



OPERATIONAL EVALUATION REPORT

EMBRAER

EMB-550 (LEGACY 500, PRAETOR 600)

EMB-545 (LEGACY 450, PRAETOR 500)

BRAZILIAN AIRCRAFT EVALUATION GROUP

REVISION 11 – JANUARY 23, 2023

OPERATIONAL EVALUATION REPORT

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EMB-550 (LEGACY 500, PRAETOR 600)

EMB-545 (LEGACY 450, PRAETOR 500)

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Revision Record

Revision Nº.	Content	Date
Original	Initial EMB-550 (Legacy 500) Operational Evaluation	19 MAR 2015
1	Autobrake, Low Visibility Operations (CAT II)	31 AUG 2015
2	Initial EMB-545 (Legacy 450) Operational Evaluation; EMB-550 (Legacy 500) Thrust Reverser Heat Shield Installation; EMB-550 (Legacy 500) HALTO	26 NOV 2015
3	Steep Approach Mode, Pro-Line Fusion Avionics Load 4.1 and FMS database for Takeoff and Landing Function	22 FEV 2016
4	Editorial changes; information on Pro Line Fusion avionics software versions and ADS-B Out	15 SEP 2016
5	Windshear Detection and Escape Guidance System; Enhanced Vision System; Head-Up Display and Enhanced Flight Vision System	21 OCT 2016
6	Future Air Navigation System – FANS	13 SEP 2017
7	EMB-550 (Praetor 600) evaluation; Pro-Line Fusion Avionics Load 6.3.	15 MAY 2019
8	EMB-545 (Praetor 500) evaluation.	16 AUG 2019
9	EMB-545/550 ADS-B In and Weather Radar RTA-4218 (PWS and VWx)	18 NOV 2019
10	Synthetic Vision Guidance System - SVGS	16 DEC 2019
11	Required Navigation Performance - Authorization Required (RNP-AR); editorial changes	23 JAN 2023

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Acronyms

ADI.....	Attitude Director Indicator
ADS.....	Automatic Dependent Surveillance
AFCS.....	Automatic Flight Control System
AFM.....	Airplane Flight Manual
AIRAC.....	Aeronautical Information Regulation and Control
ALS.....	Approach Light System
ANAC.....	<i>Agência Nacional de Aviação Civil</i>
AEO.....	All Engines Operating
AOM.....	Airplane Operations Manual
ATO.....	Approved Training Organization
CAS.....	Crew Alerting System
CAT II.....	Category II
CAT III.....	Category III
CCP.....	Crew Coordination Procedure
CCP.....	Cursor Control Panel
CFIT.....	Controlled Flight Into Terrain
CPDLC.....	Controller-Pilot Data Link Communication
DM.....	Direct Mode
DU.....	Display Unit
EASA.....	European Aviation Safety Agency
ECL.....	Electronic Checklist
EFB.....	Electronic Flight Bag
EFIS.....	Electronic Flight Instrument System
EFVS.....	Enhanced Flight Vision System
EGPWS.....	Enhanced Ground Proximity Warning System
EICAS.....	Engine Indication and Crew Alert System
EVS.....	Enhanced Vision System
FANS.....	Future Air Navigation System
FBW.....	Fly By Wire
FD.....	Flight Director
FFS.....	Full Flight Simulator
FMS.....	Flight Management System
FPV.....	Flight Path Vector
FSI.....	FlightSafety International
FSTD.....	Flight Simulation Training Device
FT.....	Feet
FWD.....	Forward

GFS	Graphical Flight Simulator
GPWS.....	Ground Proximity Warning System
GS	Ground School
HALTO.....	High Altitude Landing and Takeoff
HLS.....	High-Level Sensor
HPA.....	High-Performance Aircraft
HUD	Head-Up Display
IAC	<i>Instrução de Aviação Civil</i>
ILC.....	Interim Level C
INSPAC.....	<i>Inspetor de Aviação Civil</i> (Flight Operations Inspector)
IS.....	<i>Instrução Suplementar</i>
LOST.....	Line Oriented Simulation Training
LSP	Left Seat Pilot
MDR	Master Differences Requirements
MEL.....	Minimum Equipment List
MKP	Multifunction Keyboard Panel
MLTE.....	<i>Habilitação de classe avião multimotor terrestre</i> (multi-engine land airplane class rating)
MMEL	Master Minimum Equipment List
NM.....	Normal Mode
ODR	Operator Differences Requirements
OEI	One Engine Inoperative
OPERA	Optimized Performance Analyser
OSD.....	Operational Suitability Data
OTD	Other Training Device
PF.....	Pilot Flying
PFD	Primary Flight Display
PIC	Pilot-in-Command
PLA.....	<i>Piloto de Linha Aérea</i> (Airline Transport Pilot)
PM	Pilot Monitoring
PNF	Pilot Non-Flying
POI.....	Principal Operations Inspector
PWS	Predictive Windshear
QRH	Quick reference Handbook
RAT	Ram Air Turbine
RBAC.....	<i>Regulamento Brasileiro de Aviação Civil</i>
RBHA	<i>Regulamento Brasileiro de Homologação Aeronáutica</i>
RNP-AR.....	Required Navigation Performance – Authorization Required
RSP.....	Right Seat Pilot

RVSM	Reduced Vertical Separation Minimum
SIT	Systems Integration Training
SOP	Standard Operating Procedure
SVGS	Synthetic Vision Guidance System
TASE.....	Training Areas of Special Emphasis
TAWS	Terrain Awareness and Warning System
TCAS	Traffic Alert and Collision Avoidance System
TCDS	Type Certification Data Sheet
TCS.....	Trim Control System
TOLD	Takeoff and Landing Distance
VGSI	Visual Glide Slope Indicator
VTRL.....	Ventral
VWx	Vertical Weather

1. INTRODUCTION

1.1. Background

The EMB-550 was evaluated in accordance with IAC 121-1009.

A joint operational evaluation campaign was conducted by the ANAC and the European Aviation Safety Agency – EASA.

The proposed initial type rating training for the EMB-550 was evaluated at the Flight Safety International – FSI training facilities at Saint Louis, MO - USA from October 15th until November 7th, 2014.

In order to assess the operational suitability of the EMB-550, some operational suitability flights were conducted in Brazil from November 17th until 28th, 2014.

In July 2015 the ANAC, EASA and FAA conducted a joint evaluation of the Low Visibility Operations to Category II (CAT II) and the autobrake system.

In September 2015 a new joint operation evaluation was conducted by ANAC, EASA and FAA to evaluate the EMB-545 (Legacy 450) operation and its commonality with model EMB-550 (Legacy 500), in order to determine the minimum levels for training, checking and currency.

In October 2015 the ANAC evaluated the training proposed by Embraer for the EMB-550 (Legacy 500) Thrust Reverser Heat Shield Installation and, in November 2015, the ANAC evaluated the training proposed by Embraer for the EMB-550 (Legacy 500) High Altitude Landing and Takeoff – HALTO operations. Both evaluations were conducted via documental analysis.

In December 2015, an ANAC-FAA-EASA joint operational evaluation took place in order to evaluate the Steep Approach Mode functionality. In addition, Embraer also asked ANAC to evaluate the Pro-Line Fusion Avionics Load 4.1 (DCA number 0550-031-00055-2014/ANAC Rev. C) and the new FMS database for takeoff and landing function (DCA number 0550-034-00059-2014/ANAC Rev. C).

In September 2016, another ANAC-FAA-EASA joint operational evaluation took place to evaluate four new functionalities:

- Windshear Detection and Escape Guidance System;
- EVS;
- HUD; and
- EFVS.

In September 2017 the ANAC evaluated the training proposed by Embraer for the Future Air Navigation System – FANS through documental analysis.

In May 2019, ANAC evaluated the EMB-550 (Praetor 600) airplane, a variant of the EMB-550 (Legacy 500) with additional fuselage fuel tanks and re-designed winglets, and the Pro Line Fusion Avionics 6.3.

In August 2019, ANAC evaluated the EMB-545 (Praetor 500) airplane, a variant of the EMB-545 (Legacy 450) with larger wing fuel tanks and re-designed winglets.

In November 2019, ANAC evaluated the ADS-B In functionality and the new weather radar RTA-4218 (with the Predictive Windshear – PWS and the Vertical Weather – VWx functionalities) on models EMB-550/545.

In December 2019 a joint operation evaluation was conducted by ANAC and FAA to evaluate the EMB-550/545 SVGS functionality, which is a means to conduct SA ILS CAT I operations, in order to determine the minimum levels for training, checking and currency.

In October 2022, a joint operation evaluation was conducted by ANAC, EASA and FAA to evaluate the EMB-550/545 RNP-AR capability in order to determine the minimum levels for training, checking and currency.

1.2. Objective

The objective of this report is to present the ANAC results from the operational evaluation campaign of Embraer models EMB-550/545.

The content of this report is applicable to operations under the framework of ANAC.

1.3. Purpose

The purpose of this report is to:

- Define the Pilot Type Rating assigned for models EMB-550/545;
- Define the requirements for training, checking and currency applicable to flight crew for models EMB-550/545, and functionalities;
- Present the compliance of models EMB-550/545 with the requirements of the RBAC 91 and RBAC 135; and
- Describe the required Flight Simulation Training Device (FSTD) for crew training, checking and currency.

1.4. Applicability

This report is applicable to:

- Brazilian operators of models EMB-550 and/or EMB-545 under RBAC 91 and RBAC 135 requirements;
- Approved Training Organizations certified under RBAC 142 (Training Centers);
- ANAC Safety Inspectors related to safety oversight of models EMB-550/545;
- ANAC Principal Operations Inspectors (POIs) of models EMB-550/545 operators.

1.5. Cancellation

This report cancels and replaces the following ANAC issued documents:

- Letter 033/2014/GAA/GCOI/SPO, dated 07 Nov. 2014;
- Letter 024/2015/GAA/GCOI/SPO, dated 07 Jul. 2015;
- Letter 015/2016/GAA/GCOI/SPO, dated 14 Jun. 2016; and
- Letter 017/2016/GAA/GCOI/SPO, dated 27 Jun. 2016.

2. SUMMARY AIRCRAFT DESCRIPTION

The Embraer models EMB-550 (Legacy 500, Praetor 600) and EMB-545 (Legacy 450, Praetor 500) are low wing, T-tail and pressurized airplanes, powered by two high by-pass ratio rear mounted turbofan engines. The tricycle landing gear is fully retractable, designed to be operated on paved runways only. The panel has the glass cockpit concept with the Collins Pro Line Fusion avionics system consisting of four Display Units (left, center, right and lower DU). The aircraft present the “dark and quiet” cockpit concept. The operation is based on the use of the FMS and it is featured with autopilot, flight director and auto-throttle.

The Fly-By-Wire (FBW) system provides closed-loop control and monitoring of all primary and secondary flight control surfaces within the system. The Normal Mode (NM) provides improved flying handling qualities and reduces crew workload throughout a wide range of speeds and aircraft configurations. In Direct Mode (DM) the airplanes behave like conventional aircraft and the side-stick and pedal deflections are directly related to the surface position (stick-to-surface).

The minimum crew is two pilots. The maximum number of passenger seats is twelve for the EMB-550 (Legacy 500 and Praetor 600) and nine for the EMB-545 (Legacy 450 and Praetor 500). These numbers may vary depending on the cabin configuration.

The aircraft are certified for Day, Night, VFR and IFR flights to a maximum operating altitude of 45.000 feet, and are approved for flight into reduced vertical separation minimum (RVSM) airspace if the given serial number meets the minimum equipment requirements contained in the Airplane Flight Manual, Supplement 3. The aircraft are also approved for flight into known icing conditions, extended over water, Category II, HALTO (takeoff, landing and ground start operations at high altitude airports up to 13800 ft) and steep approach operations.

The aircraft are certified in accordance with RBAC 25, listed on ANAC Type Certificate Data Sheet (TCDS) Number EA-2014T04 as the models EMB-550 and EMB-545. Embraer received their ANAC type certificate for model EMB-550 (Legacy 500) on 12 Aug. 2014 and for model EMB-545 (Legacy 450) on 11 Aug. 2015. In April 2019, the EMB-550 (Praetor 600) variant was certified (it is referred to as EMB-550MOD on the ANAC TCDS). Later in August 2019, the EMB 545 (Praetor 500) variant was certified (it is referred to as EMB-545MOD on the ANAC TCDS).

A summary of the aircraft specifications is presented in the table below. For more information, the TCDS issued by ANAC Product Certification Management (Gerência Geral de Certificação de Produto Aeronáutico – GGCP/SAR) may be consulted. In case of information disagreement between the table below and the TCDS, this last source shall prevail.

Table 1 – EMB-550/545 information

Specifications		EMB-550 (Legacy 500)	EMB-545 (Legacy 450)	EMB-550 (Praetor 600)	EMB-545 (Praetor 500)
Certification Basis		RBAC 25			
Engine		Two Honeywell AS907-3-1E			
Minimum Crew		Two pilots			
Maximum Passengers		Up to 12 seats	Up to 09 seats	Up to 12 seats	Up to 09 seats
Weights	Maximum Ramp Weight (MRW)	17.480 kg	16.060 kg	19500 kg	17.100 kg
	Maximum Takeoff Weight (MTOW)	17.400 kg	16.000 kg	19.440 kg	17.040 kg
	Maximum Landing Weight (MLW)	15.660 kg	14.750 kg	17.000 kg	15.500 kg
	Maximum Zero Fuel Weight (MZFW)	12.020 kg	11.750 kg	13.000 kg	11.775 kg
Speeds	Maximum Operating Mach (MMO)	0.83 Mach			
	Landing Gear Operation (VLO)	250 KIAS			
	Landing Gear Extended (VLE)	250 KIAS			

3. PILOT TYPE RATING

Models EMB-545/550 pilot type rating endorsement is “E550”.

