112	807 98/98/108	838 99/99/108	907 102/102/111	972 105/105/113	8340
-35	853 107/107/119	840 104/104/115	829 101/101/112	818 98/98/108	851 99/99/108	922 102/102/111	987 105/105/113	8340
-30	865 107/107/119	853 104/104/115	841 101/101/112	830 98/98/108	865 99/99/108	936 102/102/111	1002 105/105/113	8340
-25	877 107/107/119	865 104/104/115	853 101/101/112	842 98/98/108	878 99/99/108	951 102/102/111	1018 105/105/113	8340
-20	890 107/107/119	877 104/104/115	865 101/101/112	854 98/98/108	892 99/99/108	966 102/102/111	1034 105/105/113	8340
-15	901 107/107/119	888 104/104/115	877 100/100/112	866 98/98/108	906 99/99/108	982 102/102/111	1050 105/105/113	8340
-10	913 107/107/119	900 103/103/115	888 100/100/111	877 98/98/108	919 99/99/108	997 102/102/111	1067 105/105/113	8340
-5	925 107/107/119	912 103/103/115	900 100/100/111	889 98/98/108	934 99/99/108	1012 102/102/111	1084 105/105/113	8340
0	937 106/106/117	924 102/102/114	912 99/99/110	901 97/97/107	964 99/99/108	1046 102/102/111	1132 105/105/113	8340
5	935 103/103/114	923 99/99/110	911 97/97/106	941 97/97/106	1025 100/100/108	1137 103/103/111	1246 106/106/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 5000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg)							
	MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	859 106/106/118	847 103/103/114	835 100/100/110	825 97/97/107	877 99/99/108	951 102/102/111	1032 105/105/113	8340
-35	870 106/106/117	858 103/103/114	846 100/100/110	836 97/97/107	892 99/99/108	966 102/102/111	1048 105/105/113	8340
-30	883 106/106/117	870 102/102/114	858 99/99/110	848 97/97/107	906 99/99/108	982 102/102/111	1064 105/105/113	8340
-25	895 106/106/117	882 102/102/114	871 99/99/110	860 97/97/107	920 99/99/108	998 102/102/111	1081 105/105/113	8340
-20	907 106/106/117	895 102/102/114	883 99/99/110	872 97/97/107	934 99/99/108	1014 102/102/111	1098 105/105/113	8340
-15	920 106/106/117	907 102/102/114	895 99/99/110	884 97/97/106	949 99/99/108	1030 102/102/111	1115 105/105/113	8340
-10	932 105/105/117	919 102/102/113	907 99/99/110	896 96/96/106	964 99/99/108	1046 102/102/111	1133 105/105/113	8340
-5	944 105/105/117	931 102/102/113	919 99/99/110	908 96/96/106	979 99/99/108	1063 102/102/111	1151 105/105/113	8340
0	952 103/103/114	939 100/100/110	927 97/97/107	950 97/97/106	1035 100/100/108	1143 103/103/111	1252 106/106/113	8340
5	950 100/100/110	938 97/97/107	926 94/94/103	1011 97/97/106	1126 101/101/108	1263 104/104/111	1390 107/107/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 6000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	876 105/105/116	864 101/101/112	852 98/98/109	847 96/96/106	920 99/99/108	1002 103/103/111	1096 105/105/113	8340
-35	888 105/105/116	876 101/101/112	864 98/98/109	860 96/96/106	935 99/99/108	1018 103/103/111	1113 105/105/113	8340
-30	901 104/104/116	889 101/101/112	877 98/98/109	874 96/96/106	950 99/99/108	1034 103/103/111	1130 105/105/113	8340
-25	914 104/104/116	901 101/101/112	890 98/98/108	887 96/96/106	965 99/99/108	1050 103/103/111	1149 105/105/113	8340
-20	927 104/104/116	914 101/101/112	902 98/98/108	901 96/96/106	981 99/99/108	1067 103/103/111	1167 105/105/113	8340
-15	939 104/104/116	926 101/101/112	914 98/98/108	915 96/96/106	996 99/99/108	1084 103/103/111	1185 105/105/113	8340
-10	954 104/104/115	941 101/101/112	929 98/98/108	932 96/96/106	1015 100/100/108	1107 103/103/111	1210 106/106/113	8340
-5	968 103/103/114	955 100/100/110	943 97/97/107	969 97/97/106	1056 100/100/108	1169 103/103/111	1282 106/106/113	8340
0	969 100/100/110	956 97/97/107	944 94/94/103	1028 97/97/106	1144 101/101/108	1283 104/104/111	1411 107/107/113	8340
5	968 97/97/107	956 94/94/103	997 95/95/103	1118 98/98/106	1262 102/102/108	1422 105/105/111	1572 107/107/113	8340
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 7000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	891 103/103/113	879 99/99/110	867 97/97/106	896 97/97/106	976 100/100/108	1087 103/103/111	1192 106/106/113	8340
-35	903 102/102/113	891 99/99/110	879 96/96/106	911 97/97/106	992 100/100/108	1104 103/103/111	1211 106/106/113	8340
-30	916 102/102/113	903 99/99/110	891 96/96/106	925 97/97/106	1008 100/100/108	1121 103/103/111	1230 106/106/113	8340
-25	929 102/102/113	916 99/99/110	904 96/96/106	940 97/97/106	1025 100/100/108	1139 103/103/111	1250 106/106/113	8340
-20	942 102/102/113	929 99/99/109	917 96/96/106	955 97/97/106	1041 100/100/108	1157 103/103/111	1270 106/106/113	8340
-15	955 102/102/113	942 99/99/109	930 96/96/106	970 97/97/106	1058 100/100/108	1175 103/103/111	1290 106/106/113	8340
-10	976 102/102/112	963 99/99/109	951 96/96/105	1002 97/97/106	1097 100/100/108	1224 104/104/111	1349 106/106/113	8340
-5	980 99/99/109	968 96/96/106	968 94/94/103	1062 98/98/106	1193 101/101/108	1343 104/104/111	1481 107/107/113	8340
0	981 97/97/106	968 94/94/102	1028 95/95/103	1163 98/98/106	1317 102/102/108	1488 105/105/111	1642 108/108/113	8340
5	980 94/94/102	992 92/92/100	1132 96/96/103	1292 99/99/106	1471 103/103/108	- -	- -	7923
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 8000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	905 101/101/111	893 97/97/107	882 95/95/104	951 97/97/106	1056 101/101/108	1182 104/104/111	1302 107/107/113	8340
-35	917 100/100/111	905 97/97/107	894 94/94/104	966 97/97/106	1072 101/101/108	1201 104/104/111	1323 107/107/113	8340
-30	931 100/100/111	918 97/97/107	907 94/94/103	982 97/97/106	1089 101/101/108	1219 104/104/111	1344 107/107/113	8340
-25	944 100/100/111	932 97/97/107	920 94/94/103	997 97/97/106	1106 101/101/108	1238 104/104/111	1365 107/107/113	8340
-20	958 100/100/111	945 97/97/107	933 94/94/103	1013 97/97/106	1123 101/101/108	1258 104/104/111	1386 107/107/113	8340
-15	973 100/100/110	960 97/97/107	949 94/94/103	1035 97/97/106	1150 101/101/108	1290 104/104/111	1420 107/107/113	8340
-10	995 99/99/109	982 96/96/105	993 94/94/103	1098 98/98/106	1234 101/101/108	1390 104/104/111	1536 107/107/113	8340
-5	994 96/96/105	982 93/93/101	1071 95/95/103	1213 99/99/106	1375 102/102/108	1556 105/105/111	1722 108/108/113	8340
0	996 93/93/101	1023 92/92/100	1171 96/96/103	1339 99/99/106	1527 103/103/108	- -	- -	7892
5	998 90/90/97	1147 93/93/100	1329 97/97/103	1527 100/100/106	- -	- -	- -	7376
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 9000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) / MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	925 99/99/109	913 96/96/106	913 94/94/103	1000 98/98/106	1123 101/101/108	1263 104/104/111	1392 107/107/113	8340
-35	938 99/99/109	926 96/96/106	927 94/94/103	1016 98/98/106	1141 101/101/108	1283 104/104/111	1414 107/107/113	8340
-30	952 99/99/109	939 96/96/105	942 94/94/103	1033 98/98/106	1159 101/101/108	1303 104/104/111	1437 107/107/113	8340
-25	966 99/99/109	953 96/96/105	957 94/94/103	1050 98/98/106	1177 101/101/108	1324 104/104/111	1460 107/107/113	8340
-20	980 99/99/109	967 96/96/105	972 94/94/103	1066 98/98/106	1196 101/101/108	1345 104/104/111	1484 107/107/113	8340
-15	1001 98/98/108	988 95/95/105	1007 94/94/103	1114 98/98/106	1252 101/101/108	1411 104/104/111	1561 107/107/113	8340
-10	1013 96/96/105	1001 93/93/102	1074 95/95/103	1214 99/99/106	1377 102/102/108	1557 105/105/111	1721 108/108/113	8340
-5	1014 93/93/102	1034 92/92/100	1182 96/96/103	1352 99/99/106	1539 103/103/108	- -	- -	7974
0	1013 90/90/98	1140 93/93/100	1319 97/97/103	1516 100/100/106	- -	- -	- -	7515
5	1106 90/90/97	1292 94/94/100	1506 98/98/103	- -	- -	- -	- -	7002
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

SIMPLIFIED TAKEOFF ANALYSIS
FLAP 2 – DRY RUNWAY
ICE PROTECTION (WINGSTAB+ENG) ON – ATR OFF

PW535E ENGINES

Airport Pressure Altitude: 10000 ft

TEMP (°C)	TAKEOFF WEIGHT (kg) — MINIMUM REQUIRED RUNWAY LENGTH (m) $V_1/V_R/V_2$ (KIAS)							
	6000	6400	6800	7200	7600	8000	8340	LIMITED WEIGHT
-40	948 98/98/108	936 95/95/104	960 94/94/103	1066 98/98/106	1198 101/101/109	1350 105/105/111	1493 107/107/113	8340
-35	960 98/98/108	948 95/95/104	976 94/94/103	1083 98/98/106	1218 101/101/109	1372 105/105/111	1518 107/107/113	8340
-30	974 98/98/107	962 95/95/104	992 94/94/103	1100 98/98/106	1237 101/101/109	1394 105/105/111	1542 107/107/113	8340
-25	988 98/98/107	976 95/95/104	1008 94/94/103	1117 98/98/106	1257 101/101/109	1416 105/105/111	1566 107/107/113	8340
-20	1003 98/98/107	990 95/95/104	1024 94/94/103	1135 98/98/106	1277 101/101/109	1439 105/105/111	1592 107/107/113	8340
-15	1033 97/97/107	1020 94/94/103	1071 95/95/103	1205 98/98/106	1364 102/102/109	1539 105/105/111	1700 108/108/113	8340
-10	1034 94/94/103	1036 92/92/100	1176 96/96/103	1342 99/99/106	1526 102/102/109	1726 106/106/111	- -	8064
-5	1037 92/92/99	1125 93/93/100	1296 96/96/103	1485 100/100/106	1692 103/103/109	- -	- -	7635
0	1078 90/90/97	1252 94/94/100	1455 97/97/103	- -	- -	- -	- -	7165
5	1227 91/91/97	1440 94/94/100	- -	- -	- -	- -	- -	6647
V_{FS}	117	121	125	128	132	135	138	

WARNING: THE VALUES ABOVE DO NOT TAKE INTO ACCOUNT OBSTACLES.

DRIFTDOWN TABLES (NET GRADIENT)

In the event of an engine failure during cruise the maximum airplane operating altitude is affected. The Driftdown tables present the one engine ceiling according to the airplane weight and temperature.

The airplane should level-off at the ceiling altitude.

NOTE: Static air temperatures were used to calculate the tables.

EXAMPLE

Given:

Airplane Weight ..... 7200 kg
Temperature ..... ISA + 10°C
Ice Protection..... OFF

Determine:

Ceiling..... 29000 ft
Driftdown Speed ..... 133 KIAS

PW535E ENGINES

WEIGHT (kg)	DRIFT DOWN SPEED (KIAS)	CEILING ALTITUDE (x 100 ft) ICE PROTECTION (WINGSTAB+ENG) OFF				
		ISA - 10	ISA	ISA + 10	ISA + 20	ISA + 35
5600	117	370	370	360	340	260
5800	119	370	370	360	330	250
6000	121	360	360	350	320	230
6200	123	350	350	340	310	220
6400	125	340	340	330	300	210
6600	127	330	330	320	280	200
6800	129	330	330	310	270	200
7000	131	320	320	300	250	180
7200	133	310	310	290	240	170
7400	134	310	310	280	230	160
7600	136	300	300	270	220	150
7800	138	300	300	260	210	140
8000	139	290	290	250	210	130
8200	141	280	280	240	200	120
8340	142	270	270	230	200	110

PW535E ENGINES

WEIGHT (kg)	DRIFT DOWN SPEED (KIAS)	CEILING ALTITUDE (x 100 ft) ICE PROTECTION (WINGSTAB+ENG) ON				
		ISA - 30	ISA - 20	ISA - 10	ISA	ISA + 10
5600	165	100	150	150	150	150
5800	165	100	150	150	150	150
6000	165	100	150	150	150	150
6200	165	100	150	150	150	150
6400	165	100	150	150	150	150
6600	165	100	150	150	150	150
6800	165	100	150	150	150	150
7000	165	100	150	150	150	150
7200	165	100	150	150	150	150
7400	165	100	150	150	150	150
7600	165	100	150	150	150	140
7800	165	100	150	150	150	130
8000	165	100	150	150	150	120

NOTE: The data above can be calculated only by OPERA versions 2.0, so it is applicable to airplanes Pre-Mod. SB 505-00-0001.