Table 2 – ANAC IS 61-004 (type rating list) revision proposal

Fabricante (Manufacturer)	Aeronave (Aircraft)		Observações (Remarks)	Designativo (Designative)
	Modelo (Model)	Nome (Name)		
Embraer S.A.	EMB-545	Legacy 450, Praetor 500	Relatório de Avaliação Operacional EMB-550 (Legacy 500, Praetor 600), EMB-545 (Legacy 450, Praetor 500) <i>ANAC Operational Evaluation Report EMB-550 (Legacy 500, Praetor 600), EMB-545 (Legacy 450, Praetor 500)</i>	E550
	EMB-550	Legacy 500, Praetor 600		

4. MASTER DIFFERENCE REQUIREMENTS (MDR)

The Master Difference Requirements matrix for EMB-550 and EMB-545 is shown in table 3. These provisions are applied when there are differences between models which affect crew knowledge, skills, or abilities related to flight safety (e.g., Level A or greater differences) for training, checking and currency, respectively, according to IS 00-007.

Table 3 – EMB-550/ EMB-545 MDR matrix

		FROM AIRPLANE			
		EMB-550 (Legacy 500)	EMB-550 (Praetor 600)	EMB-545 (Legacy 450)	EMB-545 (Praetor 500)
TO AIRPLANE	EMB-550 (Legacy 500)	---	A/A/A	A/A/A	Not Evaluated
	EMB-550 (Praetor 600)	A/A/A	---	Not Evaluated	Not Evaluated
	EMB-545 (Legacy 450)	A/A/A	Not Evaluated	---	A/A/A
	EMB-545 (Praetor 500)	Not Evaluated	Not Evaluated	A/A/A	---

5. OPERATOR DIFFERENCES REQUIREMENTS (ODR)

Each operator of a mixed fleet of EMB-550 and EMB-545 shall produce its own ODR, as required by IS 00-007.

Embraer provided a sample of ODR tables, which was considered acceptable by ANAC. This sample ODR tables is presented in Appendix 3 of this report and may serve as a basis for the operator to develop its own ODR tables to address the differences indicated in the MDR.

Additional ODR tables are presented to cover installation of equipment or operational capabilities.

These ODR tables are Embraer generic and therefore may not include items that are applicable to particular operators.

6. SPECIFICATIONS FOR PILOT TRAINING

6.1. EMB-550/545 Initial Type Rating training

The initial pilot type rating course described in this section was evaluated by ANAC and considered to be compliant with the requirements of RBAC 61. This course is recommended to be used as a baseline for EMB-550/545 type rating training. The initial type rating training footprint is provided in Appendix 1.

6.1.1. Prerequisites

The candidate pilot must, at least:

- hold a Commercial Pilot License - Airplane;
- hold a Land Multiengine Class Rating (MLTE) or a type rating of a multiengine aircraft;
- hold an IFR rating;
- Had been approved in the theoretical exam of ANAC Airline Transport Pilot License (PLA), or had accumulated flight experience in high altitude airplanes or in jet planes; or hold a certificate of an ANAC approved high altitude training; and
- Have a minimum flight experience of 70 hours as Pilot in Command (PIC).

6.1.2. Theoretical knowledge

The theoretical knowledge curriculum is the same for pilot-in-command or second-in-command training. Successful completion of the theoretical training and approval in the written test are prerequisites for entering the flight training phase.

The theoretical training phase is comprised of:

- Classroom (instructor-led) instruction – 48:00 hrs.;
- Systems Integration Training (SIT) – 20:00 hrs.; and
- Written test.

The theoretical training should include:

- Classroom presentations of all aircraft systems including, for each system, limitations, normal, abnormal and emergency procedures;
- Classroom presentations on weight and balance, performance and flight planning;
- Adequate time during ground school phase to assimilate material through study; and
- System Integration, consisting of Graphical Flight Simulator (GFS) sessions.

It must not be assumed that pilots undertaking the EMB-550/545 type rating training have a working knowledge and understanding of systems such as FMS, EFIS selection and displays, Automated Flight Guidance and Control, TAWS, TCAS, etc. Pilots with limited or no experience with any or all the systems mentioned above should receive additional modular training, as appropriate, before entering the EMB-550/545 theoretical training phase.

It is recommended that SIT sessions are combined with the classroom instruction so pilots are introduced to a specific aircraft system theoretical knowledge and have the chance to get familiarized with it using the GFS at the same day.

For training efficiency, the following should be available:

- a consolidated Pilot Training Handbook containing all relevant documentation required for training and self-study (e.g. lesson plans for SIT and FFS sessions); and
- consolidated versions of both the Airplane Operations Manual (AOM) and Airplane Flight Manual (AFM).

6.1.3. Flight training

The flight training phase is based on the use of a qualified Full Flight Simulator and is comprised of:

- Full Flight Simulator (FFS) – 28:00 hrs. (14:00 hrs. per pilot as PF and 14:00 hrs. per pilot as PNF/PM), plus briefing and debriefing; and
- Proficiency check - 4:00 hrs. (2:00 hrs. per pilot as PF and 2:00 hrs. per pilot as PNF/PM).

A Line Oriented Simulation Training (LOST) must be conducted during the flight training in order to facilitate the transition from practicing specific maneuvers in the FFS sessions to integration off all applicable maneuvers into a simulated total flight.

LOST should include two segments, as follows:

- 1st segment – normal procedures from taxi after engine start at one airport, to arrival and parking at another one.
- 2nd segment – same profile as the 1st segment including some abnormal flight operations.

It is recommended that LOST is conducted with representative scenarios of the pilots operational environment, including typical kind of operation, airports, airspace, etc.

For training efficiency a Standard Operating Procedure (SOP) should be available.

6.1.4. Training Areas of Special Emphasis (TASE)

Special emphasis training includes systems or procedures training elements that are unique to the aircraft and should be given a higher degree of emphasis than regular training. The ANAC has identified the following training items that are unique to models EMB-550 and EMB-545:

- **Optimized Performance Analyzer software (OPERA), Weight and Balance and Performance Planning** – OPERA is the approved performance software per the Airplane Flight Manual (AFM). Weight and balance and performance data is widely dispersed in the paper AFM requiring emphasized instruction on the use of both OPERA and the paper AFM information including the location and application of tabs, charts, and graphs, in determining weight and balance and aircraft performance.
- **Electronic Display System/ Display Control Panel/ Cursor Control Devices operation and interaction** – Menus, displays, and navigation functions are controlled through the Electronic Display System, Display Control Panel and Cursor Control Devices. The various methods of accessing menus, selecting or configuring displays, inputting data, and graphical flight planning must be emphasized in training such that a crewmember is thoroughly familiar with their function and capabilities.

- **Flight Control System/ Flight Control Modes/ Control Laws** – Crewmembers must thoroughly understand the operation of the aircraft in each of the flight control modes, including all protections, side stick interactions and misbehavior and rudder behavior characteristics in case of engine failure. The purpose of the approach Trim Control System (TCS), trim control law and the proper use of the TCS button when the trim control law is active must be emphasized.
- **Emergency Descent Mode** – Models EMB-550/545 have the capability to automatically initiate an emergency descent in the event of a loss of cabin pressure above 25,000 feet. This functionality and its limitations shall be included in the initial type rating training.
- **Auto-Throttle System** – It is important to thoroughly understand the operation and limitations of the system in each phase of flight include single engine operation.
- **Control Panels** – Systems control panels using pushbuttons with integral light bars. Pilots should have an understanding of the switch position and system configuration as it relates to whether the light bar is illuminated or not, considering the “dark and quiet” cockpit philosophy. This understanding is required for both normal and abnormal system operation.
- **Instrument Approaches** – The Pro Line Fusion Avionics System enables a wide array of instrument approaches to be flown, using both conventional ground-based and space-based aids to navigation (with or without augmentation). Approaches may be based on different kinds of lateral and vertical guidance, each with its own characteristics, minimums and displays and selections. For a safe operation, thorough understanding of each type of approach, its limitations and correct selection is essential.
- **Flight Path Vector (FPV) cue** – For all modes, except takeoff, the flight guidance is presented in the FPV format (flight path vector cue and flight director cue). For takeoff, the guidance is presented using takeoff crossbars. With the FPV CAGE button on the Display Control panel, the FPV can be centered on the PFD if so desired (e.g. in strong crosswind conditions). However, crewmembers should be made aware of the different functionality, especially when flying raw data. In caged mode, the FPV cue and the runway threshold as presented on the SVS image are not interlinked the same way they are in un-caged mode.
- **Pro Line Fusion Avionics System** – The operational use of and functionality concerning controllers, synoptic pages, display softkeys, FMS functions, database currency requirements, synthetic vision, annunciations, flight planning, hazard avoidance systems, system failure modes and back up controllers.

6.2. Special Events training

Special events training to improve basic crew understanding and confidence regarding aircraft handling qualities, options and procedures as these relate to design characteristics and limitations may include the following:

- **Future Air Navigation Systems (FANS)** – general operational functions of Controller Pilot Data Link Communication (CPDLC) and Automatic Dependent Surveillance (ADS).
- **Upset recovery** – recovery from unusual attitudes.
- **Manual flight** – with minimum use of automation, including flight under degraded levels of automation.
- **High altitude flight** – high and low speed buffet margins and flight characteristics.

- **Wind shear** – situational awareness (recognition) and appropriate escape maneuvers.
- **CFIT/ TCAS/ TAWS** – emphasis on avoidance and escape maneuvers, altitude awareness, TCAS/ TAWS warnings, situational awareness and crew coordination.
- **Approach and landing using windshield heating** – the use of windshield heating may result in a blurred view. This scenario must be demonstrated during approach and landing phases.

6.3. Seat Dependent Tasks training

The ANAC found the following right seat dependent tasks for the EMB-550/545:

- Landing gear emergency extension (free-fall lever).
- Manual Ram Air Turbine (RAT) deployment.

6.4. Recurrent Training

No recurrent training was evaluated by the ANAC.

Recurrent training must be compliant with the Brazilian regulations. Recommendation is for the recurrent training to include the Training Areas of Special Emphasis as identified in this report.

Recurrent training should incorporate special events training as described in this report on a rotational basis.

6.5. Flight Management System (FMS) and Avionics Software version

EMB-550 and EMB-545 aircraft are equipped with Rockwell Collins Pro Line Fusion flight management system and several avionics software versions are available. Some of them were operationally evaluated by the ANAC and the results are presented below.

6.5.1. Pro Line Fusion Avionics Software Load 3.2

The Pro Line Fusion Avionics Software Load 3.2 implements some corrections and improvements. No significant operational impact was identified.

Familiarization with this software version is established as levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM and AOM as references.

6.5.2. Pro Line Fusion Avionics Software Load 4.1

The Pro Line Fusion Avionics Software Load 4.1 implements some corrections and improvements. In addition, new functionalities for the FMS Takeoff and Land Data – TOLD are provided.

Familiarization with this software version is established as levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM and AOM as references.

The Windshear Detection and Escape Guidance System is available from Pro-Line Fusion Avionics Load 4.1 and on, not requiring hardware modification. The ANAC recommends the following Training Areas of Special Emphasis for level A differences training:

- Difference between Windshear Caution and Windshear Warning;

- Transition to vertical and lateral modes after a Windshear Escape Manouver;
- Windshear Escape Guidance logic and associated techniques.

6.5.3. Pro Line Fusion Avionics Software Load 4.1.1

The Pro Line Fusion Avionics Software Load 4.1.1 implements some corrections and improvements. No significant operational impact was identified.

Familiarization with this software version is established as levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM and AOM as references.

6.5.4. Pro Line Fusion Avionics Software Load 6.3

The Pro Line Fusion Avionics Software Load 6.3 implements some corrections and improvements. No significant operational impact was identified.

Familiarization with this software version is established as levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM and AOM as references.

6.6. Low Visibility Operations

6.6.1. ILS Category II (CAT II)

Models EMB-550/545 are certified for Category II (CAT II) operations, provided the appropriate equipment and instruments are approved, installed and in an operable condition.

Air operators seeking operational approval must comply with the requirements specified in IAC 3208, dated 05 Nov. 1986, or replacing document.

The ANAC has identified levels D/D/D for training, checking and currency, respectively.

6.6.1.1. Training Areas of Special Emphasis (TASE)

In addition, the following training areas of special emphasis have been identified and are recommended to be covered by training for CAT II:

- The minimum equipment required for CAT II operation.
- System requirements and limitations.
- Autopilot Flight Director Guidance System Single Lane (APPR 1) and Dual Lane (APPR 2) configuration.
- APPR 2 capability requirements.
- APPR 2 operation, including failure recognition, handling and its consequences.
- Engine failure and One Engine Inoperative APPR 2 operations.

6.6.2. Special Authorization ILS Category I (SA CAT I)

Models EMB-550/545 are certified for Special Authorization ILS Category I (SA CAT I) operations, provided the appropriate equipment and instruments are approved, installed and in an operable condition.

Air operators seeking operational approval must comply with the requirements for training and checking specified in AC 120-118, dated 02 Jul. 2018, or replacing document.

The ANAC has identified levels D/D/A for training, checking and currency, respectively.

No training areas of special emphasis were identified.

Pilots should demonstrate proficiency in SA CAT I approaches. The following events may be accomplished individually or in any combination:

- A normal approach to a landing at SA CAT I minima;
- A normal approach to a go-around at SA CAT I minima;
- Approaches with related aircraft system, navigation system, or flight guidance failures;
- An engine-inoperative approach; and
- A go-around from an altitude below DA/DH.

6.7. Autobrake

The autobrake is an optional functionality on models EMB-550/545. The system is designed to provide automatic braking at a preselected rate without need of brake pedal application.

The ANAC has identified levels B/B/B for training, checking and currency, respectively.

The ANAC recommends the autobrake functionality training to be integrated into the initial type rating training, whenever possible.

6.8. EMB-550 (Legacy 500) Thrust Reverser Heat Shield Installation

For EMB-550 (Legacy 500) aircraft serial number not equipped with the Thrust Reverser Heat Shield (Service Bulletin SB 550-78-0001) the crew must perform the ENGINE SHUTDOWN procedure according to the AFM Supplement 6.

The ANAC has identified levels A/A/A for training, checking and currency, respectively, regarding the installation of the Thrust Reverser Heat Shield on model EMB-550.

The ANAC recommends the differences training to be incorporated into the initial type rating training, whenever possible.

6.9. High Altitude Landing and Takeoff (HALTO)

HALTO operations on models EMB-550/545 allow landing and takeoff operations up to 13.800ft. On model EMB-545 (Legacy 450) this is certified as a baseline optional feature. On model EMB-550 (Legacy 500) HALTO operations are enabled through application of Service Bulletins SB 550-27-0001 and SB 550-27-0002.

The ANAC has identified difference levels A/A/A for training, checking and currency, respectively, regarding the HALTO operations.

The ANAC recommends the differences training to be incorporated into the initial type rating training, whenever possible.

6.10. Steep Approach operation

An operation evaluation took place at the Embraer facility, in Gavião Peixoto, SP - Brazil, in December 2015 to evaluate operational suitability and to determine training, checking, and currency requirements for conducting steep approach landing operations in the Embraer EMB-550/545 aircraft. The ANAC evaluated the following steep approach operation training structure:

- A theoretical training, with 2:30 hours of class instruction and 30 minutes of flight briefing.
- A practical training performed in airplane composed of three approaches, which were followed by an AEO landing, a go-around and a simulated OEI landing, respectively.

The ANAC concluded that this training structure is acceptable for a pilot to become proficient in performing steep approaches.

The ANAC has identified difference levels D/A/A for training, checking and currency, respectively, regarding the Steep Approach Operation. The flight training shall be performed either in an airplane or in a FFS level D.

Steep approach landing is not allowed with CAT II Operation. For non-precision and visual approaches, a VGSI system is required.

Steep Approach operation on models EMB-550/545 may be performed with an approach glide path angle up to 5.5°.

As OPERA Software and TOLD function only provide performance information for steep approach landing with glide path angles of 5.5 degrees, pilots should be aware of how to calculate landing distance performance for flight path angles between 4.5 and 5.4 degrees.

6.11. Automatic Dependent Surveillance – Broadcast (ADS-B)

6.11.1. ADS-B Out

The ADS-B system complies with both the European Surveillance Performance and Interoperability Implementing Rule (SPI IR), and the FAA Final Rule for Automatic Dependent Surveillance – Broadcast (ADS-B) Out.

ADS-B Out system operation is completely automatic and transparent to flight crew. Once the active transponder unit is switched to any mode different of “STANDBY”, ADS-B system function will be transmitting the applicable parameters.

Familiarization with the ADS-B Out is established as levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM and AOM as references.

6.11.2. ADS-B In

ADS-B In system operation is completely automatic and transparent to flight crew. Once the active transponder unit is switched to any mode different of “STANDBY”, ADS-B system function will be receiving the applicable parameters.

Familiarization with ADS-B In is established as levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM, AOM and QRH as references.

6.12. EVS, HUD and EFVS

The EVS, HUD and EFVS are available on EMB-545/550 as optional equipment and can be installed separately.

6.12.1. EVS

The EVS system available for the EMB-545/550 is the model EVS-3000. It provides sensed image of the external environment in front of an airplane to the flight crew. The image can be displayed in any Multi-function Window (MFW) and it is a combination between images of infrared and visible spectrum during all phases of flight. The EVS-3000 will image the external environment with the ability to see through certain visual obscurants, such as haze, fog, snow and rain.

The EVS-3000 is only an aid to improve situation awareness for the airplane certified operations and EVS images of any ALS and/or runway environment do not constitute runway insight criteria. The PF should not display the EVS image on the PFD during approach, as this could be confusing and/or distracting.

Familiarization with the EVS-3000 system is established as levels A/A/A for training, checking and currency, respectively.

6.12.2. HUD

The HUD system is an electronic and optical system which generates and projects information in the pilot's field of view. The system displays flight and navigational data in a semi transparent crystal screen, overlaying the landscape in its field of view. It is only available for the LSP and should only be used when the LSP is the PF.

HUD is an aid to improve situational awareness for the airplane certified operation. No operational credit is allowed.

For the HUD installation, ANAC established difference levels D/A/A for training, checking and currency, respectively.

HUD training is for the left seat pilot only and must consist of a minimum of:

Ground Training

Classroom Training	2.0 Hours
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Flight Training

Flight Simulator Training	2.0 Hours
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TOTAL HOURS	4.0 Hours
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Note 1: Briefing and Debriefing expected duration is 1.0 hour (0.5 hour each).

Flight training must be executed in a level C or D FFS or in the airplane.

The following items should be considered as Training Areas of Special Emphasis:

- Ingress and egress of pilot seat;
- Adjustment of brightness/contrast;
- HUD set up;
- Declutter mode – speed/altitude information displayed on HUD;
- Flaps 3 approach: VASI and PAPI will be displayed on the lower portion of the HUD;
- HUD Symbology:
 - Differences from PFD;
 - Some FMA modes may be named slightly differently (with V in front) since HUD is monochromatic;
- Failure modes;
- Initial risk of “fixation” on the HUD during the flare phase (transition);
- Windshear Caution and Windshear Warning difference when HUD is used;
- Unusual attitude mode: difference between dashed and continuous lines for pitch angle indication;
- HUD storage;

6.12.3. EFVS

The Enhanced Flight Vision System (EFVS) is a combination between Enhanced Vision System (EVS) and Head-Up Display (HUD). The EFVS displays an image combination between infrared and visible images of the airplane's forward environment on the Head-Up display. The system is designed to improve perception of the environment on low visibility conditions.

The system is composed of the EVS and the HUD components described above. The main difference is that for EFVS there is an optical fiber cable that connects the EVS with the HUD enabling the capability of EVS image to be displayed on the HUD.

For the EFVS installation, ANAC established difference levels D/D/A for training, checking and currency, respectively.

For the EFVS initial training, the LSP must be already proficient in the use of HUD. LSP will always act as PF when using EFVS.

The EMB-550/545 EFVS initial training program is divided into two major segments:

Ground Training

Classroom Training	4.0 Hours
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Flight Training

Flight Simulator Training (LSP)	2.0 hours PF
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Flight Simulator Training (RSP)	2.0 hours PM
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TOTAL HOURS

	8.0 Hours
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Note 1: The durations above are considered the minimums under the assumption that all the training elements have been properly addressed. Such durations may be extended as per pilot's performance or other reasons deemed necessary to ensure efficient training.

Note 2: Pilot previously trained as LSP and RSP must undergo complete EFVS flight training as PF/LSP (2.0 hours) and PM/RSP (2.0 hours). He/she can act as either LSP/PF or RSP/PM.

Note 3: Pilot not previously trained as LSP must undergo EFVS flight training as PM/RSP (2.0 hours) and can act only as RSP/PM. The total training will be of 6.0 hours.

Note 4: Briefing and Debriefing expected duration is 1.0 hour (0.5 hour each).

Flight training must be executed in a level C or D FFS or in the airplane.

The following items should be considered as Training Areas of Special Emphasis:

- EFVS Call-outs;
- EVS button operation (since the EVS image can cover pilot's exterior visual sight);
- Ingress and egress of pilot seat;
- Adjustment of brightness/contrast;
- HUD set up;
- Declutter mode – speed/altitude information on HUD;
- Failure modes;
- At least one departure and one approach should be performed on mountainous terrain.

Besides the training areas of special emphasis described above, the ANAC recommends pilots to consider the following items for EFVS operations:

- Pilots should use landing/taxi lights off until visual references are established with the runway;
- Since HUD images are monochromatic, pilots should disregard VASI and PAPI when exterior image is displayed on HUD;
- Attention with the use of the Before Landing Checklist since some of the items are to be checked only at DA/DH;
- Polarized sunglasses should only be used with HUD as EVS image on HUD may be difficult to see.

ANAC has operated the EFVS in the flight simulator according to the ILS CAT I AR airport charts. The EFVS has shown to be suitable for this kind of operations.

Although the Legacy 500/450 EFVS can be used for ILS CAT I AR and Low Visibility Take-Off operations according to the IS 91-003A, this report does not approve nor give any authorization for operators seeking to comply with it. Instead, operators must request ANAC approval for ILS CAT I AR and/or Low Visibility Take-Off operations according to the IS 91-003A or replacing document. Additional operational and/or training requirements may apply.

In order to optimize the flight training when using the flight simulator, ANAC recommends some of the approaches to be executed after airplane repositioning at final approach segment around

1500 ft above runway. Doing so, more approaches can be trained using the EFVS during the flight simulator session.

6.13. Future Air Navigation System – FANS

The FANS is a data link technology and encompass two functions: Controller Pilot Data Link Communication (CPDLC) and Automatic Dependent Surveillance Contract (ADS-C).

Familiarization with the FANS is established as differences levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM, AOM, QRH and SOP as references.

6.14. Operational Evaluation Embraer 550 (Praetor 600)

The Praetor 600 is a commercial designation for the Embraer 550 with extended range, through the installation of additional fuel tanks.

An operational evaluation for the Embraer 550 (Praetor 600) with reference to the Embraer 550 (Legacy 500) was conducted through analysis in May 2019, in accordance with IS 00-007A and based on a proposal by the applicant.

The operational evaluation included the evaluation of MDR and ODR tables.

Familiarization training between the Embraer 550 (Legacy 500) and the Embraer 550 (Praetor 600) is established as differences levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of AFM, AOM, QRH and SOP as references.

6.15. Operational Evaluation Embraer 545 (Praetor 500)

The Praetor 500 is a commercial designation for the Embraer 545 with extended range.

An operational evaluation for the Embraer 545 (Praetor 500) with reference to the Embraer 545 (Legacy 450) was conducted through analysis in August 2019, in accordance with IS 00-007A and based on a proposal by the applicant.

The operational evaluation included the evaluation of MDR and ODR tables.

Familiarization training between the Embraer 545 (Legacy 450) and the Embraer 545 (Praetor 500) is established as differences levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of AFM, AOM, QRH and SOP as references.

6.16. Weather Radar RTA-4218

The Weather Radar RTA-4218 introduces the Predictive Windshear (PWS) and the Vertical Weather (VWx) functionalities on both EMB-545 and EMB-550 aircraft models.

The PWS function allows detection and alerting of windshear conditions ahead of the airplane, usually before the reactive windshear detection is able to detect it. The VWx function increases situational awareness by providing a vertical profile view of the weather ahead of the airplane on the Vertical Situation Display (VSD).

Familiarization with the Weather Radar RTA-4218 functionalities PWS and VWx is established as levels A/A/A for training, checking and currency, respectively. The ANAC recommends the use of the AFM, AOM and QRH as references.

6.17. Required Navigation Performance – Authorization Required (RNP-AR)

A joint operational evaluation board composed by ANAC, EASA and FAA conducted an evaluation of the EMB-545/550 RNP-AR operation using the IRS as the primary GNSS backup. ANAC evaluation was performed using the IS 00-007 guidance. The ANAC IS 91-001 was used as reference for training and operations evaluation purposes.

The EMB-545/550 aircraft are capable to perform RNP-AR approaches requiring RNP not less than 0.3 including RF (radius to fix) legs with missed approaches requiring RNP not less than 1.0.

For the RNP-AR operations, ANAC established difference levels D/D/D for training, checking and currency, respectively.

The EMB-550/545 RNP-AR training program is divided into two major segments, as follows:

Ground Training

Classroom Training	3.0 Hours
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Flight Training

Maneuver device	3.0 hours (1.5 PF / 1.5 PM)
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TOTAL HOURS	6.0 Hours
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Note 1: The durations above are recommended minimums under the assumption that all the training elements have been properly addressed. Such durations may be extended as per pilot's performance or other reasons deemed necessary to ensure efficient training, such as basic RNP-AR knowledge.

Note 2: The durations above do not include briefing and debriefing times.

Ground and flight training shall include all elements presented in the specific RNP-AR ODR table in the Appendix 3.

Flight training requires either an EMB-545 or EMB-550 full flight simulator (FFS) level C or D, or an EMB-545 or EMB-550 aircraft which is RNP AR-capable and airworthy, with an instructor qualified to conduct RNP AR training.

The following items should be considered as Training Areas of Special Emphasis:

- Use of LNAV, VNAV and APP pushbuttons;
- Use of altitude selector to ensure proper engagement of PATH and GP modes;
- Management of GA versus “discontinued approach” or “contingency procedures”; and
- Awareness of the flight deck effects of changing the AP source during the approach.