PW535E ENGINES

WEIGHT (kg)	DRIFT DOWN SPEED (KIAS)	CEILING ALTITUDE (x 100 ft) ICE PROTECTION (WINGSTAB+ENG) ON				
		ISA - 30	ISA - 20	ISA - 10	ISA	ISA + 10
5600	165	120	150	150	150	150
5800	165	120	150	150	150	150
6000	165	120	150	150	150	150
6200	165	120	150	150	150	150
6400	165	120	150	150	150	150
6600	165	120	150	150	150	150
6800	165	120	150	150	150	140
7000	165	120	150	150	150	130
7200	165	120	150	150	150	130
7400	165	120	150	150	150	120
7600	165	120	150	150	150	120
7800	165	120	150	150	150	110
8000	165	120	150	150	150	110
8200	165	120	150	150	150	100
8340	165	120	150	150	150	100

NOTE: Applicable to airplanes Post-Mod. SB 505-00-0001 or with an equivalent modification factory incorporated.

ENROUTE GRADIENT

This table presents the corrected gradient value due to the wind effect on the enroute gradient of climb/descent with one engine inoperative.

The wing effect correction is applicable for all weights, temperature and altitudes, considering the landing gear and flap up, and must replace the gradient for zero wind.

EXAMPLE

Given:

Headwind Wind ..... 40 kt
Gradient for Zero Wind 6.0%

Determine:

Gradient for 40 kt (headwind) 6.8%

CORRECTED GRADIENT %						
ZERO WIND	HEADWIND (kt)			TAILWIND (kt)		
	60	40	20	20	40	60
-6.0	-8.6	-7.3	-6.4	-6.0	-5.7	-5.6
-3.0	-4.8	-4.1	-3.6	-3.0	-3.0	-2.8
0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.0	3.4	3.3	3.1	2.3	2.0	1.8
6.0	7.3	6.8	6.3	4.8	3.9	3.6
9.0	11.4	10.5	9.6	7.1	5.7	4.9
12.0	15.7	14.1	12.9	9.2	7.5	6.5
15.0	20.1	18.2	16.3	11.4	9.3	7.8
18.0	25.0	22.2	19.8	13.5	10.8	9.0

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APPROACH DATA

APPROACH CLIMB, LANDING CLIMB AND LANDING REFERENCE SPEEDS

NOTE: - For Approach Flap 1, Landing Flap 3 and Engine Ice Protection OFF/ON – Wingstab OFF, the Landing Climb Speed is equal to the Landing Reference Speed.

- For Approach Flap 1, Landing Flap 3 and Engine Ice Protection ON – Wingstab ON (SWPS Ice Speed), the Approach Climb Speed, Landing Climb Speed and Landing Reference Speed have the same value.
- For Approach Flap 2, Landing Flap FULL and Engine Ice Protection OFF/ON – Wingstab OFF, the Approach Climb Speed, Landing Climb Speed and Landing Reference Speed have the same value.
- For Approach Flap 2, Landing Flap FULL and Engine Ice Protection ON – Wingstab ON (SWPS Ice Speed), the Approach Climb Speed, Landing Climb Speed and Landing Reference Speed have the same value.

EXAMPLE

Given:

Airplane Landing Weight ..... 6400 kg
Approach Flap 1
Landing Flap 3
Engine Ice Protection ..... OFF
Wingstab ..... OFF

Determine:

Approach Climb Speed ..... 110 KIAS
Landing Climb Speed ..... 107 KIAS
V_{REF} ..... 107 KIAS
V_{FS} ..... 121 KIAS

APPROACH FLAP 1 AND LANDING FLAP 3
ENGINE ICE PROTECTION OFF/ON – WINGSTAB OFF

PW535E ENGINES

WEIGHT (kg)	APPROACH	LANDING (CLIMB/REFERENCE)	V_{FS} – KIAS
	FLAP 1	FLAP 3	
	V_{AC} – KIAS	V_{REF} – KIAS	
5600	104	100	113
5800	105	102	115
6000	107	104	117
6200	109	106	119
6400	110	107	121
6600	112	109	123
6800	114	110	125
7000	115	112	126
7200	117	114	128
7400	118	115	130
7600	120	117	132
7800	121	118	133
8000	123	120	135
8200	124	121	137
8340	125	122	138

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT WAS EXCEEDED.

APPROACH FLAP 1 AND LANDING FLAP 3 ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED)

PW535E ENGINES

WEIGHT (kg)	APPROACH CLIMB/LANDING (CLIMB/REFERENCE) SPEED – KIAS	V_{FS} – KIAS
5600	108	127
5800	110	129
6000	111	131
6200	113	133
6400	115	135
6600	117	137
6800	118	139
7000	120	141
7200	122	143
7400	124	145
7600	125	147
7800	127	149
8000	128	151
8200	130	152
8340	131	154

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT WAS EXCEEDED.

APPROACH FLAP 2 AND LANDING FLAP FULL ENGINE ICE PROTECTION OFF/ON – WINGSTAB OFF

PW535E ENGINES

WEIGHT (kg)	APPROACH	LANDING (CLIMB/REFERENCE)	V_{FS} – KIAS
	FLAP 2	FLAP FULL	
	V_{AC} – KIAS	$V_{REF\ FULL}$ – KIAS	
5600	100	100	113
5800	101	101	115
6000	103	103	117
6200	105	105	119
6400	106	106	121
6600	108	108	123
6800	109	109	125
7000	111	111	126
7200	112	112	128
7400	114	114	130
7600	115	115	132
7800	117	117	133
8000	118	118	135
8200	120	120	137
8340	121	121	138

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT WAS EXCEEDED.

APPROACH FLAP 2 AND LANDING FLAP FULL ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED)

PW535E ENGINES

WEIGHT (kg)	APPROACH CLIMB/LANDING (CLIMB/REFERENCE) SPEED – KIAS	V_{FS} – KIAS
5600	106	126
5800	108	128
6000	109	131
6200	111	133
6400	113	135
6600	114	137
6800	116	139
7000	118	141
7200	119	143
7400	121	145
7600	122	147
7800	124	149
8000	125	151
8200	127	152
8340	128	154

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT WAS EXCEEDED.

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LANDING DATA

LANDING TECHNIQUE

The landing performance data in this manual is based on the following conditions:

- Steady three degree angle approach at V_{REF} in landing configuration;
- V_{REF} airspeed maintained at runway threshold;
- Idle thrust established at runway threshold;
- Attitude maintained until MLG touchdown;
- Maximum brake applied immediately after MLG touchdown;
- Antiskid system operative.

If these performance techniques are not strictly used for a typical landing made during normal operations, the distances may be longer.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED

The Maximum Landing Weight – Climb Limited tables present the maximum landing climb weight in compliance with the airworthiness climb requirements in function of the temperature and altitude and according to the ice protection system configuration.

The landing climb weights shown may be above the Maximum Landing Weight and are codified as follows:

- (A) Approach Climb Limited;
- (L) Landing Climb Limited;
- (E) Enroute Climb Limited;
- (O) Overweight Landing Limited.

NOTE: The overweight landing notation (O) is used to indicate that the airplane is not climb limited. Always check this structural limitation on Section 2.

EXAMPLE

Given:

Airport Pressure Altitude ..... 2000 ft
Approach Flap 1
Landing Flap 3
Engine Ice Protection ..... OFF
Wingstab ..... OFF
Temperature ..... 20°C

Determine:

Maximum Landing Weight –
Overweight Landing Limited ..... 8340 kg

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 1 – LANDING FLAP 3
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	-1000 ft	0 ft	1000 ft	2000 ft	3000 ft	4000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
0	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
45	8340 (O)	8340 (O)	8340 (O)	8340 (O)	-	-
50	8340 (O)	8340 (O)	-	-	-	-

NOTE: The values above Maximum Landing Weight must not be used for dispatch.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 1 – LANDING FLAP 3
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	5000 ft	6000 ft	7000 ft	8000 ft	9000 ft	10000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
0	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8236 (A)
25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8153 (A)	7679 (A)
30	8340 (O)	8340 (O)	8340 (O)	7938 (A)	7587 (A)	7126 (A)
35	8340 (O)	8212 (E)	7825 (E)	-	-	-
40	8015 (E)	-	-	-	-	-

NOTE: The values above Maximum Landing Weight must not be used for dispatch.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 1 – LANDING FLAP 3
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)			
	ALTITUDE			
	11000 ft	12000 ft	13000 ft	14000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-5	8340 (O)	8340 (O)	8340 (O)	8340 (O)
0	8340 (O)	8340 (O)	8340 (O)	8340 (O)
5	8340 (O)	8340 (O)	8333 (A)	7941 (A)
10	8340 (O)	8305 (A)	7896 (A)	7516 (A)
15	8275 (A)	7829 (A)	7410 (A)	7023 (A)
20	7751 (A)	7304 (A)	6892 (A)	6549 (A)
25	7212 (A)	6781 (A)	-	-

NOTE: The values above Maximum Landing Weight must not be used for dispatch.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 1 – LANDING FLAP 3
ENGINE ICE PROTECTION ON – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	-1000 ft	0 ft	1000 ft	2000 ft	3000 ft	4000 ft
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	5000 ft	6000 ft	7000 ft	8000 ft	9000 ft	10000 ft
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)			
	ALTITUDE			
	11000 ft	12000 ft	13000 ft	14000 ft
5	8340 (O)	8340 (O)	8065 (A)	7675 (A)
10	8340 (O)	8051 (A)	7641 (A)	7269 (A)

NOTE: - The values above Maximum Landing Weight must not be used for dispatch.

- Applicable to airplanes Post-Mod. SB 505-00-0001 or with an equivalent modification factory incorporated.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 1 – LANDING FLAP 3
ENGINE ICE PROTECTION ON – WINGSTAB ON
(SWPS ICE SPEED)

PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	-1000 ft	0 ft	1000 ft	2000 ft	3000 ft	4000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
0	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
8	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8329 (E)

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	5000 ft	6000 ft	7000 ft	8000 ft	9000 ft	10000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8303 (E)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8294 (E)	7839 (E)
-5	8340 (O)	8340 (O)	8340 (O)	8267 (E)	7843 (E)	7404 (E)
0	8340 (O)	8340 (O)	8170 (E)	7780 (E)	7358 (E)	6910 (E)
5	8340 (O)	8008 (E)	7600 (E)	7213 (E)	6803 (E)	6384 (E)
8	8072 (E)	7650 (E)	7386 (E)	6963 (E)	6534 (E)	6093 (E)

NOTE: - The shaded area and values above Maximum Landing Weight must not be used for dispatch.

- Applicable to airplanes Post-Mod. SB 505-00-0001 or with an equivalent modification factory incorporated.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 1 – LANDING FLAP 3
ENGINE ICE PROTECTION ON – WINGSTAB ON
(SWPS ICE SPEED)

PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	-1000 ft	0 ft	1000 ft	2000 ft	3000 ft	4000 ft
-35	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-30	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-25	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-20	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-15	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-10	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-5	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
0	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
5	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
8	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	5000 ft	6000 ft	7000 ft	8000 ft	9000 ft	10000 ft
-35	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-30	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-25	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-20	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-15	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)
-10	8150 (O)	8150 (O)	8150 (O)	8150 (O)	8150 (O)	7839 (E)
-5	8150 (O)	8150 (O)	8150 (O)	8150 (O)	7844 (E)	7403 (E)
0	8150 (O)	8150 (O)	8150 (O)	7780 (E)	7358 (E)	6910 (E)
5	8150 (O)	8008 (E)	7601 (E)	7213 (E)	6803 (E)	6384 (E)
8	8150 (O)	7900 (E)	7200 (E)	6900 (E)	6450 (E)	6050 (E)

NOTE: - The shaded area and values above Maximum Landing Weight must not be used for dispatch.