Pilots must be checked for the RNP-AR according to the ANAC IS 91-001 provisions.

ANAC recommends the execution of at least one RNP-AR APCH within a ninety days period for currency purposes.

Although the EMB-545/550 aircraft are eligible to perform RNP-AR operations according to the IS 91-001, this report does not approve nor give any authorization for operators seeking to comply with it. Instead, operators must request ANAC approval for RNP-AR operations according to the IS 91-001 or replacing document. Additional operational and/or training requirements may apply.

7. SPECIFICATIONS FOR CHECKING

Initial and recurrent proficiency checks shall be performed in accordance with RBAC 61 and IS 00-002.

Full credit is granted for recurrent checking requirements when operating both EMB-550 and EMB-545 models.

In addition, ANAC strongly recommends the use of ANAC High Performance Airplane Checkride Profile in the conduct of the proficiency check flights.

The ANAC High Performance Airplane Checkride Profile is available at ANAC website, through the link <http://www.anac.gov.br/assuntos/setor-regulado/profissionais-da-aviacao-civil/avaliacao-operacional>.

8. SPECIFICATIONS FOR RECENT EXPERIENCE AND CURRENCY

No specific requirements for recent experience or currency are established for models EMB-550/545 other than those already specified in RBAC 61 and RBAC 135.

9. FLIGHT SIMULATION TRAINING DEVICES (FSTD) AND OTHER TRAINING DEVICES (OTD)

The devices used for the initial and recurrent training must replicate the EMB-550 in function and fidelity to the degree determined by the level of device. Until the issuance of this report, no EMB-545 device was available.

The Full Flight Simulator – FFS used for the flight training, checking and currency must be qualified as level C or D according to the technical requirements established by the ANAC.

The Graphical Flight Simulator – GFS used for the theoretical training does not need to be qualified by ANAC.

The FSTD and OTD must be approved for training by the ANAC.

10. COMPLIANCE WITH RBHA 91 AND RBAC 135

Embraer has submitted a compliance checklist with the operational requirements of RBHA 91 and RBAC 135 for models EMB-550/545. Please see Appendix 2 of this report for detailed information.

11. TECHNICAL PUBLICATIONS

11.1. Master Minimum Equipment List - MMEL

EMB-550/545 MMEL approved by ANAC shall be used by Brazilian operators of the model as a basis for developing their MEL. This document is available at ANAC website, through the link <https://www.gov.br/anac/pt-br/centrais-de-conteudo/biblioteca/master-minimum-equipment-lists>.

11.2. Airplane Flight Manual - AFM

Brazilian operators shall use the Airplane Flight Manuals – AFMs approved by ANAC for models EMB-550 and EMB-545 as a basis for developing their Airplane Operation Manuals – AOMs.

The checklist wording philosophy for the normal, abnormal and emergency procedures presents challenges referring to the position of the levers (I.e., “LDG GEAR Lever.....DN”). However, crew should focus on the actual position of the equipment/ surface in order to confirm that the actions that have been performed did obtain the proper result.

This checklist wording philosophy is reflected both in the AOMs and in the QRHs.

12. MISCELLANEOUS

12.1. Forward Observer Seat

No forward observer seat was evaluated by the ANAC for operational suitability.

To demonstrate compliance with the requirement of RBAC 135.75(b) a proposal must be submitted by the air operator, which will be evaluated by ANAC RBAC 135 operations certification office.

12.2. Aircraft Approach Category

Models EMB-550/545 are classified as “Category B” for normal straight-in landing approaches and normal circling approaches.

12.3. Electronic Checklist (ECL)

The ECL was evaluated and determined to be operationally suitable. However, a printed copy available in the cockpit is required due to some abnormal and emergency checklists.

12.4. Electronic Flight Bags (EFB)

Models EMB-550/545 have two EFB capable of displaying worldwide aeronautical charts in full color with high resolution, with quick change between pre-selected charts and zoom features.

Data available includes Standard Terminal Arrivals, Departure Procedures, Instrument Approach Procedure and Airport Diagrams charts.

APPENDIX 1

EMB-550/545 TYPE RATING TRAINING FOOTPRINT

Day 1	Day 2	Day 3	Day 4	Day 5
GS 1 (8:00 hrs.)	GS 2 (8:00 hrs.)	GS 3 (8:00 hrs.)	GS 4 (8:00 hrs.)	GS 5 (8:00 hrs.)
Day 6	Day 7	Day 8	Day 9	Day 10
GS 6 (8:00 hrs.)	SIT 1 (4:00 hrs.)	SIT 2 (4:00 hrs.)	SIT 3 (4:00 hrs.)	SIT 4 (4:00 hrs.)
Day 11	Day 12	Day 13	Day 14	Day 15
SIT 5 (4:00 hrs.) Written test	FFS 1 (4:00 hrs.)	FFS 2 (4:00 hrs.)	FFS 3 (4:00 hrs.)	FFS 4 (4:00 hrs.)
Day 16	Day 17	Day 18	Day 19	
FFS 5 (4:00 hrs.)	FFS 6 (4:00 hrs.)	FFS 7 (4:00 hrs.)	FFS XQ (Proficiency check)	
Legend:				
GS – Ground School (instructor-led class) SIT – Systems Integration Training (using a Graphical Flight Simulator – GFS) FFS – Full Flight Simulator level C or D				
Notes:				
1- SIT and FFS sessions DO NOT INCLUDE time for briefing and debriefing. 2- FFS session 7 must be used for LOST training.				

The training outlined above reflects the training evaluated by ANAC and considered acceptable for EMB-550/545 type rating training aiming an ANAC license endorsement. An operator or an ATO may develop a variation of this training provided it is proven that it maintains an equivalent level of safety. Depending on the level of the modification, ANAC may judge necessary an operational evaluation of the proposed training.

APPENDIX 2

EMB-550/545 (LEGACY 500/450, PRAETOR 600/500)

COMPLIANCE CHECKLIST WITH RBHA 91 AND RBAC 135

RBHA 91 (up to amendment 91-12, issued on December 30th, 2005).

RBHA	Title	Compliance	Remark	ANAC Finding
91.5 (b)	Composição de tripulação para operação IFR	Compliant	The aeroplane is approved for IFR operations. It is an operator's responsibility to conduct the operation according to the procedures of the approved AFM.	Complies
91.9 (a)	Cumprimento com manual de voo, marcas e letreiros	Operator's responsibility	-	Agree - Operator Responsibility
91.9 (b)(1)	Disponibilidade de um manual de voo aprovado e atualizado	Compliant	The aeroplane is provided with an AFM.	Complies
91.9 (c)	Identificação da aeronave de acordo com o RBHA 45	Optionally Compliant	Embraer, optionally, under operator's request, may identify the aeroplane according to RBAC 45.	Agree
91.103 (a)	Informações disponíveis do plano de voo IFR, condições meteorológicas, combustível e tráfego aéreo	Operator's responsibility	-	Agree - Operator Responsibility
91.103 (b)(1)	Dados de desempenho para as pistas de pouso e decolagem dos aeródromos a serem utilizados	Compliant	Embraer provides the required performance information in Airplane Flight Manual, Airplane Operations Manual and Approved Performance Software (OPERA).	Complies
91.189	Operações Categoria II e Categoria III	Optionally Compliant	The aeroplane may, optionally, under operator's request, be configured for CAT II Operations. The aeroplane is not certified to perform CAT III Operations.	Agree

RBHA	Title	Compliance	Remark	ANAC Finding
91.191	Manual de Categoria II e Categoria III	Compliant	The information regarding the CAT II Operation is provided by Embraer on AFM, AOM and QRH. By receiving the operational manuals from Embraer, the operator can not perform a CAT II Operation unless its crew is properly trained and its aeroplane is configured for CAT II Operations. The aeroplane is not certified to perform CAT III Operations.	Agree
91.203 (a)(b)(c)(d)(e)	Documentos requeridos a bordo	Operator's responsibility	-	Agree Operator Responsibility -
91.203 (f)	Tanque de combustível instalado dentro do compartimento de passageiros ou no compartimento de bagagem	Operator's responsibility	-	Agree Operator Responsibility -
91.203 (g)	ventilação do combustível e exaustão dos gases emitidos estabelecidos pelo RBHA 34	Compliant	The engine is certified under RBAC 34, as stated in the TCDS.	Complies
91.205 (a)	Requisitos de instrumentos e equipamentos. Aeronave civil motorizada e com certificado de aeronavegabilidade válido: Geral	Operator's responsibility	-	Agree Operator Responsibility -
91.205 (b)	Voos VFR diurnos	Compliant	The aeroplane is equipped with all required equipment/instruments for VFR flight during the day.	Agree Optional magnetic compass and standard standby instrument system was installed on conforming aircraft. -

RBHA	Title	Compliance	Remark	ANAC Finding
91.205 (c)	Voo VFR noturno	Optionally Compliant	<p>The aeroplane in its baseline is equipped with two VOR and a single DME radio navigation systems. It may, optionally, under operator's request, be equipped with a second DME, and single or dual ADF radio-navigation systems.</p> <p>The aeroplane is equipped with all other required equipment/instruments.</p>	Agree
91.205 (d)	Voos IFR	Optionally Compliant	<p>The aeroplane in its basic communication system configuration is equipped with two VHF systems for short-range communications, and may, optionally, under operator's request, be equipped with a third VHF that supports ACARS and CPDLC datalink communication. For long-range communication Embraer may, optionally, under operator's request, install a single or dual HF system(s) and a SATCOM system. It is equipped at each crew station with one headset with boom microphone, one handheld microphone and one microphone in the oxygen mask. The aeroplane is also equipped with one speaker above each crew station. The baseline navigation configuration consists of two FMS-GPS long-range navigation systems, and two VOR/ILS/MB and one DME radio navigation systems for short-range navigation. The aeroplane may, optionally, under operator's request, be equipped with a second DME, and single or dual ADF radio-navigation systems.</p> <p>The aeroplane is equipped with all other required equipment/instruments.</p>	Agree
91.205 (e)	Voos em ou acima do nível de voo FL 240	Compliant	<p>The aeroplane in its baseline is equipped with two VOR and a single DME radio navigation systems and two FMS-GPS systems with RNP 0.3. A second DME may, optionally, be installed under operator's request.</p>	Complies
91.205 (f)	Operações Categoria II	Optionally Compliant	<p>The aeroplane may, optionally, under operator's request, be configured for CAT II Operations.</p>	Agree

RBHA	Title	Compliance	Remark	ANAC Finding
91.205 (g)	Operações Categoria III	Not Compliant	The aeroplane is not certified to perform CAT III Operations.	Not applicable
91.207 (a)(b) (h)(i)	Transmissores localizadores de emergência (ELT)	Compliant	The aeroplane in its basic configuration is equipped with an automatic fixed ELT that operates on the frequencies 121,5 MHz, 243 MHz and 406 MHz, which meets the requirements of TSO-C91a and TSO-C126. The fixed and automatic ELT is attached in the aft section of the aeroplane.	Complies
91.207 (c)	Baterias usadas nos transmissores localizadores de emergência (ELT)	Compliant	The ELT battery is inspected and assembled according to manufacturer's Installation Procedure and recorded at EWCL (Equipment With Controlled Life), Which is available to customers. However, it is an operator's responsibility to maintain it in operative condition.	Complies
91.207 (d)	Manutenção transmissores localizadores de emergência (ELT)	Operator's responsibility	-	Agree Operator Responsibility
91.209 (b)	Operar uma aeronave equipada com um sistema de luzes anti-colisão aprovadas	Operator's responsibility	-	Agree Operator Responsibility
91.211 (a)	Oxigênio Suplementar: Geral	Compliant	The aeroplane in its basic configuration is equipped with a 77 cu.ft oxygen cylinder that provides at least two-hour supplemental oxygen to flight crew members at cabin pressure altitudes above 10,000ft ("Cabin High Altitude" warning CAS message), and at least 30 minutes supplemental oxygen to each passenger at cabin pressure altitudes above 15,000ft (oxygen masks automatic deployment at 14,500ft +/- 300ft). Optionally, under operator's request, a 115 cu.ft oxygen cylinder may be installed instead of the 77 cu.ft oxygen cylinder. It is an operator's responsibility to check if the supplemental oxygen is enough to the number of occupants and the route to be flown.	Complies

RBHA	Title	Compliance	Remark	ANAC Finding
91.211 (b)	Aeronaves com cabine pressurizada	Compliant	<p>The aeroplane in its basic configuration is equipped with a 77 cu.ft oxygen cylinder that provides at least two-hour supplemental oxygen to flight crew members at cabin pressure altitudes above 10,000ft ("Cabin High Altitude" warning CAS message), and at least 30 minutes supplemental oxygen to each passenger at cabin pressure altitudes above 15,000ft (oxygen masks automatic deployment at 14,500ft +/- 300ft). Optionally, under operator's request, a 115 cu.ft oxygen cylinder may be installed instead of the 77 cu.ft oxygen cylinder.</p> <p>It is an operator's responsibility to check if the supplemental oxygen is enough to the number of occupants and the route to be flown.</p> <p>The crew oxygen system comprises a quick-donning pressure demand oxygen mask with auto-dilution mode that provides supplemental and protective oxygen.</p> <p>The crew mask is approved according to TSO-C78a and TSO-C89a and can be placed on the face with one hand from the ready position within 5 seconds. It is an operator's responsibility to use the mask accordingly.</p>	Complies
91.213	Equipamentos instrumentos inoperantes	e Compliant	<p>The MMEL is provided to the operator at the aeroplane delivery. It is operator's responsibility to develop and approve his own MEL.</p> <p>The instruments listed in paragraph (b) are not included in the MMEL.</p>	Complies, MMEL Rev. Original issued on 13 Oct 2014.
91.215 (a)	Equipamento transponder ATC e transmissor automático de altitude. Equipamentos e utilização	Compliant	<p>The Traffic Surveillance System for the aeroplane in its baseline consists of a TCAS with an Integrated Transponder Unit and a stand-alone transponder unit. Both are approved according to TSO-C112. During normal operation the use of the integrated or the stand alone transponder is done at pilot discretion but during an electrical emergency just the stand-alone can be utilized.</p>	Complies