- Applicable to airplanes Pre-Mod. SB 505-00-0001 or with an equivalent modification factory incorporated.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 2 – LANDING FLAP FULL
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	-1000 ft	0 ft	1000 ft	2000 ft	3000 ft	4000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
0	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8172 (A)	7801 (A)
40	8340 (O)	8340 (O)	8340 (O)	8023 (A)	7640 (A)	7283 (A)
45	8340 (O)	8257 (A)	7873 (A)	7494 (A)	-	-
50	8084 (A)	7719 (A)	-	-	-	-

NOTE: The values above Maximum Landing Weight must not be used for dispatch.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 2 – LANDING FLAP FULL
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	5000 ft	6000 ft	7000 ft	8000 ft	9000 ft	10000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
0	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8027 (A)
10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8110 (A)	7705 (A)
15	8340 (O)	8340 (O)	8340 (O)	8109 (A)	7770 (A)	7327 (A)
20	8340 (O)	8340 (O)	8073 (A)	7705 (A)	7338 (A)	6894 (A)
25	8340 (O)	8042 (A)	7597 (A)	7165 (A)	6827 (A)	6454 (A)
30	7959 (A)	7530 (A)	7073 (A)	6653 (A)	6376 (A)	6009 (A)
35	7433 (A)	7028 (A)	6603 (A)	-	-	-
40	6934 (A)	-	-	-	-	-

NOTE: The values above the Maximum Landing Weight must not be used for dispatch.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 2 – LANDING FLAP FULL
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)			
	ALTITUDE			
	11000 ft	12000 ft	13000 ft	14000 ft
-40	8340 (O)	8340 (O)	8153 (A)	7949 (A)
-35	8340 (O)	8340 (O)	8159 (A)	7954 (A)
-30	8340 (O)	8340 (O)	8163 (A)	7958 (A)
-25	8340 (O)	8340 (O)	8164 (A)	7959 (A)
-20	8340 (O)	8340 (O)	8165 (A)	7961 (A)
-15	8340 (O)	8340 (O)	8166 (A)	7963 (A)
-10	8340 (O)	8340 (O)	8067 (A)	7721 (A)
-5	8340 (O)	8055 (A)	7696 (A)	7346 (A)
0	8021 (A)	7665 (A)	7318 (A)	6983 (A)
5	7659 (A)	7302 (A)	6958 (A)	6644 (A)
10	7315 (A)	6942 (A)	6611 (A)	6310 (A)
15	6922 (A)	6565 (A)	6234 (A)	5924 (A)
20	6510 (A)	6151 (A)	5821 (A)	5536 (A)
25	6080 (A)	5726 (A)	-	-

NOTE: The values above the Maximum Landing Weight must not be used for dispatch.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 2 – LANDING FLAP FULL ENGINE ICE PROTECTION ON – WINGSTAB OFF
PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	-1000 ft	0 ft	1000 ft	2000 ft	3000 ft	4000 ft
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	5000 ft	6000 ft	7000 ft	8000 ft	9000 ft	10000 ft
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8166 (A)	7795 (A)
10	8340 (O)	8340 (O)	8340 (O)	8153 (A)	7881 (A)	7482 (A)

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)			
	ALTITUDE			
	11000 ft	12000 ft	13000 ft	14000 ft
5	7428 (A)	7074 (A)	6741 (A)	6435 (A)
10	7094 (A)	6734 (A)	6412 (A)	6113 (A)

NOTE: The values above the Maximum Landing Weight must not be used for dispatch.

MAXIMUM LANDING WEIGHT – CLIMB LIMITED
APPROACH FLAP 2 – LANDING FLAP FULL ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED)

PW535E ENGINES

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	-1000 ft	0 ft	1000 ft	2000 ft	3000 ft	4000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
0	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
5	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
8	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8329 (E)

TEMP (°C)	MAXIMUM LANDING WEIGHT – CLIMB LIMITED (kg)					
	ALTITUDE					
	5000 ft	6000 ft	7000 ft	8000 ft	9000 ft	10000 ft
-40	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-35	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-30	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-25	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-20	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)
-15	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8303 (E)
-10	8340 (O)	8340 (O)	8340 (O)	8340 (O)	8294 (E)	7839 (E)
-5	8340 (O)	8340 (O)	8340 (O)	8267 (E)	7843 (E)	7404 (E)
0	8340 (O)	8340 (O)	8170 (E)	7780 (E)	7358 (E)	6910 (E)
5	8340 (O)	8008 (E)	7600 (E)	7213 (E)	6803 (E)	6384 (E)
8	8072 (E)	7650 (E)	7386 (E)	6963 (E)	6534 (E)	6093 (E)

NOTE: The shaded area and values above Maximum Landing Weight must not be used for dispatch.

UNFACTORED LANDING DISTANCES

Unfactored landing distance is the actual distance to land the airplane from a point 50 ft above runway threshold to complete stop, using the landing technique described in the beginning of this section.

Unfactored Landing Distance tables are presented for a set of pressure altitudes and winds for the conditions below:

- Dry runway;
- Zero slope;
- Ice Protection System:
  For Wingstab OFF, Engine Ice Protection OFF or ON,
  For Wingstab ON, Engine Ice Protection ON;
- Temperature: ISA (1);
- No SAT effect;
- No V_{REF} Overspeed;
- No Drag Index.

NOTE: 1) Wing and Stabilizer Ice-Protection system is auto-inhibited outside its operational envelope. Refer to its operational envelope in Section 2 for further information.

NORMAL OPERATION

The required landing distance for dispatch is the unfactored landing distance increased by a factor according to the operating regulations.

EXAMPLE

Given:

Airplane Landing Weight	6800 kg
Airport Pressure Altitude	2000 ft
Engine Ice Protection	OFF
Wingstab	OFF
Flap	3
Wind	10 kt

Determine:

Unfactored Landing Distance	748 m

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION OFF/ON – WINGSTAB OFF
FLAP 3

PW535E ENGINES

Weight (kg)	ALTITUDE							
	-1000 ft				0 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	777	652	613	574	790	665	625	586
5800	793	667	627	589	807	680	640	601
6000	809	683	642	603	823	696	656	616
6200	825	698	657	618	840	712	671	631
6400	842	713	673	633	857	728	687	646
6600	857	728	687	647	873	743	701	661
6800	873	743	702	661	889	758	716	675
7000	889	758	716	676	905	773	731	690
7200	905	773	731	690	922	789	747	705
7400	920	788	745	704	937	804	761	719
7600	936	802	759	718	953	819	776	733
7800	952	817	774	732	973	833	790	748
8000	974	831	788	746	996	849	805	762
8200	996	846	803	760	1019	864	820	777

Weight (kg)	ALTITUDE							
	1000 ft				2000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	805	679	639	599	820	693	652	613
5800	821	694	654	614	837	709	668	628
6000	838	710	670	630	854	725	684	644
6200	855	726	685	645	872	742	700	660
6400	873	743	701	661	889	758	716	676
6600	889	758	716	676	906	774	732	691
6800	906	774	732	691	923	790	748	706
7000	923	790	747	706	940	806	763	722
7200	939	806	763	721	957	823	779	737
7400	955	821	777	735	974	838	795	752
7600	972	836	792	750	995	853	810	767
7800	995	851	807	765	1018	869	825	782
8000	1019	866	822	779	1043	885	841	797
8200	1043	882	838	794	1068	901	856	812

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION OFF/ON – WINGSTAB OFF FLAP 3

PW535E ENGINES

Weight (kg)	ALTITUDE							
	3000 ft				4000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	835	707	666	626	851	722	681	641
5800	852	724	682	642	869	739	697	657
6000	870	740	699	658	887	756	714	673
6200	888	757	715	675	905	773	731	690
6400	906	774	732	691	924	791	748	707
6600	923	790	748	706	941	807	765	723
6800	941	807	764	722	959	824	781	739
7000	958	823	780	738	977	841	798	755
7200	976	840	797	754	995	858	814	771
7400	994	856	812	769	1018	874	830	787
7600	1018	872	828	784	1042	891	846	803
7800	1042	888	843	800	1068	907	862	818
8000	1068	904	859	815	1094	924	879	834
8200	1094	923	875	831	1122	947	895	850

Weight (kg)	ALTITUDE							
	5000 ft				6000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	867	737	696	655	887	756	714	673
5800	885	755	713	672	906	774	731	690
6000	904	772	730	689	925	791	749	707
6200	923	790	747	706	944	810	767	725
6400	942	808	765	723	964	828	785	742
6600	960	825	782	739	982	845	802	759
6800	978	842	798	756	1001	863	819	776
7000	997	859	815	772	1020	881	836	793
7200	1017	877	833	789	1045	899	854	810
7400	1042	893	849	805	1070	916	871	826
7600	1067	910	865	821	1097	933	887	843
7800	1094	927	882	837	1125	952	904	859
8000	1122	948	898	854	1154	976	922	876
8200	1150	972	918	870	1184	1001	945	893

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION OFF/ON – WINGSTAB OFF
FLAP 3

PW535E ENGINES

Weight (kg)	ALTITUDE							
	7000 ft				8000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	906	773	731	690	926	792	749	707
5800	926	792	749	707	946	810	767	725
6000	945	810	767	725	966	829	786	743
6200	965	829	785	743	986	848	804	761
6400	985	847	804	761	1006	867	823	780
6600	1004	865	821	778	1025	886	841	797
6800	1023	883	839	795	1045	904	859	815
7000	1044	902	857	813	1071	923	878	833
7200	1072	920	875	830	1100	942	896	851
7400	1098	937	892	847	1128	960	913	868
7600	1126	955	909	864	1157	981	931	886
7800	1156	978	926	881	1188	1006	951	903
8000	1186	1003	948	898	1219	1032	975	921
8200	1218	1029	972	918	1253	1059	1001	945

Weight (kg)	ALTITUDE							
	9000 ft				10000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	946	810	767	725	967	830	786	744
5800	966	830	786	743	988	850	806	762
6000	987	849	805	762	1009	870	825	781
6200	1007	868	824	781	1030	890	845	801
6400	1028	888	843	800	1051	910	864	820
6600	1048	907	862	818	1072	929	883	839
6800	1070	926	880	836	1099	948	902	857
7000	1099	945	899	854	1129	968	922	876
7200	1129	964	918	873	1160	988	941	895
7400	1158	983	936	890	1191	1011	959	913
7600	1189	1008	954	908	1223	1037	981	932
7800	1221	1035	978	926	1257	1065	1007	952
8000	1254	1062	1004	948	1292	1094	1034	977
8200	1289	1090	1030	973	1329	1124	1062	1003

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION OFF/ON – WINGSTAB OFF FLAP 3

PW535E ENGINES

Weight (kg)	ALTITUDE							
	11000 ft				12000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	990	851	807	764	1013	873	828	784
5800	1011	871	827	783	1035	893	848	804
6000	1032	891	846	802	1057	914	868	824
6200	1054	912	867	822	1079	935	889	844
6400	1076	933	887	842	1101	956	910	865
6600	1099	952	906	861	1130	977	930	884
6800	1129	972	926	880	1161	997	950	904
7000	1161	992	946	900	1194	1018	970	923
7200	1193	1014	965	919	1228	1044	991	944
7400	1226	1041	985	938	1262	1072	1015	963
7600	1260	1069	1011	956	1298	1101	1042	985
7800	1295	1098	1038	981	1335	1132	1071	1012
8000	1332	1128	1066	1008	1374	1164	1100	1040
8200	1371	1159	1096	1036	1415	1197	1131	1069

Weight (kg)	ALTITUDE							
	13000 ft				14000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	1037	895	849	805	1061	918	872	827
5800	1059	916	870	825	1084	939	893	848
6000	1082	937	891	846	1107	961	914	869
6200	1104	959	912	867	1130	983	936	890
6400	1130	981	934	888	1161	1006	958	912
6600	1161	1001	954	908	1195	1027	979	932
6800	1194	1022	975	928	1229	1048	1000	953
7000	1229	1046	995	948	1265	1077	1021	974
7200	1265	1076	1018	969	1303	1109	1050	995
7400	1301	1105	1046	989	1341	1139	1079	1021
7600	1338	1136	1075	1017	1380	1172	1109	1049
7800	1377	1168	1105	1045	1422	1205	1140	1079
8000	1419	1201	1136	1074	1466	1240	1173	1109
8200	1462	1236	1168	1104	1512	1277	1208	1142

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED) – FLAP 3

PW535E ENGINES

Weight (kg)	ALTITUDE							
	-1000 ft				0 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	851	721	680	640	866	736	694	654
5800	869	739	697	657	885	754	712	671
6000	887	756	714	673	903	771	729	688
6200	905	773	731	689	922	788	746	704
6400	924	790	747	706	940	806	763	721
6600	941	806	763	721	958	823	779	737
6800	959	824	781	738	977	841	797	754
7000	977	841	797	754	995	858	814	771
7200	994	856	813	770	1013	874	830	786
7400	1016	873	829	786	1039	891	847	803
7600	1041	890	845	801	1064	908	863	819
7800	1066	906	861	817	1091	925	879	835
8000	1092	922	877	833	1118	945	896	851
8200	1118	943	892	848	1145	967	913	867

Weight (kg)	ALTITUDE							
	1000 ft				2000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	882	751	709	668	899	767	724	683
5800	902	769	727	686	919	785	743	701
6000	920	787	744	703	938	803	761	719
6200	939	805	762	720	957	822	778	736
6400	958	823	780	737	977	840	797	754
6600	976	840	796	754	995	858	814	771
6800	996	858	814	771	1015	877	832	789
7000	1014	876	832	788	1035	894	850	806
7200	1037	892	848	804	1061	911	866	822
7400	1063	910	865	821	1088	930	884	840
7600	1090	927	882	838	1116	947	901	857
7800	1117	945	899	854	1144	969	919	873
8000	1145	969	916	871	1174	993	939	890
8200	1173	992	937	886	1203	1017	961	908

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED) – FLAP 3

PW535E ENGINES

Weight (kg)	ALTITUDE							
	3000 ft				4000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	916	783	740	699	933	799	756	715
5800	936	802	759	717	954	819	776	734
6000	956	820	777	735	974	838	794	752
6200	976	839	796	753	995	857	813	770
6400	996	858	814	771	1015	877	832	789
6600	1015	876	832	788	1035	895	850	806
6800	1035	895	851	807	1057	915	870	825
7000	1059	914	869	824	1085	934	888	844
7200	1086	931	886	841	1112	951	906	861
7400	1115	950	904	859	1142	971	924	879
7600	1143	969	922	876	1172	994	942	897
7800	1173	994	940	894	1203	1020	964	914
8000	1204	1019	964	911	1235	1047	989	935
8200	1234	1044	987	932	1267	1073	1014	958

Weight (kg)	ALTITUDE							
	5000 ft				6000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	952	816	773	731	974	837	793	751
5800	973	837	793	750	996	858	814	771
6000	994	856	812	769	1017	878	833	790
6200	1014	876	831	788	1038	898	853	809
6400	1035	896	851	807	1060	918	873	829
6600	1055	914	869	825	1081	938	892	847
6800	1082	935	889	845	1112	958	912	867
7000	1111	954	908	863	1142	978	932	886
7200	1139	972	926	881	1172	997	950	904
7400	1171	995	945	900	1205	1024	970	924
7600	1202	1020	965	918	1237	1051	994	942
7800	1234	1047	990	936	1272	1079	1020	965
8000	1268	1075	1017	961	1307	1108	1048	991
8200	1302	1102	1042	985	1343	1137	1075	1016

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED) – FLAP 3

PW535E ENGINES

Weight (kg)	ALTITUDE							
	7000 ft				8000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	996	857	813	770	1017	878	833	789
5800	1018	878	834	790	1040	899	854	810
6000	1040	899	854	810	1062	920	875	830
6200	1061	919	874	829	1085	941	895	850
6400	1083	940	894	849	1108	963	916	871
6600	1109	960	914	868	1138	983	936	890
6800	1141	981	935	889	1171	1005	958	911
7000	1173	1001	954	908	1204	1026	978	931
7200	1204	1024	973	927	1237	1053	997	950
7400	1238	1053	996	947	1273	1083	1025	971
7600	1272	1081	1023	967	1309	1112	1053	996
7800	1308	1110	1050	993	1347	1143	1082	1023
8000	1346	1141	1079	1020	1386	1175	1112	1051
8200	1383	1171	1107	1047	1426	1207	1141	1079

Weight (kg)	ALTITUDE							
	9000 ft				10000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	1040	899	853	809	1064	921	875	830
5800	1063	921	875	831	1088	944	897	852
6000	1086	942	896	851	1111	965	919	873
6200	1109	964	917	872	1134	988	941	895
6400	1137	986	939	893	1167	1010	963	916
6600	1168	1007	959	913	1201	1031	984	937
6800	1203	1029	981	935	1237	1055	1006	959
7000	1238	1055	1002	955	1273	1085	1028	980
7200	1272	1083	1026	975	1309	1115	1056	1000
7400	1310	1115	1055	999	1349	1148	1087	1029
7600	1348	1145	1084	1026	1389	1181	1118	1058
7800	1387	1178	1115	1054	1431	1214	1150	1088
8000	1429	1211	1146	1084	1475	1250	1183	1119
8200	1471	1245	1177	1113	1519	1285	1215	1149

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
FLAP FULL

PW535E ENGINES

Weight (kg)	ALTITUDE							
	-1000 ft				0 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	759	636	597	559	773	649	610	572
5800	774	650	611	573	788	663	624	585
6000	790	665	626	587	804	679	639	600
6200	805	680	640	601	820	693	653	614
6400	821	694	654	615	835	708	668	628
6600	836	709	668	629	851	723	682	642
6800	851	722	682	642	866	737	696	656
7000	865	736	695	655	881	751	710	669
7200	880	750	709	669	897	766	724	683
7400	895	765	723	682	912	780	738	697
7600	909	778	736	695	926	794	752	710
7800	924	791	749	708	942	808	765	723
8000	943	806	763	722	964	823	780	738
8200	963	820	777	735	985	837	793	751

Weight (kg)	ALTITUDE							
	1000 ft				2000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	787	662	623	584	801	676	636	597
5800	802	677	637	598	817	691	651	612
6000	819	693	653	613	834	707	667	627
6200	835	708	667	628	851	723	682	642
6400	851	723	682	642	867	738	697	657
6600	867	738	697	657	884	754	712	672
6800	883	753	711	671	900	768	727	686
7000	898	767	725	685	915	783	741	700
7200	914	782	740	699	931	799	756	715
7400	930	797	754	713	948	814	771	729
7600	944	811	768	726	964	828	785	743
7800	964	825	782	740	986	842	799	757
8000	986	840	797	754	1010	858	814	772
8200	1009	854	811	768	1033	873	829	786

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION OFF – WINGSTAB OFF
FLAP FULL

PW535E ENGINES

Weight (kg)	ALTITUDE							
	3000 ft				4000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	817	690	650	611	832	705	664	625
5800	833	706	665	626	849	721	680	640
6000	850	722	681	641	867	738	696	656
6200	867	738	697	656	884	754	712	672
6400	884	754	712	672	901	770	728	687
6600	901	770	728	687	919	786	744	703
6800	917	785	743	702	935	802	759	718
7000	933	800	758	716	952	818	775	733
7200	950	816	773	731	968	833	790	748
7400	966	831	788	746	988	849	806	763
7600	987	846	802	760	1010	864	821	778
7800	1009	861	817	774	1034	879	835	792
8000	1034	877	833	790	1059	896	851	808
8200	1058	892	847	804	1084	915	867	823

Weight (kg)	ALTITUDE							
	5000 ft				6000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	848	720	679	639	868	738	697	657
5800	865	736	695	655	886	755	713	672
6000	884	753	712	671	905	773	731	689
6200	901	770	728	687	922	790	747	706
6400	919	787	744	703	941	807	764	722
6600	937	803	761	719	959	824	781	739
6800	954	819	776	734	976	840	797	754
7000	971	835	792	750	994	857	813	770
7200	988	852	808	765	1014	873	829	786
7400	1011	868	824	781	1039	890	845	802
7600	1035	883	839	796	1064	906	861	817
7800	1059	899	854	811	1089	922	877	832
8000	1086	917	871	827	1117	944	893	849
8200	1112	938	886	842	1145	966	912	865

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
FLAP FULL

PW535E ENGINES

Weight (kg)	ALTITUDE							
	7000 ft				8000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	887	756	714	673	906	774	732	690
5800	905	773	731	689	925	791	749	707
6000	924	791	748	707	945	810	767	725
6200	943	808	765	723	963	828	784	742
6400	961	826	782	740	982	845	802	759
6600	980	843	800	757	1001	864	819	776
6800	998	860	816	773	1020	881	836	793
7000	1015	877	833	789	1041	898	853	809
7200	1040	894	849	806	1067	915	870	826
7400	1066	911	866	822	1095	933	888	843
7600	1092	927	882	838	1122	950	904	859
7800	1119	946	898	853	1149	973	920	875
8000	1148	970	916	870	1180	998	943	892
8200	1177	994	938	886	1210	1023	966	912

Weight (kg)	ALTITUDE							
	9000 ft				10000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	926	792	750	708	947	812	769	726
5800	945	810	767	725	967	830	786	744
6000	965	829	786	743	987	850	806	763
6200	985	847	804	761	1007	868	824	781
6400	1004	866	822	778	1027	887	842	799
6600	1024	884	840	796	1047	906	861	817
6800	1042	902	857	813	1070	924	879	834
7000	1068	920	874	830	1097	942	897	852
7200	1096	937	892	847	1126	961	915	869
7400	1125	956	910	865	1156	980	933	887
7600	1153	976	926	881	1185	1005	950	904
7800	1182	1000	945	897	1216	1030	973	921
8000	1214	1027	970	916	1250	1058	1000	944
8200	1246	1053	995	939	1283	1085	1025	968

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)
ENGINE ICE PROTECTION OFF – WINGSTAB OFF
FLAP FULL

PW535E ENGINES

Weight (kg)	ALTITUDE							
	11000 ft				12000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	970	833	789	746	993	854	810	766
5800	989	851	807	764	1013	873	828	785
6000	1011	871	827	783	1035	894	849	805
6200	1031	890	846	802	1055	913	868	823
6400	1051	910	864	820	1076	933	887	842
6600	1072	929	884	839	1102	953	907	862
6800	1100	948	902	857	1131	972	925	880
7000	1129	966	920	875	1161	991	944	898
7200	1159	985	938	893	1192	1013	963	917
7400	1190	1010	957	911	1225	1040	984	936
7600	1221	1035	979	928	1258	1067	1009	954
7800	1253	1061	1003	948	1292	1094	1035	978
8000	1289	1091	1031	974	1329	1125	1064	1005
8200	1324	1119	1058	999	1367	1155	1092	1031

Weight (kg)	ALTITUDE							
	13000 ft				14000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	1016	876	831	787	1041	899	853	809
5800	1037	895	850	806	1062	919	873	828
6000	1059	917	871	826	1085	940	894	849
6200	1080	937	891	846	1106	961	914	869
6400	1102	957	911	865	1133	982	935	889
6600	1133	978	931	885	1165	1003	955	909
6800	1163	997	950	904	1197	1023	975	928
7000	1195	1016	969	922	1230	1046	995	948
7200	1228	1043	988	942	1265	1075	1018	967
7400	1262	1072	1014	961	1301	1105	1046	989
7600	1296	1100	1040	984	1337	1135	1074	1015
7800	1332	1129	1068	1009	1375	1165	1102	1042
8000	1372	1161	1098	1038	1417	1199	1134	1072
8200	1411	1193	1127	1065	1459	1233	1165	1101

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED) – FLAP FULL

PW535E ENGINES

Weight (kg)	ALTITUDE							
	-1000 ft				0 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	820	693	653	614	835	707	667	627
5800	838	710	669	629	853	724	683	643
6000	854	725	684	644	870	740	699	658
6200	871	741	700	659	887	756	714	674
6400	888	757	715	675	904	772	730	689
6600	904	772	730	689	921	788	746	704
6800	921	788	746	705	938	805	762	720
7000	938	804	761	719	955	820	777	735
7200	953	818	775	733	971	835	792	750
7400	970	834	791	748	990	851	808	765
7600	990	849	805	763	1013	867	823	780
7800	1013	864	820	777	1036	882	838	794
8000	1036	879	835	792	1061	897	853	809
8200	1062	895	850	807	1087	917	869	825

Weight (kg)	ALTITUDE							
	1000 ft				2000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	851	722	681	641	867	737	696	655
5800	869	739	698	657	885	755	713	672
6000	886	755	714	673	903	771	729	688
6200	904	772	730	689	921	788	746	704
6400	921	789	746	705	939	805	763	721
6600	938	804	762	720	956	822	779	736
6800	956	822	778	736	975	839	796	753
7000	973	838	794	752	993	856	812	769
7200	990	853	809	767	1011	871	827	784
7400	1013	869	825	782	1037	888	844	800
7600	1036	885	841	797	1061	904	859	816
7800	1061	901	856	812	1087	920	875	831
8000	1086	917	872	828	1113	941	891	847
8200	1114	940	888	844	1142	964	910	863

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED) – FLAP FULL

PW535E ENGINES

Weight (kg)	ALTITUDE							
	3000 ft				4000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	883	753	711	670	901	769	727	686
5800	902	771	729	687	920	787	745	703
6000	921	788	745	704	939	805	762	720
6200	939	805	762	721	957	822	779	737
6400	958	823	780	737	977	840	797	754
6600	975	839	796	753	995	857	814	771
6800	994	857	813	770	1014	876	832	788
7000	1012	874	830	787	1035	893	849	805
7200	1035	890	846	802	1060	910	865	821
7400	1061	907	863	819	1087	927	882	838
7600	1087	924	879	834	1114	944	899	854
7800	1113	942	895	850	1142	967	915	870
8000	1141	965	911	866	1170	990	936	887
8200	1171	989	935	883	1202	1016	960	906

Weight (kg)	ALTITUDE							
	5000 ft				6000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	918	785	743	702	940	806	763	721
5800	938	804	761	720	961	825	782	739
6000	957	822	779	737	980	843	800	757
6200	977	840	797	754	1000	862	818	775
6400	996	859	815	772	1020	881	836	793
6600	1014	876	832	789	1039	899	854	810
6800	1034	895	851	807	1062	918	873	829
7000	1060	913	868	824	1090	936	891	846
7200	1086	930	884	840	1117	953	908	863
7400	1114	948	902	858	1146	973	926	881
7600	1142	968	919	874	1175	997	943	898
7800	1171	992	938	891	1206	1022	966	915
8000	1201	1017	961	908	1237	1048	990	936
8200	1234	1044	986	931	1272	1076	1017	961

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

UNFACTORED LANDING DISTANCE (m)

ENGINE ICE PROTECTION ON – WINGSTAB ON (SWPS ICE SPEED) – FLAP FULL

PW535E ENGINES

Weight (kg)	ALTITUDE							
	7000 ft				8000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	961	825	781	739	982	845	801	758
5800	982	845	801	758	1004	865	821	777
6000	1002	864	819	776	1024	884	840	796
6200	1022	883	838	795	1045	904	859	815
6400	1042	902	857	813	1066	924	878	834
6600	1062	920	875	831	1088	942	897	852
6800	1090	940	894	850	1119	963	917	871
7000	1119	959	913	868	1149	982	935	890
7200	1147	976	930	885	1178	1001	953	907
7400	1178	1000	949	903	1210	1028	973	926
7600	1208	1025	969	920	1242	1055	998	944
7800	1240	1051	994	940	1276	1082	1024	968
8000	1273	1078	1020	964	1311	1111	1050	993
8200	1309	1108	1047	990	1349	1141	1079	1020

Weight (kg)	ALTITUDE							
	9000 ft				10000 ft			
	WIND							
	-10 kt	0 kt	10 kt	20 kt	-10 kt	0 kt	10 kt	20 kt
5600	1004	865	821	777	1027	887	842	798
5800	1026	886	841	797	1050	908	863	818
6000	1047	906	861	816	1071	928	883	838
6200	1068	926	880	836	1093	949	903	858
6400	1090	946	900	855	1118	970	923	878
6600	1117	965	919	874	1148	989	943	897
6800	1149	986	939	894	1181	1011	963	917
7000	1180	1006	959	913	1214	1033	983	937
7200	1211	1030	977	931	1246	1060	1004	955
7400	1245	1058	1001	950	1282	1090	1031	976
7600	1278	1086	1027	971	1317	1119	1059	1001
7800	1314	1114	1054	997	1354	1149	1087	1028
8000	1350	1144	1082	1023	1393	1180	1116	1056
8200	1391	1177	1113	1052	1435	1214	1148	1086

CAUTION: SHADED AREAS REPRESENT CONDITIONS WHERE THE MAXIMUM LANDING WEIGHT OR CLIMB LIMITED WEIGHT WAS EXCEEDED.