RBHA	Title	Compliance	Remark	ANAC Finding
91.215 (b),(c) (d)	Operação do transponder	Compliant	The TCAS integrated transponder is Class 2A1 121 011 while the stand-alone is a Class 3A2 121 011. Both are Mode-S transponders which respond Air Traffic Control Radar Beacon System (ATCRBS) standard Mode A and C interrogations as well as to Mode S selective interrogations, with the applicable provisions specified in TSO-C112.	Complies
91.217 (a)	Transmissor automático de altitude: desativação do sistema	Operator's responsibility	-	Agree Operator Responsibility -
91.217 (b)	Teste e calibração	Compliant	The transponder equipment is designed and tested to give a maximum error of 125 feet within all aeroplane altitude envelope.	Complies
91.217 (c)	Altímetros e conversores analógico-digitais	Compliant	The aeroplane is not equipped with altimeters and digitizers that meet the standards TSO-C10b and TSO-C88, respectively. However, it is equipped with TSO-C106 Air Data System.	Complies
91.219 (a)	Dispositivo ou sistema de alarme de altitude aprovado	Compliant	The aeroplane in its baseline configuration is equipped with an altitude alerting system. It is an operator's responsibility to maintain it in operable conditions.	Complies
91.219 (b)	Dispositivo ou sistema de alarme de altitude	Compliant	Altitude alerting system of the aeroplane is available for all operating altitude approved. Both aural and visual signals are used to alert the pilot when approaching a preselected altitude, in either ascend or descend, in sufficient time to establish level flight at that altitude. Both aural and visual signals are used to alert the pilot when deviating above and below the preselected altitude, in either ascend or descend, in sufficient time to establish level flight at that altitude.	Complies

RBHA	Title	Compliance	Remark	ANAC Finding
91.221 (a)(b)	Sistema embarcado de prevenção de colisões. Equipamento e utilização	Compliant	The aeroplane is equipped with TCAS II 7.1 which meets the requirements of TSO-C119c.	Complies
91.221 (c)	Operação de um sistema ACAS II ligado em espaço aéreo RVSM	Compliant	The aeroplane is equipped with TCAS II 7.1 which meets the requirements of TSO-C119c.	Complies
91.221 (d)	Aeronaves categoria transporte com configuração para passageiros com mais de 30 assentos	Not Applicable	Applicable only to transport category aeroplanes with a passenger seating configuration higher than 30 seats.	Not Applicable
91.221 (e)	Aeronaves categoria transporte com configuração para passageiros com mais de 19 assentos	Not Applicable	Applicable only to transport category aeroplanes with a passenger seating configuration higher than 19 seats.	Not Applicable
91.223 (a)	sistema aprovado de percepção e alarme de proximidade do solo	Compliant	The aeroplane in its baseline configurations is equipped with a Class A TAWS that meets the TSO-C151b requirements. Class A TAWS surpasses Class B TAWS in all of its requirements.	Complies
91.223 (b)(e)	sistema aprovado de percepção e alarme de proximidade do solo	Not Applicable	Applicable only to aeroplanes manufactured on or before 01 JAN 2004.	Not Applicable
91.223 (c)	Sistema aprovado de percepção e alarme de proximidade do solo - Manual de voo	Compliant	The AFM is provided to the operator and contains appropriated procedures for the use of the TAWS and guidance on proper crew reaction in response to terrain awareness and warning system audio and visual warnings. The AOM also provides detailed information on the operation of TAWS.	Complies
91.223 (d)	Sistema aprovado de percepção e alarme de proximidade do solo - Exceções	Operator's responsibility	-	Agree Operator Responsibility -

RBHA	Title	Compliance	Remark	ANAC Finding
91.225	Equipamentos eletrônicos que transmitem sinais de rádio devem atender às normas do DECEA	Compliant	ELTs, Transponders, and Navigation and Communication Systems installed in the aeroplane are compliant with the minimum specifications defined by DECEA.	Complies
91.409	Inspeções	Operator's responsibility	-	Agree Operator Responsibility -
91.411	Testes e inspeções em sistema de altímetro e equipamento automático de informação de altitude	Compliant	<p>The aeroplane Air Data System components comply with the performance requirements defined in TSO-C16A, TSO-C106, and TSO-C54.</p> <p>Air Data System is tested on production process at an altitude of 45,000 feet.</p> <p>The anemometric system is tested on production process.</p> <p>Air Data System and the ATC transponder are tested on production process.</p> <p>The date of test is informed to the operator through EWCL (equipment With Controlled Life).</p> <p>Following tests and inspections are operator's responsibility.</p>	Complies
91.413	Testes e inspeções do transponder	Compliant	ATC Transponder system is tested on production process. Following tests and inspections are operator's responsibility.	Complies
91.503 (a)(1)	Equipamentos de voo e informações operacionais: lanternas	Compliant	The aeroplane in its baseline is equipped with a flashlight for each flight crewmember easily accessible at his/her station having at least two size "D" cells, or the equivalent.	Complies
91.503 (a)(2)	Lista de verificações da cabine dos pilotos	Compliant	Embraer provides AFM, AOM and QRH containing the Normal and Emergency Procedures.	Complies
91.503 (a)(3) (a)(4)	Cartas aeronáuticas	Operator's responsibility	-	Agree Operator Responsibility -

RBHA	Title	Compliance	Remark	ANAC Finding
91.503 (a)(5)	Dados de desempenho para subidas com um motor inoperante	Compliant	Embraer provides the AFM and AOM containing all required certificated performance data. Embraer also provides an Airplane Performance Software (OPERA) that contains all approved AFM performance data in order to help the operator in determining the required performance.	Complies
91.503 (a)(6)	Manual de voo do avião	Compliant	The aeroplane is provided with operational manuals that include AFM.	Complies
91.503 (b)(c)	Conteúdo das listas de verificação	Compliant	Subparagraphs (b)(1) up to (6) are included in the Normal Procedures contained in the AFM and AOM. Subparagraph (7) is described in the Emergency Procedures included in both manuals and also available in the QRH. All required subparagraphs of paragraph (c) are included in the Emergency Procedures presented in the AFM, AOM and QRH.	Complies
91.503 (d)	Uso das informações pelos tripulantes	Operator's responsibility	-	Agree - Operator Responsibility
91.505	Familiaridade com as limitações operacionais e com os equipamentos de emergência	Operator's responsibility	-	Agree - Operator Responsibility
91.507	Requisitos de equipamentos. Operações noturnas de VFR	Operator's responsibility	See paragraph §91.205(d) for detailed description of the required instruments and equipment. Landing light is also required in this paragraph (See paragraph §91.205(c)(4) for detailed description). It is an operator's responsibility to maintain each required instrument and item of equipment in operable condition.	Agree - Operator Responsibility

RBHA	Title	Compliance	Remark	ANAC Finding
91.509 (a)	Equipamentos de sobrevivência para operações sobre a água (colete salva-vidas ou outro meio de flutuação aprovado)	Compliant	The aeroplane is equipped with an easily accessible life jacket for each occupant having an approved survivor locator light.	Complies
91.509 (b)	Equipamentos de sobrevivência para operações sobre a água (operação estendida sobre a água)	Optionally Compliant	<p>The aeroplane on its baseline is provided with an easily accessible life jacket for each occupant, equipped with an approved survivor locator light.</p> <p>The aeroplane may, optionally, under operator's request, be equipped with a single life raft to accommodate the required number of occupants under its rated buoyance capacity, equipped with an approved survival locator light.</p> <p>The optional liferaft is equipped with a survival kit that contains a pyrotechnic signaling device.</p> <p>The optional liferaft is equipped with an attached water-resistant, portable emergency radio signaling device that is capable of transmission on the appropriate emergency frequency or frequencies and not dependent upon the aeroplane power supply.</p> <p>The aeroplane may optionally, under operator's request, be equipped with a lifeline installed in a proper compartment at the overwing emergency exit according to the requirements of paragraph 25.1411(g).</p>	Agree
91.509 (c)(d)	Equipamentos de sobrevivência para operações sobre a água (operação estendida sobre a água)	Optionally Compliant	<p>When provided in the aeroplane, the optional liferaft is equipped with a survival kit.</p> <p>The aeroplane is equipped with life preservers which are easily accessible and the locations are conspicuously marked. When provided in the aeroplane, the optional liferaft is installed in the aft internal luggage compartment and it is conspicuously marked. The pyrotechnic signaling device is inside the survival kit of the liferaft.</p>	Agree

RBHA	Title	Compliance	Remark	ANAC Finding
91.511	Equipamento rádio para operações sobre água	Optionally Compliant	<p>The aeroplane in its basic configuration is equipped with two independent VHF communication systems. It may, optionally, under operator's request, be provided with single or dual independent HF systems as well as a third VHF.</p> <p>The aeroplane in its basic configuration is equipped at each crew station with one headset with boom microphone, one handheld microphone and one microphone in the oxygen mask.</p> <p>The aeroplane in its basic configuration is equipped with dual FMS and dual GPS long-range navigation systems.</p>	Agree
91.513	Equipamento de emergência	Compliant	<p>All emergency equipment installed in the aeroplane is easily accessible to the crewmembers.</p> <p>Each emergency equipment is clearly marked with its method of operation.</p> <p>The emergency equipment compartments are properly marked. The equipments are labeled with the contents. It is the operator's responsibility to perform the inspection and register the date of last inspection, and expiration date.</p> <p>The type and quantity of extinguishing agent are suitable for the kinds of fires likely to occur in such compartment.</p> <p>One hand fire extinguisher is located in the cockpit and readily accessible to the flight crew.</p> <p>One hand fire extinguisher is conveniently located in the service area in the passenger compartment.</p> <p>The aeroplane in its baseline is equipped with one first aid kit for treatment of injuries likely to occur in flight or in minor accidents.</p>	Complies
91.517	Informações aos passageiros	Compliant	<p>The aeroplane is equipped with "Fasten Seat Belt" and "No Smoking" signals at visible location to all occupants. The signals are turned on and off by flight crewmembers in the cockpit.</p>	Complies

RBHA	Title	Compliance	Remark	ANAC Finding
91.519	Instruções verbais aos passageiros	Compliant	The aeroplane is provided with printed cards available for each passenger containing a diagram and methods of operating the emergency exits and any other instructions necessary for use of emergency equipment. The aeroplane is equipped with the pilot announcement system which allows the pilot to communicate with passengers.	Complies
91.521	Cintos de ombro	Compliant	Each seat at a flight deck station with a combined safety belt and shoulder harness meets the applicable requirements specified in §25.785.	Complies
91.525	Transporte de carga	Compliant	The aeroplane has an in-flight accessible stowage compartment, for occupant's carry-on baggage, located behind the lavatory in the rear part of the fuselage.	Complies
91.527	Operação em condições de gelo	Compliant	The aeroplane meets transport category aeroplane type certification provisions, including the requirements for certification for flight in icing conditions according to 14CFR Part 25 requirements.	Complies
91.531	Requisitos de segundo em comando	Operator's responsibility	-	Agree Operator Responsibility -
91.533	Requisitos para comissários	Not Applicable	Applicable only to aeroplane with a passenger seating capacity for more than 19.	Not Applicable
91.535	Guarda de alimentos, bebidas e equipamentos de serviços aos passageiros	Operator's responsibility	-	Agree Operator Responsibility -
91.537	Operações em espaço aéreo designado como RVSM (Reduced Vertical Separation Minimum)	Operator's responsibility	-	Agree Operator Responsibility -

RBHA	Title	Compliance	Remark	ANAC Finding
91.603	Dispositivo de alarme sonoro de velocidade	Compliant	The aeroplane is type certificated in the transport category according to 14CFR Part 25 and it is equipped with aural speed warning device complying with §25.1303(c)(1).	Complies
91.605	Limitações de peso de aviões civis categoria transporte	Operator's responsibility	-	Agree - Operator Responsibility
91.607	Saídas de emergência para aviões em operações de transporte de passageiros com fins lucrativos	Not Applicable	Applicable only to a large aeroplane (type certificated under the Civil Air Regulations effective before April 9, 1957) in passenger-carrying operations for hire.	Not Applicable
91.609 (a)	Operação com gravador de dados de voo ou gravador de voz na cabine inoperante	Operator's responsibility	-	Agree - Operator Responsibility
91.609 (b)	Operação por um operador outro que não o detentor de um certificado de homologação de operador aéreo	Operator's responsibility	-	Agree - Operator Responsibility
91.609 (c)	Requisitos para gravadores de dados de voo - 10 ou mais assentos de passageiros	Compliant	The aeroplane is equipped with one approved FDR that utilizes a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. It is capable of recording the data specified in appendix E of this part within the range, accuracy, and recording interval specified, and it retains more than 8 hours of aeroplane operation.	Complies
91.609 (d)	Operação do gravador de dados de voo	Compliant	The FDR installed in the aeroplane starts recording from engine start and stops to record when the engine is shutdown.	Complies

RBHA	Title	Compliance	Remark	ANAC Finding
91.609 (e)(f)	Requisitos para gravadores de voz na cabine dos pilotos	Compliant	<p>The aeroplane is equipped with one CVR that meets the requirements of section 25.1457.</p> <p>The CVR installed in the aeroplane starts recording from aeroplane power up and it stops recording 10 minutes after engine shutdown.</p> <p>The CVR has an erasure feature that is available on the miscellaneous synoptic page. It is only operable when the WOW switch is ON and parking brake is set. The CVR preserves at least 15 minutes of audio recording after erasure. The erased audio can be retrieved only by using the Accident Investigators Kit.</p>	Complies
91.609 (g)	Notificação de evento de um acidente ou ocorrência	Operator's responsibility	-	Agree Operator Responsibility
91.613	Materiais para compartimentos interiores	Not Applicable	Applicable only to aeroplane that conforms to an amended or supplemental type certificate issued in accordance with SFAR No. 41 for a maximum certificated takeoff weight in excess of 12,500 pounds.	Not Applicable
91.805	Limitações de operação. Aviões subsônicos a reação	Not Applicable	Applicable only to aeroplane included on the NC Group on ICAO Annex 16.	Not Applicable
91.Ap A	Operações Categoria II	Optionally Compliant	The aeroplane may, optionally, under operator's request, be configured for CAT II Operations.	Agree
91.Ap C	Operações no espaço aéreo sobre o Atlântico Norte denominado "NAT-MNPS"	Compliant	The aeroplane has approved navigation performance capability that complies with Appendix C requirements. It is capable to operate within airspace designated as Minimum Navigation Performance Specification Airspace.	Complies
91.Ap E	Especificação para gravadores de dados de voo para aviões	Compliant	The aeroplane FDR parameter list also complies with the FAR 135 Appendix F, which is more comprehensive than the requirements of this appendix.	Complies

RBHA	Title	Compliance	Remark	ANAC Finding
91.Ap G	Operação em espaço aéreo com separação vertical mínima reduzida (RVSM)	Compliant	The aeroplane is approved to operate within RVSM airspace.	Complies

RBAC 135 (amendment 135-00, issued on August 25th, 2010).

RBAC	Title	Compliance	Remark	ANAC Finding
135.21	Requisitos do manual	Operator's responsibility	-	Agree - Operator Responsibility
135.75 (b)	Assento dianteiro do observador: admissão à cabine de pilotos: credencial de inspetor	Operator's responsibility	-	Agree - Operator Responsibility. Please see item 12.1 of this report.
135.81 (c)	Manuais de Equipamentos da Aeronave e Manual de Voo da Aeronave	Operator's responsibility	-	Agree - Operator Responsibility
135.83 (a)(1) & (b)	Lista de verificações da cabine dos pilotos	Compliant	Embraer provides the required information to comply with these requirements in operational manuals and approved performance software: cockpit checklist, emergency procedures and OEI climb performance. The required information are provide in operational manuals (AFM, AOM and QRH).	Complies
135.83 (a)(2) & (c)	Lista de verificações em emergência da cabine dos pilotos	Compliant	Embraer provides the required information to comply with these requirements in operational manuals and approved performance software: cockpit checklist, emergency procedures and OEI climb performance. The required information are provide in operational manuals (AFM, AOM and QRH).	Complies
135.83 (a)(3)	Cartas aeronáuticas	Operator's responsibility	-	Agree - Operator Responsibility
135.83 (a)(4)	Carta de navegação em aerovias, cartas de áreas terminais, cartas de aproximação e de saída IFR	Operator's responsibility	-	Agree - Operator Responsibility

RBAC	Title	Compliance	Remark	ANAC Finding
135.83 (a)(5)	Dados de desempenho em subida com um motor inoperante para aeronaves multimotoras	Compliant	Embraer provides the required information to comply with these requirements in operational manuals and approved performance software: cockpit checklist, emergency procedures and OEI climb performance.	Complies
135.83 (a)(6)	Informação essencial relativa aos serviços de busca e salvamento	Operator's responsibility	-	Agree - Operator Responsibility
135.89 (b)	Requisitos para piloto: uso de oxigênio - Aeronave pressurizada	Compliant	The Crew Oxygen System provides a minimum of two-hour oxygen supply for each crew member based on the emergency descent profile. The aeroplane crew oxygen system comprises a quick-donning pressure demand oxygen mask with auto-dilution mode that provides supplemental and protective oxygen. The crew mask is approved according to TSO-C78a and TSO-C89a and can be placed on the face with one hand from the ready position within 5 seconds. It is an operator's responsibility to use the mask accordingly.	Complies
135.93	Piloto automático: altitudes mínimas de utilização	Compliant	Embraer provides autopilot operation and limitations in the operational manuals: AFM, AOM and QRH.	Complies
135.99 (a)	Composição de tripulação de voo - Limitações operacionais do Manual de voo da Aeronave	Compliant	The AFM and the AOM are provided to the operator and contains minimum flight crew information.	Complies
135.99 (b)	piloto como segundo em comando para operar uma aeronave com configuração para passageiros de 10 assentos ou mais	Operator's responsibility	-	Agree - Operator Responsibility
135.113	Ocupação de assento para piloto	Operator's responsibility	-	Agree - Operator Responsibility

RBAC	Title	Compliance	Remark	ANAC Finding
135.117	Instruções verbais aos passageiros antes da decolagem	Operator's responsibility	It is a flight crew's responsibility to brief the passenger before each takeoff. The oral briefing is supplemented, as baseline, by printed cards carried in convenient locations for the use of each passenger. The cards are appropriate for the aeroplane type, contain a diagram of, and method of operating, the emergency exits, and any other instructions necessary for the use of emergency equipment. The aeroplane is equipped with the pilot announcement system which allows the pilot to communicate with passengers. Embraer does not provide the recording playback device.	Agree - Operator Responsibility
135.122	Guarda de alimentos, bebidas e equipamentos de serviços aos passageiros	Operator's responsibility	-	Agree - Operator Responsibility
135.123	Deveres em emergências e evacuações de emergência	Operator's responsibility	-	Agree - Operator Responsibility
135.127	Requisitos de avisos aos passageiros e proibição de fumo a bordo	Compliant	The aeroplane in its baseline is equipped with "No Smoking" signals at visible location to all occupants. The signals are turned on and off by flight crewmembers in the cockpit.	Complies
135.128	Uso dos cintos de segurança e de cadeiras de segurança para crianças	Compliant	The aeroplane is provided with approved seats and safety belts to be used by each person aboard the aeroplane who has reached his second birthday. Embraer does not provide the child restraint system.	Complies
135.129 (d)(e)	Cartão de informações aos passageiros de cada assento de saída	Not Applicable	Not applicable for on-demand operations with aeroplanes having 19 or fewer passenger seats and commuter operations with aeroplanes having 9 or fewer passenger seats.	Not Applicable
135.143 (b)	Instrumentos e equipamentos aprovados e em condições operáveis	Operator's responsibility	-	Agree - Operator Responsibility

RBAC	Title	Compliance	Remark	ANAC Finding
135.143 (c)	Equipamentos transponder	Compliant	The Traffic Surveillance System for the aeroplane in its baseline consists of a TCAS with an Integrated Transponder Unit and a stand-alone transponder unit, which are approved according to TSO-C112.	Complies
135.145 (e)(1)	Voos de avaliação operacional	Operator's responsibility	-	Agree Operator Responsibility -
135.147	Controles de voo duplicados	Compliant	The aeroplane is equipped with a sidestick and pedals installed for each pilot.	Complies
135.149 (a)	Altímetro sensível ajustável pela pressão barométrica	Compliant	The aeroplane Air Data System consists of 4 SmartProbes™ and 2 Total Air Temperature (TAT) sensors. Altitude is displayed at the right side of each PFD and on the SFIS. Altitude barometric correction adjustment is performed by the flight crew selecting the barometric correction value used by the PFD to correct the barometric altitude that is displayed on the altitude tape. The adjusted barometric corrected value is displayed just below the altitude tape on each PFD and at the upper right corner above the altitude tape on the SFIS.	Complies
135.149 (b)	Equipamento de aquecimento ou de degelo para cada carburador	Not Applicable	Applicable only to aeroplane with reciprocating engines.	Not Applicable
135.149 (c)	Equipamentos adicionais para aviões a reação	Compliant	The aeroplane is equipped with the SFIS which is a third bank-and-pitch indicator and is installed in accordance with paragraph 121.305(j) and (k) of this chapter.	Complies
135.149 (e)	Equipamentos adicionais requeridos pela ANAC	Operator's responsibility	-	Agree Operator Responsibility -

RBAC	Title	Compliance	Remark	ANAC Finding
135.150 (a)	Sistema de avisos aos passageiros	Not Applicable	Applicable only to aeroplane with passenger seating configuration, excluding any pilot seat, of more than 19 seats.	Not Applicable
135.150 (b)	Sistema de interfone para os tripulantes	Not Applicable	Applicable only to aeroplane with passenger seating configuration, excluding any pilot seat, of more than 19 seats.	Not Applicable
135.151 (a)	Aplicabilidade e requisitos de instalação do CVR	Not Applicable	Superseded by paragraph (g)(1)(i) and (ii) of this section.	Not Applicable
135.151 (b)	Aplicabilidade e requisitos de instalação do CVR	Not Applicable	Applicable only to a multiengine, turbine-powered aeroplane having a passenger seating configuration of 20 or more seats.	Not Applicable
135.151 (d)	Labiofone ou um microfone de máscara	Compliant	The CVR system records audio signal received by boom and mask microphone in accordance with FAR 25.1457(c)(5).	Complies
135.151 (c)(e)	CVR - Dados gravados	(c) Operator's responsibility (e) Compliant	(c) - (e) The CVR has an erasure feature that is available on the miscellaneous synoptic page. It is only operable when the WOW switch is ON and parking brake is set. The CVR preserves at least 15 minutes of audio recording after erasure. The erased audio can be retrieved only by using the Accident Investigators Kit.	Agree
135.151 (f)	Requisitos adicionais para o CVR	Not Applicable	Applicable only to aeroplane manufactured before 07 Apr 2012.	Not Applicable

RBAC	Title	Compliance	Remark	ANAC Finding
135.151 (g)	Requisitos adicionais para o CVR	Compliant	The aeroplane is equipped with one CVR that meets the installation requirements of section 25.1457. The CVR installed in the aeroplane starts recording from aeroplane power up and it stops recording 10 minutes after engine shutdown. The CVR installed in the aeroplane records a minimum of 120 minutes and it is designed to comply with the requirements of TSO-C123b.	Complies
135.151 (h)	Gravação de mensagens geradas pelo equipamento de comunicação por datalink	Compliant	The CVR installed in the aeroplane records a minimum of 120 minutes of data link information.	Complies
135.152 (a)	Requisitos para FDR	Compliant	The aeroplane is equipped with one approved FDR that use a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. It is capable of recording the data specified in appendix B of this part within the range, accuracy, and recording interval specified, and it retains no less than 25 hours of aeroplane operation.	Complies
135.152 (b)	Requisitos para FDR	Not Applicable	Applicable only to a multiengine, turbine-powered aeroplane having a passenger seating configuration of 20 to 30 seats.	Not Applicable
135.152 (c)	Operação do FDR	Compliant	The FDR installed in the aeroplane starts recording from engine start and stops 60 seconds after the engine shutdown.	Complies
135.152 (d)(e)	FDR – Dados gravados	Operator's responsibility	-	Agree Operator Responsibility -
135.152 (f)	Requisitos de instalação	Compliant	The aeroplane is equipped with one FDR that meets the requirements of §25.1459.	Complies

RBAC	Title	Compliance	Remark	ANAC Finding
135.152 (g)	Dispositivo aprovado que facilite a localização do gravador quando submerso	Compliant	The FDR is provided with Underwater Locating Beacon (ULB) device.	Complies
135.152 (h)	Parâmetros operacionais que devem ser gravados	Compliant	The FDR records the parameters listed in paragraph (h)(1) through (h)(88) within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.	Complies
135.152 (i)	Faixas, precisões, resoluções e intervalos de gravação	Not Applicable	Superseded by paragraph (j) of this section.	Not Applicable
135.152 (j)	Faixas, precisões, resoluções e intervalos de gravação	Compliant	The FDR records the parameters listed in paragraph (h)(1) through (h)(88) within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.	Complies
135.152 (m)	Requisitos adicionais para o FDR	Compliant	The FDR complies with 25.1459(a)(3), (a)(6), (a)(7) and (a)(8). The FDR is approved according to TSO-C124b and retains the recorded information data for at least 25 hours.	Complies
135.152a	Gravadores digitais de dados de voo para aviões com 10 a 19 assentos	Compliant	The FDR complies the section 135.152.	Complies
135.153 (a)	Aplicabilidade do GPWS	Not Applicable	This section expired on 01 JAN 2008 for aeroplanes performing international flights, and on 01 JAN 2011 for other than aeroplanes performing international flights, according to paragraph (f) of this section.	Not Applicable
135.153 (c)	Informações no Manual de Voo (AFM) e o Manual Geral de Operações (MGO) aprovado	Not Applicable	This section expired on 01 JAN 2008 for aeroplanes performing international flights, and on 01 JAN 2011 for other than aeroplanes performing international flights, according to paragraph (f) of this section.	Not Applicable
135.154 (a)	Aplicabilidade do E-GPWS	Compliant	The aeroplane in its baseline configurations is equipped with a Class A TAWS that meets the TSO-C151b requirements and with AFDs (adaptive flight displays) that are approved to display terrain situational awareness.	Complies