SECTION 6

WEIGHT AND BALANCE

TABLE OF CONTENTS

INTRODUCTION

The Weight and Balance Section provides instructions referring to the weighting and loading of the PHENOM 300 airplane model.

The instructions and data herein presented are approved by the airworthiness authority to comply with the applicable regulations.

The basic empty weight value obtained during the airplane weighing procedures should be used as point of departure for each loading operation.

Based on the presented information, the operator can determine airplane weight and CG at any time of flight.

WEIGHT AND CENTER OF GRAVITY LIMITS

To comply with the performance and operating limitations of the regulations, the maximum allowable takeoff and landing operational weights may be equal to, but not greater than design limits.

Refer to Section 2, Limitations, for further information.

WARNING: IT IS RESPONSIBILITY OF THE OPERATOR TO ENSURE THAT THE AIRPLANE IS LOADED SO AS TO REMAIN WITHIN THE CENTER OF GRAVITY LIMITS THROUGHOUT THE FLIGHT.

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BALANCE REFERENCE SYSTEM

BALANCE ARMS

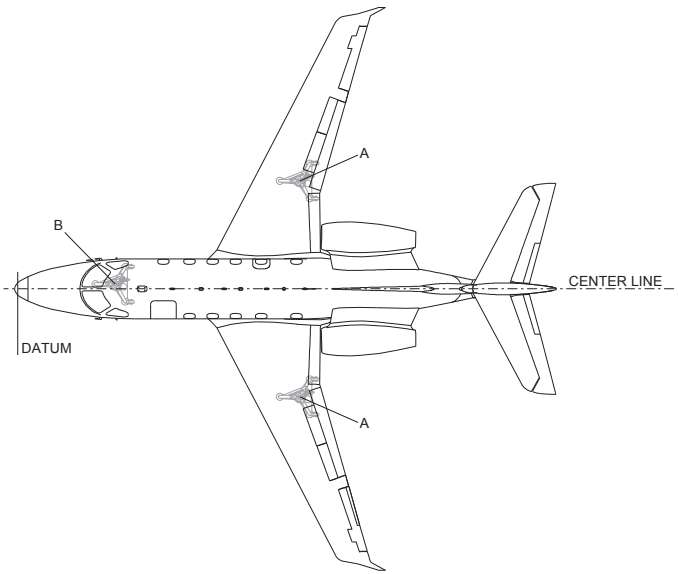
Longitudinal location of the Centers of Gravity (CG) identified throughout this manual regarding airplane and components will be referred to as Balance Arms. Balance Arms are the distance in meters from Airplane Datum.

AIRPLANE DATUM

The Airplane Datum is a plane, perpendicular to the fuselage centerline.

For external reference, the Datum is located at 2.29 m ahead of the Forward Jack Point.

POINT	BALANCE ARM (m)	CENTERLINE DISTANCE (m)
A	7.96	3.05
B	2.29	0.15



WING MEAN AERODYNAMIC CHORD (MAC)

MAC length = 2.05 m.

LEMAC balance arm = 6.72 m.

Percentage of MAC is obtained using the following formula:

$$\%MAC = \frac{(B.A. - 6.72) \times 100}{2.05}$$

Where B.A. = Balance arm of airplane CG measured in meters.

CONFIGURATION CHECKLIST/EQUIPMENT LIST

The balance arms are shown in the applicable Interior arrangement. Herein, the Standard Configuration is presented as an illustrative example, including the plan view and the Balance Arms.

For other interior configuration options, the respective Balance Arms are supplied together with the "Airplane Weighing Form", inserted in the "FINAL INSPECTION REPORT", by the time of the airplane's delivery.

STANDARD CONFIGURATION – CREW AND PASSENGERS (6 PASSENGER SEATS)

Balance Arm (m)				
Pilot & Copilot	Passengers 1 & 2	Passengers 3 & 4	Passengers 5 & 6	Lavatory
2.65	4.98	6.09	7.16	8.08

NOTE: Balance arms above refer to occupants. Seats balance arms are 0.15 m towards the back of the seat, from occupant arm.

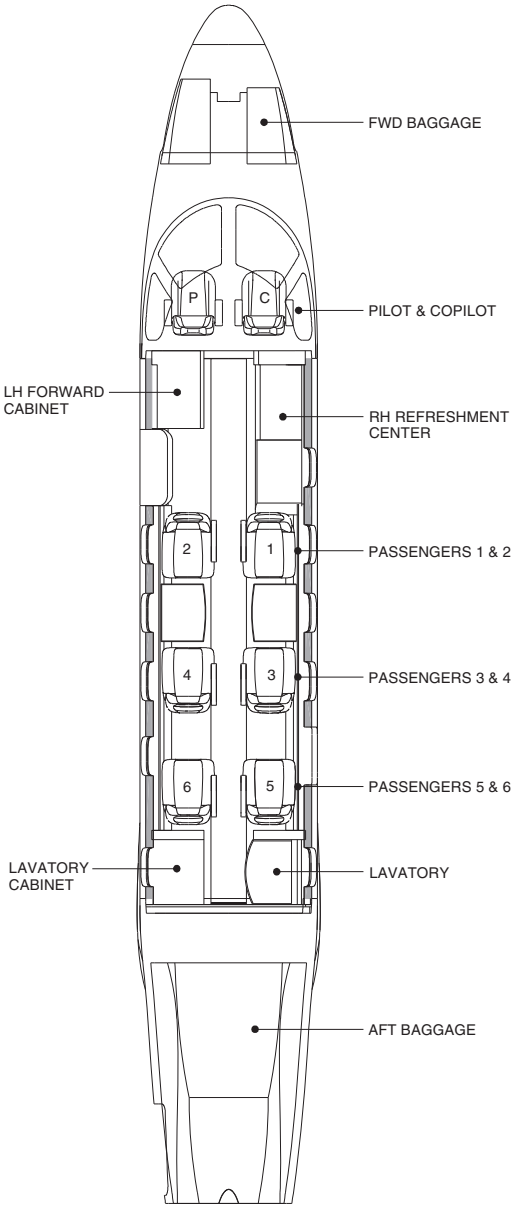
NAVIGATION KIT

Weight (kg)	Balance Arm (m)
10.00	3.00

STANDARD CONFIGURATION – BAGGAGE COMPARTMENTS

Balance Arm (m)				
Forward Baggage Compartment	Aft Baggage Compartment	LH Forward Cabinet	RH Refreshment Center	Lavatory Cabinet
1.00	10.08	3.45	3.71	8.08

Refer to Section 2, Limitations, for further information on baggage compartments load capacity.



STANDARD CONFIGURATION

FUEL DATA

FUEL QUANTITIES

FUEL CATEGORY	VOLUME (ℓ)	WEIGHT (kg)	CG BALANCE ARM (m)
UNUSABLE	28	22	6.51
UNDRAINABLE	1.25	1	6.52
USABLE	3024	2428	7.00

NOTE: The values specified above have been determined for an adopted fuel density of 0.803 kg/ℓ.

FUEL DISTRIBUTION TABLE

FUEL DISTRIBUTION ON THE LEFT AND RIGHT WING TANKS	
WEIGHT (kg)	**CG BALANCE ARM (m)**
20	6.51
40	6.50
60	6.50
80	6.49
100	6.48
120	6.48
140	6.47
160	6.47
180	6.46
200	6.46
220	6.46
240	6.46
260	6.46
280	6.46
300	6.46
320	6.46
340	6.46
360	6.46
380	6.46
400	6.47
420	6.47
440	6.47
460	6.48
480	6.48
500	6.48
520	6.49
540	6.49
560	6.50
580	6.50

FUEL DISTRIBUTION ON THE LEFT AND RIGHT WING TANKS	
WEIGHT (kg)	**CG BALANCE ARM (m)**
600	6.50
620	6.51
640	6.51
660	6.52
680	6.52
700	6.52
720	6.53
740	6.53
760	6.54
780	6.54
800	6.54
820	6.55
840	6.55
860	6.56
880	6.56
900	6.57
920	6.57
940	6.58
960	6.58
980	6.59
1000	6.59
1020	6.60
1040	6.60
1060	6.61
1080	6.62
1100	6.62
1120	6.63
1140	6.63
1160	6.64
1180	6.64
1200	6.65

FUEL DISTRIBUTION ON THE LEFT AND RIGHT WING TANKS	
WEIGHT (kg)	**CG BALANCE ARM (m)**
1220	6.65
1240	6.66
1260	6.66
1280	6.67
1300	6.68
1320	6.68
1340	6.69
1360	6.70
1380	6.70
1400	6.70
1420	6.71
1440	6.71
1460	6.72
1480	6.73
1500	6.73
1520	6.74
1540	6.74
1560	6.75
1580	6.76
1600	6.76
1620	6.77
1640	6.77
1660	6.78
1680	6.78
1700	6.79
1720	6.80
1740	6.80
1760	6.81
1780	6.81
1800	6.82

FUEL DISTRIBUTION ON THE LEFT AND RIGHT WING TANKS	
WEIGHT (kg)	**CG BALANCE ARM (m)**
1820	6.82
1840	6.83
1860	6.83
1880	6.84
1900	6.84
1920	6.85
1940	6.85
1960	6.86
1980	6.86
2000	6.87
2020	6.87
2040	6.88
2060	6.88
2080	6.89
2100	6.90
2120	6.90
2140	6.91
2160	6.91
2180	6.92
2200	6.92
2220	6.93
2240	6.94
2260	6.94
2280	6.95
2300	6.96
2320	6.96
2340	6.97
2360	6.98
2380	6.98
2400	6.99
2428	7.00

NOTE: The values specified above have been determined for an adopted fuel density of 0.803 kg/ℓ.

MISCELLANEOUS FLUIDS

FLUID	WEIGHT (kg)	BALANCE ARM (m)
WASTE TANK FLUID	3.5	8.08

WEIGHING AND BALANCE COMPUTATION

The BEW (Basic Empty Weight) is the weight of the empty airplane in its delivered configuration plus the weight of fluids (engine oil and hydraulic fluid serviced full, and the unusable fuel). The BEW and its respective balance arm is obtained from the airplane weighting record.

In order to determine the airplane weight and CG arm, it is necessary to add to the BEW all the weight and moment variations referent to the loaded items. The total moment divided by the total weight gives the final CG arm. The CG arm must be converted into %MAC. The pair Weight/CG must then be checked against the Weight/CG envelope given in Section 2, Limitations.

Example: Computation of Weight and CG arm.

For a BEW equal 5150 kg and BEW moment equal 39552 kgf.m:

Item	Weight (kg)	Arm (m)	Moment (kgf.m)
BEW	5150	7.68	39552
Pilot and Copilot	176	2.65	466.40
Pax 1 and 2	176	4.98	876.48
Pax 3	88	6.09	535.92
Catering	24	3.61	86.64
Fuel (1245 ℓ)	1000	6.59	6590.00
Aft Baggage	120	10.08	1209.60
Airplane Weight & CG	**6734**	**7.32**	**49317.04**

$$\%MAC = \frac{(7.32 - 6.72) \times 100}{2.05} = 29.27$$

NOTE: - The fuel weight specified above have been determined for an adopted fuel density of 0.803 kg/ℓ.
- The values above are for exemplification purpose. Use the airplane actual BEW for determining the Weight and CG arm.

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BAGGAGE LOADING

BAGGAGE WEIGHT AND LOCATION

The baggage weight limits, location and the respective balance arm may be obtained from the applicable interior arrangement.

The data shown in this Section are applicable to the airplane's Standard Configuration. For other interior configuration options, the weight limits, location and the respective balance arm are supplied together with the "Airplane Weighing Form", inserted in the "FINAL INSPECTION REPORT".

BAGGAGE COMPARTMENT

The baggage should be evenly distributed in each compartment to avoid load concentration.

Baggage/Cargo must not become a hazard to the airplane structure or systems as a result of shifting under operational loads. Therefore, sharp edge volumes and/or dense cargo (objects significantly more dense than typical passenger baggage) must be arranged with adjacent soft volumes or protections thus preventing airplane damage in case of baggage/cargo shifting due to operational loads.

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SUPPLEMENTS

TABLE OF CONTENTS

NOTE: Check (✓) the supplement applicable to the airplane configuration.

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SUPPLEMENT 1

RVSM OPERATION

TABLE OF CONTENTS

GENERAL

INTRODUCTION

This Supplement is provided to present the data required for operation in the RVSM (Reduced Vertical Separation Minimum) airspace. The RVSM operation reduces the PHENOM 300 model minimum vertical separation from 2000 ft to 1000 ft between FL 290 and FL 410.

Airworthiness approval alone does not authorize flight into airspace for which an RVSM operational approval is required by an ICAO Regional Navigation Agreement.