RBAC	Title	Compliance	Remark	ANAC Finding
135.154 (c)	Informações no Manual de Voo da Aeronave	Compliant	The operational manuals (AFM, AOM, and QRH) are provided to the operator and contains appropriated procedures for the use of the TAWS and guidance on proper flight crew reaction in response to terrain awareness and warning system audio and visual warnings.	Complies
135.155 (a)	Extintores de incêndio: tipo e a quantidade do agente extintor	Compliant	The type and quantity of extinguishing agent are suitable for the kinds of fires likely to occur in such compartments.	Complies
135.155 (b)	Extintor manual na cabine de comando	Compliant	One hand fire extinguisher is located in the cockpit and readily accessible to the flight crew.	Complies
135.155 (c)	Extintor manual na cabine de passageiros	Compliant	One hand fire extinguisher is conveniently located in the passenger compartment.	Complies
135.157 (a)	Requisitos para equipamentos de oxigênio: Aeronaves não pressurizadas	Not Applicable	Applicable only to unpressurized aeroplane.	Not Applicable
135.157 (b)	Requisitos para equipamentos de oxigênio: Aeronaves pressurizadas	Compliant	The aeroplane in its basic configuration is equipped with a 77 cu.ft oxygen cylinder that provides at least two-hour supplemental oxygen to flight crew members at cabin pressure altitudes above 10,000ft ("Cabin High Altitude" warning CAS message), and at least 30 minutes supplemental oxygen to each passenger at cabin pressure altitudes above 15,000ft (oxygen masks automatic deployment at 14,500ft +/- 300ft). Optionally, under operator's request, a 115 cu.ft oxygen cylinder may be installed instead of the 77 cu.ft oxygen cylinder. It is an operator's responsibility to check if the supplemental oxygen is enough to the number of occupants and the route to be flown.	Complies

RBAC	Title	Compliance	Remark	ANAC Finding
135.157 (c)	Requisitos para equipamento	Compliant	The aeroplane has an oxygen system that allows the crew to readily determine the amount of oxygen available through the synoptic display in the cockpit and the system will trigger the CAS message "PAX OXY DEPLOYED" when the passenger oxygen masks are deployed. The oxygen system has only one cylinder to supply oxygen to cabin crews and passengers and his pressure is shown in the Synoptic display in the cockpit. For crew oxygen mask, the oxygen flow is indicated in the stowage box indicator. For passenger oxygen mask, the oxygen flow is indicated in a region of the oxygen mask bag, which become inflated with oxygen flow. The crew oxygen mask has a 100% mode setting, which can be set at their discretion, that allow to crew breathes 100% oxygen regardless of the cabin altitude.	Complies
135.158 (a)	Sistema de indicação do aquecimento do "pitot"	Compliant	The air data system is equipped with a pitot heat indication system, fully compliant with §25.1326 of this chapter.	Complies
135.159	Requisitos de equipamentos: transporte de passageiros em voo VFR noturno	Compliant	The aeroplane is equipped with all required equipment/instruments.	Complies

RBAC	Title	Compliance	Remark	ANAC Finding
135.161	Equipamentos de comunicações e navegação: transporte de passageiros em voo VFR noturno ou VFR diurno em áreas controladas	Optionally Compliant	The aeroplane in its basic configuration is equipped with two independent VHF communication systems. It may, optionally, under operator's request, be provided with single or dual independent HF systems, as well as a third VHF with datalink and/or CPDLC capability. The meteorological information can be received via the optional systems Datalink Graphical Weather or Satellite Datalink Weather. The aeroplane in its basic configuration is equipped with dual FMS dual GPS long-range navigation systems, two VOR and one DME radio navigation systems. The aeroplane may, optionally, under operator's request, be equipped with the second DME, and single or dual ADF radio-navigation systems.	Agree
135.163	Requisitos de equipamentos: aeronaves transportando passageiros em voo IFR	Compliant	The aeroplane is equipped with all required equipment/instruments.	Complies

RBAC	Title	Compliance	Remark	ANAC Finding
135.165	Equipamentos de comunicações e navegação: voos sobre grandes extensões de água ou IFR	Optionally Compliant	<p>The aeroplane in its basic communication system configuration is equipped with two VHF systems for short-range communications, and may, optionally, under operator's request, be equipped with a third VHF that supports ACARS and CPDLC datalink communication. For long-range communication Embraer may, optionally, under operator's request, install a single or dual HF system(s) and a SATCOM system.</p> <p>The aeroplane is equipped at each crew station with one headset with boom microphone, one handheld microphone and one microphone in the oxygen mask.</p> <p>The aeroplane is equipped at each crew station with one headset and one speaker.</p> <p>The baseline navigation configuration consists of two FMS-GPS long-range navigation systems, and two VOR/ILS/MB and one DME radio navigation systems for short-range navigation. The aircraft may, optionally, under operator's request, be equipped with a second DME, and single or dual ADF radio-navigation systems.</p> <p>The NAV-4000 and NAV-4500 receivers provide Marker Beacon radio navigation function for VOR and ILS facilities.</p> <p>The navigation and communication receptors are totally independent from each other.</p>	Agree
135.166	Equipamentos de emergência: operação sobre terreno desabitado ou selva	Not Compliant	The aeroplane is not equipped with search and rescue survival equipment list for this kind of operation.	Not compliant

RBAC	Title	Compliance	Remark	ANAC Finding
135.167	Equipamentos de emergência: operação sobre grandes extensões d'água e operações "off-shore" com helicópteros	Optionally Compliant	The aeroplane is equipped with an easily accessible life jacket for each occupant having an approved survivor locator light. The aeroplane may, optionally, under operator's request, be equipped with a single life raft to accommodate the required number of occupants under its rated buoyance capacity, equipped with an approved survival locator light. The optional liferaft is equipped with a survival kit that contains a pyrotechnic signaling device. The optional liferaft is equipped with a survival kit that contains a self-buoyant, water-resistant, portable emergency radio signaling device that is capable of transmission on the appropriate emergency frequency or frequencies and not dependent upon the aeroplane power supply.	Agree
135.169	Requisitos adicionais de aeronavegabilidade	Compliant	The aeroplane meets the additional airworthiness requirements of §§121.213 through 121.283 and 121.307.	Complies
135.170	Materiais para interiores	Compliant	Seat cushions as specified comply with the requirements pertaining to fire protection of seat cushions in §25.853(c). Thermal/acoustic insulation materials installed in the fuselage meet the flame propagation requirements of §25.856.	Complies
135.171 (a)	Cintos de segurança e de ombro: instalação nos assentos de tripulantes	Compliant	Each flight crewmember station is provided with an approved shoulder harness (five-point restraint system).	Complies
135.173 (a)	Equipamento de detecção de trovoadas (tipo "storm-scope") ou um radar meteorológico	EMB-550: Compliant	EMB-550: The aeroplane is equipped with an airborne weather radar according to §135.175 and may optionally be equipped with Lightning Detection System (LDS), under operator's request.	Complies
		EMB-545: Not Applicable	EMB-545: Applicable only to aeroplane that has a passenger seating configuration, excluding any pilot seat, of 10 seats or more in passenger-carrying operations.	Not applicable

RBAC	Title	Compliance	Remark	ANAC Finding
135.173 (f)	Suprimimento elétrico para o equipamento de detecção de trovoadas	Compliant	The Weather Radar is powered by the DC BUS 2. The Lightning Detection System is powered by the DC BUS 1.	Complies
135.175 (a)	Radar meteorológico de bordo	Compliant	The aeroplane is equipped with an airborne weather radar.	Complies
135.175 (e)	Suprimimento elétrico para o equipamento de radar meteorológico de bordo	Compliant	The Weather Radar is powered by the DC BUS 2.	Complies
135.177	Requisitos de equipamentos de emergência	Optionally Compliant	The aeroplane, on its baseline, is equipped with a first aid kit that contains all the required items. The aeroplane may, optionally, under operator's request, be equipped with a hatchet installed at the cockpit divider, behind the copilot seat. The aeroplane is equipped with "Fasten Seat Belt" and "No Smoking" signals at visible location to all occupants. The signals are turned on and off by flight crewmembers in the cockpit.	Agree
135.178	Equipamentos adicionais de emergência	Optionally Compliant	The aeroplane emergency exits have indication marks of location and operation of each door marked on its outside, in order to allow an external access to the cabin interior. Each emergency exit presents an outside marking border edge. This band has a color contrast readily distinguishable from the fuselage paint scheme surface, in compliance with the reflectance criteria established herein. The aeroplane may, optionally, under operator's request, be marked with Break-in points.	Agree
135.179 (a)(b)	Instrumentos e equipamentos inoperantes	Compliant	The MMEL and MEL Guide are provided to the operator at the aeroplane delivery. It is operator's responsibility to develop and approve his own MEL.	Complies
135.179 (c)	Instrumentos e equipamentos não incluídos na MEL	Compliant	The instruments and equipment listed in this paragraph that may not be included in the Minimum Equipment List are not included in the MMEL provided by Embraer.	Complies

RBAC	Title	Compliance	Remark	ANAC Finding
135.180 (a)	Aplicabilidade do sistema embarcado de prevenção de colisões (ACAS)	EMB-550: Compliant	EMB-550: The aeroplane is equipped with TCAS II 7.1 which meets the requirements of TSO-C119c.	Complies
		EMB-545: Not Applicable	EMB-545: Applicable only to aeroplanes with a maximum certificated take-off mass in excess of 15 000 kg or having a passenger seating configuration, excluding any crewmember seat, of more than 30 seats.	Not Applicable
135.180 (b)	Aplicabilidade do sistema embarcado de prevenção de colisões (ACAS)	Not Applicable	Applicable only to turbine powered aeroplane that has a passenger seat configuration, excluding any pilot seat, of more than 19 seats.	Not Applicable
135.180 (c)	Informações nos manuais requeridos pela seção 135.21	Compliant	The operational manuals (AFM, AOM, and QRH) are provided to the operator and contain appropriated procedures for the use of the TCAS II and guidance on proper flight crew reaction in response to TCAS alerts and warning system audio and visual warnings. In the event of any TCAS input failure, a caution message "TCAS FAIL" will be displayed on CAS. The same message will also be displayed on both PFDs.	Complies
135.180 (d)	ACAS para operação em espaço aéreo RVSM	Operator's responsibility	-	Agree Operator Responsibility -
135.181 (a)(1)	Requisitos de desempenho: aeronave monomotora transportando passageiros em voo IFR	Not Applicable	Applicable only to single-engine aeroplane.	Not Applicable
135.181 (a)(2)	Requisitos de desempenho: aeronave multimotora transportando passageiros em voo IFR	Compliant	Embraer provides the required information to comply with this requirement in the operational manuals and approved performance software.	Complies

RBAC	Title	Compliance	Remark	ANAC Finding
135.183 (a)	Requisitos de desempenho: aeronaves terrestres operando sobre água - altitude que permita alcançar terra no caso de falha de motor	Operator's responsibility	-	Agree Operator Responsibility -
135.183 (c)	Requisitos de desempenho: aeronaves terrestres operando sobre água - aeronave multimotora, peso para subida com motor crítico inoperante	Compliant	The required information to comply with this requirement is provided in the operational manuals and approved performance software.	Complies
135.185	Peso vazio e centro de gravidade: atualização requerida	Operator's responsibility	-	Agree Operator Responsibility -
135.227 (a),(b) (c),(e), (f)	Condições de gelo: limitações operacionais	Compliant	The aeroplane meets transport category airplane type certification provisions, including the requirements for certification for flight in icing conditions, according RBAC 135 requirements.	Complies
135.363 (f)	Dados de desempenho do Manual de Voo da Aeronave (AFM)	Operator's responsibility	-	Agree Operator Responsibility -
135.364	Limitações dos aviões. Tipo de rota	Operator's responsibility	-	Agree Operator Responsibility -
135.397	Pequenos aviões categoria transporte: limitações operacionais de desempenho	Not Applicable	Applicable only for small transport category aeroplane.	Not Applicable
135.398 (a) (b) (c) (d)	Limitações operacionais de desempenho: aviões categoria transporte regional	Not Applicable	Applicable only for commuter category aeroplanes.	Not Applicable

RBAC	Title	Compliance	Remark	ANAC Finding
135.399	Pequenos aviões não incluídos na categoria transporte: limitações operacionais de desempenho	Not Applicable	Applicable only for small nontransport category aeroplane.	Not Applicable
135.411 (a)(2)	Aplicabilidade de Manutenção	Operator's responsibility	-	Agree - Operator Responsibility
135.419	Programa aprovado de inspeções nas aeronaves	Compliant	Embraer provides the Maintenance Plan Document including the aeroplane inspection program and all maintenance manuals to support it.	Complies
135.421 (b) (c) (d) (e)	Programa de manutenção recomendado pelos fabricantes	Compliant	All maintenance manuals are provided to support the Maintenance Plan Document which contains recommended maintenance inspection program.	Complies
135.425	Programas de manutenção, manutenção preventiva, modificações e reparos	Operator's responsibility	-	Agree - Operator Responsibility
135.427 (b)	Manual de manutenção, manutenção preventiva, modificações e reparos	Operator's responsibility	-	Agree - Operator Responsibility
135 Ap A	Requisitos adicionais de aeronavegabilidade para aviões com 10 ou mais assentos para passageiros	Not Applicable	Applicable only to reciprocating-engine or turbopropeller-powered small aeroplane that has a passenger seating configuration, excluding pilot seats, of 10 seats or more.	Not Applicable
135 Ap B	Especificação para gravadores de dados de voo para aviões - parágrafo 135.152(a)	Not Applicable	Superseded by Appendix F of this part.	Not Applicable
135 Ap D	Especificação para gravadores de dados de voo para aviões - parágrafo 135.152(b)	Not Applicable	Superseded by Appendix F of this part.	Not applicable