The information herein presented must replace or complement the equivalent data in the basic AFM.

LIMITATIONS

KINDS OF OPERATION

- Reduced Vertical Separation Minimum (RVSM)

KINDS OF OPERATION EQUIPMENT LIST (KOEL)

OPERATION: RVSM	
1) INSTALLATIONS	
System	**Function/Equipment**
Automatic Flight Control System	1 Autopilot with Altitude Hold Mode Operative
Flight Instruments/Navigation	1 Altitude Alerter;
Flight Instruments/Navigation	2 RVSM Compliant Air Data System (ADS)
Flight Instruments/Navigation	1 Transponder

NOTE: - The ADS 1 and ADS 2 are compliant with RVSM operation.

- The IESI must not be used for RVSM operation.
- Should any of the required equipment fail prior to the airplane entering RVSM airspace, the pilot should request a new clearance.
- The local authority determines the requirements for an operational transponder in each area where operations are intended.

NORMAL PROCEDURES

The actions listed below must complement the procedures contained in the basic AFM. The remaining Normal Procedures Section remains unchanged.

EXTERNAL SAFETY INSPECTION

NOSE SECTION

Air Data Smart Probes ..... CONDITION, NO OBSTRUCTION

Particular attention should be paid to the condition of static sources and to the marked area on the fuselage skin near each Air Data Smart Probe.

BEFORE TAKEOFF

Altimeters ..... SET TO THE AIRFIELD QNH

Altitude Indications ..... CHECK

NOTE: - An alternative procedure using QFE may also be used.

- The maximum difference between both primary altimeters indications must not exceed 23 m (75 ft).

CRUISE

Be sure that all required equipment is in proper operating condition.

Ensure that the airplane is flown at the cleared flight level and that ATC clearances are fully understood and followed. Do not depart from cleared flight level without a positive clearance from ATC except for a contingency or emergency situation.

While changing flight levels do not overshoot or undershoot the cleared flight level by more than 45 m (150 ft).

The autopilot should be operative and engaged during level cruise, except for circumstances such as the need to re-trim the airplane or when it must be disengaged due to turbulence.

AFTER LANDING

In case of failure or malfunction, the following information should be recorded when appropriate:

- ADS 1, ADS 2 altimeter readings;
- Altitude selector setting;
- Baro Set value and Baro Set unit (InHg/HPa);
- Flight Director used with the Autopilot to control the airplane and any differences when the other Flight Director was coupled;
- Use of air data system reversion for fault diagnosis procedure;
- The transponder selected to provide altitude information to ATC and any difference noted when an alternative transponder was selected, if applicable.

EMERGENCY AND ABNORMAL PROCEDURES

The actions listed below must complement the procedures contained in the basic AFM. The remaining Emergency and Abnormal Procedures Section remains unchanged.

- In case of emergency or abnormal situation or contingencies (equipment failures, weather, etc.) which affect the ability to maintain the cleared flight level, notify ATC and co-ordinate an action plan that is appropriate to the airspace concerned;
- Notify ATC when encountering greater than moderate turbulence;
- If unable to notify ATC and obtain an ATC clearance prior to deviating from the cleared flight level, follow any established contingency procedures and obtain ATC clearance as soon as possible.

PERFORMANCE

Performance Data presented in the basic AFM remains unchanged.

SUPPLEMENT 2

HIGH ALTITUDE LANDING AND TAKEOFF OPERATION

TABLE OF CONTENTS

GENERAL

INTRODUCTION

This Supplement presents the data required to perform takeoff or landing operations at high altitude airports, from 8300 ft up to 14000 ft.

This AFM Supplement does not constitute approval to conduct High Altitude Operations. The airplane must be properly equipped and approval must be obtained from the appropriate regulatory authority prior to conducting these operations.

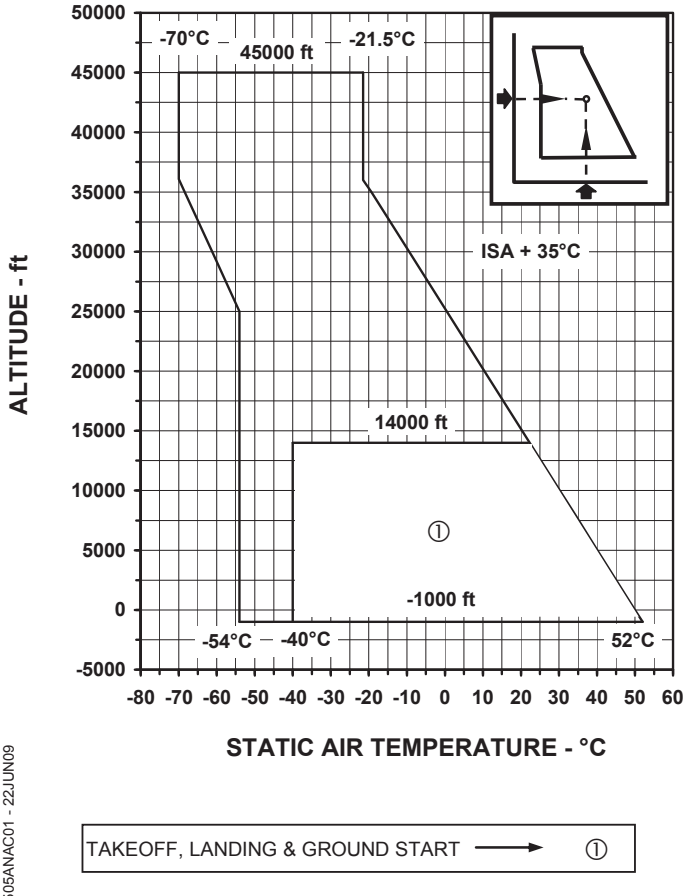
For limitations, procedures and performance information not contained in this Supplement, refer to the basic AFM and Supplements related to the associated engines, as applicable.

LIMITATIONS

APPLICABILITY

This Supplement is applicable to PHENOM 300 when operating in airports above 8300 ft.

OPERATIONAL ENVELOPE



NOTE: In the event of a landing below -40°C, report to the maintenance personnel.

NORMAL PROCEDURES

The actions listed below must complement the procedures contained in the basic AFM. The remaining Normal Procedures Section remains unchanged.

NOTE: At least one pilot is required to wear oxygen mask continuously below 25000 ft.

BEFORE TAKEOFF

Oxygen Mask ..... DON

At or above 9600 ft:

HI FIELD Indication ..... CHECK ON

AFTER TAKEOFF/CLIMB

NOTE: Do not climb to more than 25000 ft while cabin altitude is more than 10000 ft.

At or above 25000 ft:

HI FIELD Indication ..... CHECK OFF

Oxygen Mask ..... AS REQUIRED

DESCENT

At or below 25000 ft:

Oxygen Mask ..... DON

Pressurization ..... CHECK LFE

Check the destination airport altitude.

HI FIELD Indication (if applicable) ..... CHECK ON

EMERGENCY AND ABNORMAL PROCEDURES

The Emergency and Abnormal Procedures presented in the basic AFM remain unchanged.

PERFORMANCE

Performance Data presented in the basic AFM remains unchanged.

SUPPLEMENT 3

OPERATIONS WITH FADEC SOFTWARE PRIOR TO VERSION 4.3 (PRE-MOD. SB 505-73-0001)

TABLE OF CONTENTS

GENERAL

INTRODUCTION

This Supplement presents the required information to operate airplanes Pre-Mod. SB 505-73-0001, "New FADEC (Full Authority Digital Engine Control) Software Upgrade – Version 4.3".

The information presented herein must replace or complement the equivalent data in the basic AFM.

LIMITATIONS

POWER PLANT

OPERATIONAL LIMITS

OPERATING CONDITION		OPERATING LIMITS				
Thrust Setting	Time Limit	Maximum ITT (°C)	N2 (%)	N1 (%)	Oil Pressure (psid) (1)	Oil Temperature (°C) (5)
Maximum	5 minutes (3)	725	101	100	45 to 160	10 to 132.2
Takeoff	5 minutes (2)	700 (6)	101	100	45 to 160	10 to 132.2
Maximum Continuous (4)	N/A	680	101	100	45 to 160	10 to 132.2
Maximum Climb (4)	N/A	680	101	100	45 to 160	10 to 132.2
Ground Idle	N/A	N/A	55.1	-	25 to 160	-40 to 132.2
Flight Idle	N/A	N/A	55.1	-	25 to 160	-
Starting	5 seconds	740	-	-	-	-40 minimum
Transient	20 seconds	740	103	102	0 to 20	-
	200 seconds	-	-	-	-	140.5 maximum
	400 seconds	-	-	-	20 to 270	-

NOTE: 1) For N2 speeds above 60% the oil pressure below 45 psid is undesirable and should be tolerated only for the completion of the flight, preferably, at reduced power setting.

NOTE: 2) Take-off ratings are limited to 5 minutes duration.

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NOTE: 3) Maximum take-off is intended for emergency situations with one engine inoperative with anti-ice on.

NOTE: 4) Maximum climb is the maximum rating for climb phase under normal operation. Maximum continuous is automatically selected when an OEI event is detected by the FADEC.

NOTE: 5) For operation in severe cold environments, following engine start, it is permissible to operate the engine up to 70% N2, in order to warm the oil to the minimum temperature for normal operation (above 10°C).

NOTE: 6) Applicable for WINGSTAB switch OFF. For WINGSTAB switch ON, the limit is 685°C below 6000 ft and 650°C at or above 6000 ft.

NOTE: 7) In case of any unrecoverable engine surge lasting more than 5 seconds, a boroscope inspection to be performed in accordance to the PW535E Maintenance Manual.

THRUST ASSURANCE CHECK

A Thrust Assurance Check must be performed before each takeoff by monitoring the ITT within limits, after thrust levers be positioned at TO/GA up to 30 seconds minimum or ITT stabilization, whichever occurs last.

NOTE: The Thrust Assurance Check is not required, in case of dual pilot operation, if the pilot not flying monitors the ITT within limits during the takeoff ground run.

NORMAL PROCEDURES

BEFORE TAKEOFF

----------SHORTLY BEFORE TAKEOFF----------

Thrust Assurance Check.....PERFORM, IF REQUIRED

EMERGENCY AND ABNORMAL PROCEDURES

ENGINE 1 (2) TT0 HEATER FAILURE

Exit or avoid icing conditions.

Associated Circuit Breaker (A1 or A20)..... PULL

NOTE: Do not push the associated circuit breaker for the remainder of the flight.

PERFORMANCE

The Performance Data presented in the basic AFM remains unchanged.

WEIGHT AND BALANCE

The Weight and Balance presented in the basic AFM remains unchanged.

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SUPPLEMENT 4

OPERATION WITH GARMIN G3000 AVIONICS SYSTEM

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GENERAL

INTRODUCTION

This Supplement presents the required information to operate the airplane with Garmin G3000 avionics system.

The information contained herein supplements or supersedes the basic airplane flight manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this document, consult the basic airplane flight manual.

GARMIN G3000 GLOBAL NAVIGATION SATELLITE SYSTEM (GPS/SBAS)

SYSTEM APPROVALS

The Garmin G3000 GNSS (GPS/SBAS) has been demonstrated capable of, and it has been shown to meet the accuracy requirements for the following operations. These do not constitute operational approvals.

SYSTEM APPROVALS	GUIDANCE
GNSS Equipment	FAA AC 20-138C
RNP Operations in the U.S. NAS	FAA AC 90-105
U.S. RNAV 2 and RNAV 1	FAA AC 90-100A
RNP-10 (RNAV 10)	FAA Order 8400.12C
RNP-4	FAA Order 8400.33 FAA AC 20-138C
P-RNAV (RNAV 1)	TGL-10 Rev 1 FAA AC 90-96A
B-RNAV (RNAV 5)	EASA AMC 20-4 FAA AC 90-96A
RNP APCH (including baro-VNAV Approach)	EASA AMC 20-27 FAA AC 20-138C FAA AC 90-105
LPV Approaches	EASA AMC 20-28 FAA AC 90-107
Airplanes Pre-Mod. SB 505-31-0017: Baro-VNAV (En-route and Terminal)	FAA AC 20-138C FAA AC 90-105
Airplanes Post-Mod. SB 505-31-0017: Baro-VNAV (Climb, Cruise and Descent)	FAA AC 20-138D FAA AC 90-105

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GNSS EQUIPMENT (AC 20-138C)

- The Garmin GNSS navigation system installed in the airplane is a GPS system with a Satellite Based Augmentation System (SBAS) approved under TSO-C145c Class 3, TSO-C146c Class 3, and installed in accordance with AC 20-138C.
- The Garmin GNSS navigation system as installed in the airplane complies with the requirements of AC 20-138C and is approved for navigation using GPS and SBAS (within the coverage of a Satellite Based Augmentation System complying with ICAO Annex 10) for IFR en-route, terminal area, and non-precision approach operations (including those approaches titled "GPS", "or GPS", and "RNAV (GPS)" approaches). The Garmin GNSS navigation system installed in the airplane is approved for approach procedures with vertical guidance including "LPV" and "LNAV/VNAV minimums", within the U.S. National Airspace System.

RNP OPERATIONS IN U.S. NAS (AC 90-105)

- The Garmin GNSS navigation system as installed in the airplane complies with the equipment requirements of AC 90-105 and meets the equipment performance and functional requirements to conduct RNP terminal departure and arrival procedures and RNP approach procedures without RF (radius to fix) legs. Part 91 subpart K and 135 operators require operational approval from the FAA.

RNAV 2 AND RNAV 1 (AC 90-100A)

- The Garmin GNSS navigation system as installed in the airplane complies with the equipment requirements of AC 90-100A for RNAV 2 and RNAV 1 operations. In accordance with AC 90-100A, Part 91 operators (except subpart K) following the airplane and training guidance in AC 90-100A are authorized to fly RNAV 2 and RNAV 1 procedures. Part 91 subpart K and 135 operators require operational approval from the FAA.

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RNP-10 (RNAV-10) (ORDER 8400.12C)

- The Garmin GNSS navigation system has been found to comply with the requirements for GPS Class II oceanic and remote navigation (RNP-10) without time limitations in accordance with AC 20-138A and FAA Order 8400.12C. The Garmin GNSS navigation system can be used without reliance on other long-range navigation systems. This does not constitute an operational approval.

RNP-4 (Order 8400.33)

- The Garmin GNSS navigation system as installed in the airplane complies with the navigation requirements for primary means of Class II navigation in oceanic and remote navigation (RNP-4) in accordance with AC 20-138C and FAA Order 8400.33. The Garmin GNSS navigation system can be used without reliance on other long-range navigation systems. Additional equipment may be required to obtain operational approval to utilize RNP-4 performance. This does not constitute an operational approval.

P-RNAV (TGL-10/AC 90-96A) AND B-RNAV (AMC 20-4/AC 90-96A)

- The Garmin GNSS navigation system as installed in the airplane complies with the accuracy, integrity, and continuity of function, and contains the minimum system functions required for P-RNAV operations in accordance with TGL-10 Rev 1.
- The GNSS navigation system has two ETSO-C145c/TSO-C145c Class 3 approved, and ETSO-C146c/TSO-C146c Class 3. The Garmin GNSS navigation system as installed in the airplane complies with the equipment requirements for P-RNAV (RNAV 1) and B-RNAV (RNAV 5) operations in accordance with AC 90-96A, TGL-10 Rev 1 and AMC 20-4. This does not constitute an operational approval.

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RNP APCH (AMC 20-27/AC 20-138C/AC 90-105)

- The Garmin GNSS navigation system as installed in the airplane complies with the system requirements for RNP Approaches (RNP APCH) as per AMC 20-27 (Airworthiness Approval and Operational Criteria for RNP Approach (RNP APCH) Operations Including APV BARO-VNAV Operations), AC 20-138C (Airworthiness Approval of Positioning and Navigation Systems) and AC 90-105 (Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System). Temperature compensation on the final approach segment is provided, as per RTCA DO-236B. Activation of approach waypoints temperature compensation must be coordinated with ATC.

LPV APPROACHES (AMC 20-28/AC 90-107)

- The Garmin GNSS navigation system as installed in the airplane complies with the system requirements for LPV Approaches as per AMC 20-28 (Airworthiness Approval and Operational Criteria for RNAV GNSS approach operation to LPV minima using SBAS) and AC 90-107 (Guidance for Localizer Performance with Vertical Guidance and Localizer Performance without Vertical Guidance Approach Operations in the U.S. National Airspace System).

BARO-VNAV (AC 20-138C/AC 90-105)

- For airplanes Pre-Mod. SB 505-31-0017, G3000 Barometric VNAV function is approved for en-route/terminal descents, as per AC 20-138C. En-route/terminal descent guidance is provided up to the FAF waypoint when there is not a procedure that provides vertical guidance following the FAF. Guidance is provided up to the waypoint preceding the FAF (FAF-1) when there is a procedure that provides vertical guidance (ILS, baro-VNAV or SBAS based) following the FAF. Temperature compensation for approach waypoints is provided, as per RTCA DO-236B. Activation of approach waypoints temperature compensation must be coordinated with ATC.

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BARO-VNAV (AC 20-138D/AC 90-105)

- For airplanes Post-Mod. SB 505-31-0017, G3000 Barometric VNAV function is approved for climb, cruise and descent, as per AC 20-138D. Descent guidance is provided up to the FAF waypoint when there is not a procedure that provides vertical guidance following the FAF. Guidance is provided up to the waypoint preceding the FAF (FAF-1) when there is a procedure that provides vertical guidance (ILS, baro-VNAV or SBAS based) following the FAF. Temperature compensation for approach waypoints is provided, as per RTCA DO-236B. Activation of approach waypoints temperature compensation must be coordinated with ATC.

LIMITATIONS

ICE AND RAIN PROTECTION

OPERATION IN ICING CONDITIONS

Minimum Airspeed:

Wing and Stabilizer Anti-Ice System Armed..... 165 KIAS

NOTE: - The A-I WINGSTB INHB caution message will be presented if pilots command the WINGSTAB Switch to ON position outside Wing and Stabilizer Anti-Ice System operational envelope below 30000 ft. Follow its associated procedure (Section 4, Emergency and Abnormal Procedures).

- The A-I WINGSTB ARM advisory message will be presented if pilots command the WINGSTAB Switch to ON position above 30000 ft. Follow its associated procedure (Supplement 4, Emergency and Abnormal Procedures).

SURFACEWATCH™ (IF APPLICABLE)

- Takeoff/Landing Awareness Function of the SurfaceWatch™ is intended to be used as an aid to situational awareness only.
- Flight crew takeoff and landing assessments should not be based on SurfaceWatch™ alerts.
- SurfaceWatch™ must be inhibited for abnormal landings.

SYNTHETIC VISION SYSTEM (SVS) (IF APPLICABLE)

SVS DATABASES

The terrain data has a resolution of 5 arc-seconds, this means that the terrain elevation contours in the database are stored broken down into squares 5 arc-seconds on each side.

The other SVS limitations remain unchanged.

GARMIN G3000 AVIONICS SYSTEM

Refer to Garmin – Embraer Prodigy™ Touch Flight Deck 300 Pilot's Guide for further information on system characteristics. The GARMIN G3000 avionics system has the following limitations:

- Use of VNAV is prohibited during the intermediate segment of an approach that includes a teardrop course reversal.
- Dead Reckoning Mode use is allowed only in en-route (ENR) or oceanic (OCN) phases of flight. The estimated navigation data supplied by the system in DR Mode must not be used as a sole means of navigation.
- The trip statistics information, fuel statistics information and other kinds of statistics presented in the G3000 Trip Planning and Weight and Fuel screens on the Touchscreen Controller are supplemental information only and must be confirmed by the flight crew prior to use.

GARMIN G3000 GLOBAL NAVIGATION SATELLITE SYSTEM (GPS/SBAS)

SYSTEM LIMITATIONS

The pilot must confirm at system initialization that the Navigation database is current.

Navigation database is expected to be current for the duration of the flight. If the AIRAC cycle will change during flight, the pilot must ensure the accuracy of navigation data, including suitability of navigation facilities used to define the routes and procedures for flight. If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

GPS/SBAS based IFR en-route, oceanic, and terminal navigation is prohibited unless the pilot verifies and uses a valid, compatible, and current Navigation database or verifies each waypoint for accuracy by reference to current approved data.

Discrepancies that invalidate a procedure shall be reported to Garmin International. The affected procedure is prohibited from being flown using data from the Navigation database until a new Navigation database is installed in the airplane and verified that the discrepancy has been corrected.

For flight planning purposes, in areas where SBAS coverage is not available, the pilot must check RAIM availability. This requirement is not necessary if SBAS coverage is confirmed to be available along the entire route of flight.

For flight planning purposes, operations within the U.S. National Airspace System on RNP and RNAV procedures when SBAS signals are not available, the availability of GPS integrity RAIM shall be confirmed for the intended route of flight. In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended route of flight, the flight should be delayed, canceled, or rerouted on a track where RAIM requirements can be met.

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For flight planning purposes for operations within European B-RNAV and P-RNAV airspace, if more than one satellite is scheduled to be out of service, then the availability of GPS integrity RAIM shall be confirmed for the intended flight (route and time). In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended flight, the flight should be delayed, canceled, or rerouted on a track where RAIM requirements can be met.

For flight planning purposes, operations where the route requires Class II navigation, the airplane's operator or pilot-in-command must use the Garmin WFDE Prediction program to demonstrate that there are no outages on the specified route that would prevent the Garmin GNSS navigation system to provide primary means of Class II navigation in oceanic and remote areas of operation that requires RNP-10 or RNP-4 capability. If the Garmin WFDE Prediction program indicates fault exclusion (FDE) unavailability will exceed 34 minutes in accordance with FAA Order 8400.12C for RNP-10 requirements, or 25 minutes in accordance with FAA Order 8400.33 for RNP-4 requirements, then the operation must be rescheduled when FDE is available.

Both Garmin GPS navigation receivers must be operating and providing GPS navigation guidance to their respective PFD for operations requiring RNP-4 performance.

North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace operations per AC 91-49 and AC 120-33 require both GPS/SBAS receivers to be operating and receiving usable signals except for routes requiring only one Long Range Navigation sensor. Each display computes an independent navigation solution based on the on-side GPS sensor. However, either display will automatically revert to the cross-side sensor if the on-side sensor fails or if the cross-side sensor is determined to be more accurate. A "BOTH ON GPS1" or "BOTH ON GPS2" message does not necessarily mean that one GPS has failed. Refer to the GPS STATUS page to determine the state of the unused GPS.

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Whenever possible, RNP and RNAV routes including Standard Instrument Departures (SIDs) and Obstacle Departure Procedures (ODPs), Standard Terminal Arrival (STAR), and en-route RNAV "Q" and RNAV "T" routes should be loaded into the flight plan from the database in their entirety, rather than loading route waypoints from the database into the flight plan individually. Selecting and inserting individual named fixes from the database is permitted, provided all fixes along the published route to be flown are inserted. Manual entry of waypoints using latitude/longitude or place/bearing is prohibited.

"GPS", "or GPS", and "RNAV (GPS)" instrument approaches using the Garmin navigation systems are prohibited unless the pilot verifies and uses the current Navigation database. GPS based instrument approaches must be flown in accordance with an approved instrument approach procedure that is loaded from the Navigation database.

Not all published Instrument Approach Procedures (IAP) are in the Navigation database. Pilots planning on flying an RNAV instrument approach must ensure that the Navigation database contains the planned RNAV Instrument Approach Procedure and that approach procedure must be loaded from the Navigation database into the FMS flight plan by its name.

IFR non-precision approach approval using the GPS/SBAS sensor is limited to published approaches within the U.S. National Airspace System. Approaches to airports in other airspace are not approved unless authorized by the appropriate governing authority.

The navigation equipment required to join and fly an instrument approach procedure is indicated by the title of the procedure and notes on the IAP chart. Use of the Garmin GPS/SBAS receivers to provide navigation guidance during the final approach segment of an ILS, LOC, LOC-BC, LDA, SDF, MLS or any other type of approach not approved for "or GPS" navigation is prohibited. When using the Garmin VOR/LOC/GS receivers to fly the final approach segment, VOR/LOC/GS navigation data must be selected and presented on the CDI of the pilot flying.

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Navigation information is referenced to the WGS-84 reference system, and should only be used where the Aeronautical Information Publication (including electronic data and aeronautical charts) conform to WGS-84 or equivalent.

When using GPS/NAV mode to intercept the final approach course, monitor the flight director transition to LOC/GS. If the transition does not occur automatically, manually select HDG mode and CDI source to LOC in order to intercept the final approach course.

Localizer Performance (LP) approach procedures are not allowed.

OPERATIONAL LIMITATIONS

The Garmin – Embraer Prodigy™ Touch Flight Deck 300 Cockpit Reference Guide must be available to the flight crew whenever navigation is predicated on the use of the system.

Advisory vertical guidance deviation information is only an aid to help pilots comply with altitude restrictions. When using advisory vertical guidance, the pilot must use the primary barometric altimeter to ensure compliance with all altitude restrictions, particularly during instrument approach operations.

The Flight Director must be engaged to perform Baro-VNAV operations (Climb, Cruise, Descent and Approach).

When using the Baro-VNAV function, the barometric altimeter must be used as the primary altitude reference for all operations; including instrument approach procedure step-down fixes.

For flight planning purposes in European airspace, flight crew should ensure sufficient means are available to navigate and land at the destination or at an alternate aerodrome in the case of loss of RNP APCH airborne capability. In particular, the flight crew should check that:

- a non-RNP APCH procedure is available at the alternate, where a destination alternate is required.
- at least one non-RNP APCH procedure is available at the destination aerodrome, where a destination alternate is not required.

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For flight planning purposes in European airspace, flight crew should ensure sufficient means are available to navigate and land at the destination or at an alternate aerodrome in the case of loss of LPV airborne capability. In particular, the flight crew should check that:

- a non-RNAV GNSS based procedure is available at the alternate (where a destination alternate is required) unless the airspace authority does not require such requirement.
- at least one non-RNAV GNSS based procedure is available at the destination aerodrome (where a destination alternate is not required) unless the airspace authority does not require such requirement.

For flight planning purposes, operations within the Brazilian airspace using GNSS requires that the availability of GPS integrity RAIM be confirmed before departure and before entrance to each phase of flight. When the RAIM is not available, other type of navigation must be used or the schedule of the flight must be changed until the RAIM is available again.

En-route operations within the Brazilian airspace under instrument flight rules require that the airplane has the basic equipment for air navigation appropriate for the route to be flown. Such equipment shall be used compulsorily, when there is an integrity alarm and on the portion of the route where the function RAIM is supposed to be unavailable.

Airplane accomplishing GNSS SIDs or GNSS STARs within the Brazilian airspace must have their basic navigation equipment tuned on the appropriate frequencies, so as to provide fast and safe transition in the case of occurrence of RAIM alarm. In case that there is prevision of unavailability of the RAIM function during the flight period, only the basic equipment of air navigation shall be used.

For airplane accomplishing GNSS approach procedures within the Brazilian airspace the pilot must assure that the air navigation aids needed to the aerodrome operations at the alternative aerodrome are available. Pilot must designate an alternative aerodrome that offers an approach procedure in operation based in conventional air navigation aids.

ELECTRONIC DISPLAY SYSTEM

ELECTRONIC DOCUMENT VIEWER

The document viewer alone will not eliminate the need for other means of accessing the airplane manuals.

NORMAL PROCEDURES

COCKPIT/CABIN SAFETY INSPECTION

ICE PROTECTION Panel..... CHECK
Check ENG 1 & 2 Switches and WINGSTAB Switch in the OFF position.

BEFORE TAKEOFF

Transponder/TCAS II (if applicable) ..... SET
Verify transponder mode as required by local rules.
If airplane is equipped with TCAS II, make sure that it is not in STBY mode.

SHUTDOWN

ICE PROTECTION Panel..... CHECK
Check ENG 1 & 2 Switches and WINGSTAB Switch in the OFF position.

OPERATION IN ICING CONDITIONS

The A-I WINGSTB ARM advisory message may be presented during operation in icing conditions. If the message is presented, refer to the associated procedure in Supplement 4 Emergency and Abnormal Procedures.

WINDSHEAR PREVENTION/RECOVERY

WINDSHEAR CAUTION:

Indication: A yellow flag "WINDSHEAR" is displayed on PFD.

Aural Warning: CAUTION WINDSHEAR, CAUTION WINDSHEAR.

GO-AROUND Procedure ..... ACCOMPLISH

WINDSHEAR WARNING:

Indication: A red flag "WINDSHEAR" is displayed on PFD.

Aural Warning: WINDSHEAR, WINDSHEAR, WINDSHEAR.

- Thrust Levers ..... MAX
- Autopilot ..... DISENGAGE
- Pitch Angle (nose up) ..... 15°

  Initially adjust the airplane pitch angle toward 15° (nose up). After that, adjust pitch attitude smoothly in order to achieve the minimum airspeed possible without stall warning activation.

NOTE: Always respect the stall warning aural alarm.

Maintain airplane configuration. Do not change gear and flap position until terrain clearance is assured.

EMERGENCY AND ABNORMAL PROCEDURES

NON-ANNUNCIATED PROCEDURES

EMERGENCY PROCEDURES

The non-annunciated emergency procedures of the basic AFM remain the same.

ABNORMAL PROCEDURES

BLANK DISPLAY UNIT WITH AUTOMATIC REVERSION

Cycle the PFD 1 (2) MODE Switch (REV then AUTO).

If the display does not revert to the normal condition or an abnormal behavior occurs, set PFD 1 (2) MODE Switch as required.

NOTE: Only one attempt to return to a normal condition is allowed.

BLANK DISPLAY UNIT WITHOUT AUTOMATIC REVERSION

On TAWS Panel:

PFD 1 (2) MODE Switch ..... AS REQUIRED

GTC 1 (2) FAILURE

In case one GTC fails, the remaining GTC will provide interface to the system.

In case both GTCs fail, the FMS function becomes unavailable and communication is switched to emergency frequency.

LAND AS SOON AS PRACTICAL.

ONE ENGINE INOPERATIVE IN ICING CONDITIONS

XBLEED Knob ..... AUTO

Minimum airspeed:

Wing and Stabilizer Anti-Ice System Inhibited or Armed (flap and gear up) ..... 165 KIAS

Wing and Stabilizer Anti-Ice System Uninhibited (flap and gear up) ..... 150 KIAS

Altitude ..... 15000 ft MAXIMUM

N1 ..... ABOVE WAI BUG

If it is not possible to descend below 15000 ft:

Icing Conditions ..... EXIT/AVOID

ANNUNCIATED PROCEDURES

ELECTRICAL

ELECTRICAL EMERGENCY

Communication System 2 (VHF and Audio) is inoperative.

GTC 2 is inoperative.

DC BUS 2 OFF

Communication System 2 (VHF and Audio) is inoperative.

GTC 2 is inoperative.

EMERGENCY BUS OFF

Audio 1 is inoperative.

GTC 1 is inoperative.

FLIGHT INSTRUMENTS, COMMUNICATION AND NAVIGATION

GTC 1 (2) OVERHEAT

If associated with smoke from the affected GTC:

Crew Oxygen Masks ..... DON, EMERGENCY THEN 100%

EMERGENCY may be selected during 2 minutes maximum then set to 100%.

Crew Oxygen Masks Auto Dilution Valve ..... CLOSED

Smoke Goggles (if available) ..... DON

Communication ..... ESTABLISH

GTC 1 (B8) or GTC 2 (B26) Circuit Breaker ..... PULL

SMOKE EVACUATION Procedure ..... AS REQUIRED

MFD CONFIGURATION

On ground, report to the maintenance personnel.

In-flight:

PFD 1 (2) MODE Switch ..... REV OR SPLIT

MFD FAULT

On ground, report to the maintenance personnel.

In-flight:

PFD 1 (2) MODE Switch ..... REV OR SPLIT

PFD 1 (2) CONFIGURATION

On ground, report to the maintenance personnel.

In-flight and associated with flying pilot:

PFD 1 (2) MODE Switch ..... REV OR SPLIT

PFD 1 (2) FAULT

On ground, report to the maintenance personnel.

In-flight and associated with flying pilot:

PFD 1 (2) MODE Switch..... REV OR SPLIT

PFD 1 (2) OVERHEAT

If associated with smoke from the affected PFD:

Crew Oxygen Masks ..... DON, EMERGENCY THEN 100%

EMERGENCY may be selected during 2 minutes maximum then set to 100%.

Crew Oxygen Masks Auto Dilution Valve..... CLOSED

Smoke Goggles (if available)..... DON

Crew Communication ..... ESTABLISH

PFD 1 (A7) or PFD 2 (B24) Circuit Breaker..... PULL

PFD 1 (2) MODE Switch..... AS REQUIRED

SMOKE EVACUATION Procedure ..... AS REQUIRED

If required during approach:

Associated Circuit Breaker ..... PUSH

TRANSPONDER FAIL

Select and use the remaining Transponder, if available.

TRANSPONDER IN STANDBY

Transponder ..... AS REQUIRED

FUEL

FUEL PUMP 1 (2) FAILURE

On ground: do not takeoff.

During flight:

If FUEL PUMP 1 (2) FAIL message is displayed during FUEL IMBALANCE Procedure or during ENGINE IN-FLIGHT START Procedure:

Associated FUEL PUMP Switch ..... ON

After procedure accomplished:

FUEL PUMP Switches ..... AUTO

ICE AND RAIN PROTECTION

ANTI-ICE WING/STABILIZER ARMED

In-flight:

Minimum Airspeed..... 165 KIAS

Flap..... ZERO

WINGSTAB Switch..... KEEP ON

After leaving icing conditions and if there is no ice accretion on the airplane:

WINGSTAB Switch ..... OFF, THEN ICE SPEED RESET

WARNING: THE WINGSTAB SWITCH MUST BE KEPT ON UNTIL CREW IS CERTAIN THAT ALL ICE HAS BEEN REMOVED.

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PERFORMANCE

The airplane performance data presented in the basic AFM remains unchanged.

WEIGHT AND BALANCE

The airplane weight and balance data presented in the basic AFM remains unchanged.

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SUPPLEMENT 5

CONTROLLER-TO-PILOT DATA LINK COMMUNICATION (CPDLC)

TABLE OF CONTENTS

GENERAL

This Supplement presents the required information to operate the Controller-to-Pilot Data Link Communication (CPDLC) system.

The information herein presented must replace or complement the equivalent data or procedures in the basic AFM.

LIMITATIONS

The Limitations section presented in the basic AFM remain unchanged.

NORMAL PROCEDURES

The Airworthiness Authority has approved the airplane data link system to the criteria contained in AC 20-140A for ATN B1 using VDL M2. The data link system meets the airplane-allocated performance requirements for continental applications ATN B1 using VDL M2.

This AFM entry does not, by itself, constitute an operational approval where such an approval is required.

EMERGENCY AND ABNORMAL PROCEDURES

The Emergency and Abnormal Procedures presented in the basic AFM remain unchanged.

PERFORMANCE

The Performance Data presented in the basic AFM remain unchanged.

WEIGHT AND BALANCE

The Weight and Balance Data presented in the basic AFM remain unchanged.

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APPENDICES

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APPENDIX 1 CONFIGURATION DEVIATION LIST

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APPENDIX 1

CONFIGURATION DEVIATION LIST

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INTRODUCTION

This Configuration Deviation List contains additional certificate limitations for operation of the airplanes without certain secondary airframe and engine parts as listed herein. When the airplane is operated using the CDL, the limitations specified in the AFM must still be complied with, as amended in this Appendix. All the items that are related to the airworthiness of the airplane and not included on the list are automatically required to be installed.

The associated limitations must be listed on a placard affixed in the cockpit in clear view of the pilots and other appropriate crewmember(s). The pilot in command should be notified of each operation with a missing part(s) by listing the missing part(s) in the flight or dispatch release. The operator should list in the airplane logbook an appropriate notation covering the missing part(s) on each flight.

If an additional part is lost, the airplane may not depart the airport at which it landed following this event, until it complies with the limitation of the CDL. This, of course, does not preclude the issuance of a ferry permit to allow the airplane to be flown to a point where the necessary repairs or replacement can be made.

No more than one part for any one system may be missing, unless specific combinations of parts are included in the CDL. Unless otherwise specified, parts from different systems may be missing. The performance penalties are cumulative, unless specifically designated penalties are indicated for the combination of missing parts.

Where performance penalties are listed as negligible, no more than three negligible items may be missing without taking further penalty. For each missing item more than three, reduce the takeoff, landing and enroute climb limits by 41 kg (90 lb). Where performance penalties are listed as no penalty, any accumulative number of items listed as no penalty may be missing without further penalty.

Takeoff performance penalties should be applied to the takeoff weights that are limited by performance considerations (i.e., takeoff field length, first, second, or final segment climb, or takeoff flight path).

If the performance-limited takeoff weight is greater than the maximum certified takeoff weight, the takeoff performance penalties should be applied to the maximum certified takeoff weight to ensure compliance with the noise requirements.

Landing performance penalties should be applied to the landing weights that are limited by performance considerations (i.e., landing field length, landing climb, or approach climb). If the performance-limited landing weight is greater than the maximum certified landing weight, the landing performance penalties should be applied to the maximum certified landing weight to ensure compliance with the noise requirements.

En route performance penalties apply only to operations that are limited by the one-engine inoperative en route climb performance.

To correctly apply the speed tape, perform Aircraft Maintenance Manual TASK 51-26-00-910-801-A. The use of speed tape is time limited to 10 days.

If the CDL item refers to a MMEL item, the MMEL repair interval must be applied.

COMPONENT LOCATION

The numbering and designation of each system in this Appendix is based on ATA Spec. 2200. The parts within each system are identified by its functional description and, when necessary, by door or panel identification. See Aircraft Maintenance Manual, Chapter 06, for panel identification.

CONFIGURATION DEVICE LIST

System & Sequence Number / 1. ITEM	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
23 COMMUNICATIONS			
61-00 Static Dischargers			
(For airplanes with 2 static dischargers on each aileron)	14	8	The airplane is allowed to be dispatched with 1 (one) static discharger per control surface and winglet, provided the total amount of installed static dischargers is equal to or greater than 8 (eight).
(For airplanes with 3 static dischargers on each aileron)	16	8	The airplane is allowed to be dispatched with 1 (one) static discharger per control surface and winglet, provided the total amount of installed static dischargers is equal to or greater than 8 (eight).

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CONFIGURATION DEVIATION LIST

System & Sequence Number	1. ITEM	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
33 LIGHTS				
44-01	Wing Inspection Light Lens	1	0	May be missing with no penalty provided: a) Cavity is covered with speed tape, and b) Affected light is deactivated and considered inoperative. Refer to MMEL 33-44-01.
45-01	Red Beacon Light Assembly	1	0	May be missing with no penalty provided: a) Cavity is covered with speed tape, and b) Affected light is deactivated and considered inoperative. Refer to MMEL 33-45-01.
48-02	Aft Navigation Light Assembly	2	0	One or both may be missing with negligible penalty provided: a) Cavity is covered with speed tape, and b) Affected light is deactivated and considered inoperative. Refer to MMEL 33-48-00.
49-01	Upper Anti-Collision (Strobe) Light Assembly	1	0	May be missing with no penalty provided: a) Cavity is covered with speed tape, and b) Affected light is deactivated and considered inoperative. Refer to MMEL 33-49-00.

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CONFIGURATION DEVICIATION LIST

System & Sequence Number	1. ITEM	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
53 FUSELAGE				
03-00	Forward Fuselage Jack Point Cover (122 AR)	1	0	May be missing with no penalty provided cavity is covered with speed tape.

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CONFIGURATION DEVICIATION LIST

System & Sequence Number	1. ITEM	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
57 WINGS				
03-00	Wing Jack Point Covers (541 VB/641 VB)	2	0	One or both may be missing with no penalty provided cavity is covered with speed tape.

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