RBAC	Title	Compliance	Remark	ANAC Finding
135 Ap F	Especificação para gravadores de dados de voo para aviões	Compliant	The FDR records the parameters listed in paragraphs 135.152(h)(1) through (h)(88) within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.	Complies
135 Ap G	Voos a grandes distâncias de aviões com dois motores a turbina (ETOPS)	Not Compliant	The aeroplane is not approved for ETOPS operations.	Not Compliant

APPENDIX 3

Acceptable Operator Difference Requirements (ODR) Tables

EMB-550 (LEGACY 500) TO EMB-545 (LEGACY 450) DIFFERENCES

Base Aircraft: EMB-550 (Legacy 500) Difference Aircraft: EMB-545 (Legacy 450)				COMPLIANCE METHOD			
				TRAINING		Checking / Currency	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
DIMENSIONS	EMB-550: Length = 20.74 m (68 ft 1 in) Height = 6.44 m (21 ft 2 in) Wing span = 20.25 m (66 ft 5 in) EMB-545: Length = 19.68 m (64 ft 7 in) Height = 6.48 m (21 ft 3 in) Wing span = 20.25 m (66 ft 5 in)	No	No	A	AOM	A	A
CABIN	Maximum occupants: EMB-550: up to 12 seats EMB-545: up to 9 seats	No	No	A	AOM	A	A
LIMITATIONS Weight	EMB-550 Pre-Mod SB 550-42-0004: MZFW = 12020 kg (26500 lb) MRW = 17280 kg (38096 lb) MTOW = 17200 kg (37920 lb) MLW = 15480 kg (34128 lb) EMB-550 Post-Mod SB 550-42-0004: MZFW = 12020 kg (26500 lb) MRW = 17480 kg (38537 lb) MTOW = 17400 kg (38360 lb) MLW = 15660 kg (34524 lb) EMB-545 Pre-Mod SB 550-42-0004: MZFW = 11750 kg (25904 lb) MRW = 16060 kg (35406 lb) MTOW = 16000 kg (35274 lb) MLW = 14750 kg (32518 lb) EMB-545 Post-Mod SB 550-42-0004: MZFW = 11750 kg (25904 lb) MRW = 16280 kg (35891 lb) MTOW = 16220 kg (35758 lb) MLW = 14750 kg (32518 lb)	No	No	A	AOM / AFM	A	A
LIMITATIONS Center of Gravity	EMB-550: 21% to 32% at MTOW 21% to 34% at MLW	No	No	A	AOM / AFM	A	A

	<p>26.5% to 47% at MZFW 37% to 47% at MOW</p> <p>EMB-545: 21.5% to 32.5% at MTOW 21.5% to 35% at MLW 28% to 47.5% at MZFW 40% to 47.5% at MOW</p>																								
TURNING RADIUS	<p>EMB-550:</p> <table border="1"> <thead> <tr> <th>Condition</th> <th>Curb to Curb</th> <th>Wall to Wall</th> </tr> </thead> <tbody> <tr> <td>Steering (62°)</td> <td>17.08 m (56ft 1in)</td> <td>30.38 m (99ft 8in)</td> </tr> <tr> <td>Towbar (90°)</td> <td>10.66 m (35ft)</td> <td>21.31 m (69ft 11in)</td> </tr> </tbody> </table> <p>EMB-545:</p> <table border="1"> <thead> <tr> <th>Condition</th> <th>Curb to Curb</th> <th>Wall to Wall</th> </tr> </thead> <tbody> <tr> <td>Steering (62°)</td> <td>16 m (52ft 6in)</td> <td>29.72 m (97ft 6in)</td> </tr> <tr> <td>Towbar (90°)</td> <td>10 m (32ft 10in)</td> <td>21.31 m (69ft 1in)</td> </tr> </tbody> </table>	Condition	Curb to Curb	Wall to Wall	Steering (62°)	17.08 m (56ft 1in)	30.38 m (99ft 8in)	Towbar (90°)	10.66 m (35ft)	21.31 m (69ft 11in)	Condition	Curb to Curb	Wall to Wall	Steering (62°)	16 m (52ft 6in)	29.72 m (97ft 6in)	Towbar (90°)	10 m (32ft 10in)	21.31 m (69ft 1in)	No	No	A	AOM	A	A
Condition	Curb to Curb	Wall to Wall																							
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SYSTEM	DIFFERENCES	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR																		
00	The EMB-545 has the HALTO (High Altitude Landing and Takeoff Operation) certified as a baseline optional feature. This feature allows the aircraft to operate in airports up to 13800 ft.	No	Minor	A	AOM / AFM	A	A																		
25. EQUIPMENTS / FURNISHINGS	<p>Optional Furnishings available only for EMB-545: refreshment center (reduced service galley on service area, replacing sidfacing seat), two place divan, cockpit pocket door, single seat work table, RHS wardrobe.</p> <p>Emergency Equipment: are the same for EMB-550 and EMB-545. However, the quantity of equipment was reduced in the EMB-545 due to its less passengers capacity. Some equipment were also relocated on the EMB-545 configurations without the galley.</p>	No	No	A	AOM	A	A																		
28. FUEL	<p>EMB-545 Fuel Tanks capacity is approximately 1000 kg (@ 0,803 kg/l fuel density) less than in the EMB-550.</p> <p>Usable Fuel: EMB-550: 5901 kg (@ 0.803 kg/l) EMB-450: 4900 kg (@ 0.803 kg/l)</p>	No	No	A	AOM / AFM	A	A																		

31. INSTRUMENTS	Oxygen Cylinder Indication – Color change threshold values (transition of the arrow color from white to green): EMB-550: 77 ft ³ – 1595 psi 115 ft ³ – 1110 psi EMB-545: 77 ft ³ – 1509 psi 115 ft ³ – 1051 psi Fuel tank quantity analog scale: EMB-550: 3200 kg (7060 lb) maximum EMB-545: 2800 kg (6160 lb) maximum	No	No	A	AOM	A	A
33. LIGHTS	The quantity of the following cabin lights in the EMB-545 is less than in the EMB-550: divan lights, reading lights, table lights, up/down wash lights, dado panel lights and advisory signs. The quantity of the following emergency lights is less than in the EMB-550: floor proximity, reading lights and exit signs.	No	No	A	AOM	A	A
34. NAVIGATION	The EMB-545 has different databases for the TOLD (Takeoff and Landing Function), Weight & Balance and Performance.	No	No	A	AOM / AFM	A	A
35. OXYGEN	Due to the maximum passengers capacity, the EMB-545 has 2 oxygen mask less in the passenger cabin than the EMB-550.	No	No	A	AOM	A	A
52. DOORS	The Over Wing Emergency Exit step-down distances are the following: EMB-550: 0.81 m (32 in) EMB-545: 0.75 m (30 in)	No	No	N/A	N/A	N/A	N/A
53. FUSELAGE	The EMB-545 has a shorter fuselage than the EMB-550. EMB-550 CF length: 8.06 m (26 ft 5 in) EMB-545 CF length: 7.01 m (23 ft)	No	No	A	AOM	A	A
56. WINDOWS	In each side, the EMB-545 has 2 windows less in the passengers cabin than the EMB-550.	No	No	A	AOM	A	A
71. POWER PLANT	The EMB-545 operator does not need to check the thrust reverser soak-back limit. Note: EMB-545 will have the thrust reverser modified so the limitation can be removed. EMB-550 will have the same modification incorporated from	No	Minor	A	AOM / AFM	A	A

	airplane SN 24 and SB for fleet.						
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There are no differences between the EMB-550 (Legacy 500) and the EMB-545 (Legacy 450) maneuvers.

EMB-545 (LEGACY 450) TO EMB-550 (LEGACY 500) DIFFERENCES

Base Aircraft: EMB-545 (Legacy 450) Difference Aircraft: EMB-550 (Legacy 500)				COMPLIANCE METHOD			
				TRAINING		Checking / Currency	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
DIMENSIONS	EMB-545: Length = 19.68 m (64 ft 7 in) Height = 6.48 m (21 ft 3 in) Wing span = 20.25 m (66 ft 5 in) EMB-550: Length = 20.74 m (68 ft 1 in) Height = 6.44 m (21 ft 2 in) Wing span = 20.25 m (66 ft 5 in)	No	No	A	AOM	A	A
CABIN	Maximum occupants: EMB-545: up to 9 seats EMB-550: up to 12 seats	No	No	A	AOM	A	A
LIMITATIONS Weight	EMB-545 Pre-Mod SB 550-42-0004: MZFW = 11750 kg (25904 lb) MRW = 16060 kg (35406 lb) MTOW = 16000 kg (35274 lb) MLW = 14750 kg (32518 lb) EMB-545 Post-Mod SB 550-42-0004: MZFW = 11750 kg (25904 lb) MRW = 16280 kg (35891 lb) MTOW = 16220 kg (35758 lb) MLW = 14750 kg (32518 lb) EMB-550 Pre-Mod SB 550-42-0004: MZFW = 12020 kg (26500 lb) MRW = 17280 kg (38096 lb) MTOW = 17200 kg (37920 lb) MLW = 15480 kg (34128 lb) EMB-550 Post-Mod SB 550-42-0004: MZFW = 12020 kg (26500 lb) MRW = 17480 kg (38537 lb) MTOW = 17400 kg (38360 lb) MLW = 15660 kg (34524 lb)	No	No	A	AOM / AFM	A	A

<p>LIMITATONS Center of Gravity</p>	<p>EMB-545: 21.5% to 32.5% at MTOW 21.5% to 35% at MLW 28% to 47.5% at MZFW 40% to 47.5% at MOW</p> <p>EMB-550: 21% to 32% at MTOW 21% to 34% at MLW 26.5% to 47% at MZFW 37% to 47% at MOW</p>	No	No	A	AOM / AFM	A	A																		
<p>TURNING RADIUS</p>	<p>EMB-545:</p> <table border="1" data-bbox="392 689 813 896"> <thead> <tr> <th>Condition</th> <th>Curb to Curb</th> <th>Wall to Wall</th> </tr> </thead> <tbody> <tr> <td>Steering (62°)</td> <td>16 m (52ft 6in)</td> <td>29.72 m (97ft 6in)</td> </tr> <tr> <td>Towbar (90°)</td> <td>10 m (32ft 10in)</td> <td>21.31 m (69ft 11in)</td> </tr> </tbody> </table> <p>EMB-550:</p> <table border="1" data-bbox="392 981 813 1187"> <thead> <tr> <th>Condition</th> <th>Curb to Curb</th> <th>Wall to Wall</th> </tr> </thead> <tbody> <tr> <td>Steering (62°)</td> <td>17.08 m (56ft 1in)</td> <td>30.38 m (99ft 8in)</td> </tr> <tr> <td>Towbar (90°)</td> <td>10.66 m (35ft)</td> <td>21.31 m (69ft 11in)</td> </tr> </tbody> </table>	Condition	Curb to Curb	Wall to Wall	Steering (62°)	16 m (52ft 6in)	29.72 m (97ft 6in)	Towbar (90°)	10 m (32ft 10in)	21.31 m (69ft 11in)	Condition	Curb to Curb	Wall to Wall	Steering (62°)	17.08 m (56ft 1in)	30.38 m (99ft 8in)	Towbar (90°)	10.66 m (35ft)	21.31 m (69ft 11in)	No	No	A	AOM	A	A
Condition	Curb to Curb	Wall to Wall																							
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<p>SYSTEM</p>	<p>DIFFERENCES</p>	<p><i>FLT CHAR</i></p>	<p><i>PROC CHNG</i></p>	<p><i>Training Level</i></p>	<p><i>Device</i></p>	<p><i>FLT CHK</i></p>	<p><i>CURR</i></p>																		
<p>00</p>	<p>The EMB-545 has the HALTO (High Altitude Landing and Takeoff Operation) certified as a baseline optional feature. It allows the aircraft to operate in airports up to 13800 ft.</p>	No	Minor	A	AOM / AFM	A	A																		
<p>25. EQUIPMENTS / FURNISHINGS</p>	<p>Optional Furnishings available only for EMB-545: refreshment center (reduced service galley on service area, replacing sidfacing seat), two place divan, cockpit pocket door, single seat work table, RHS wardrobe.</p> <p>Emergency Equipment: are the same for EMB-550 and EMB-545. However, the quantity of equipment was reduced in the EMB-545 due to its less passengers capacity. Some equipment were also relocated on the EMB-545 configurations without the galley.</p>	No	No	A	AOM	A	A																		
<p>28. FUEL</p>	<p>EMB-550 Fuel Tanks capacity is approximately 1000 kg (2205 lb) @ 0.803 kg/l (6.70 lb/US Gal) fuel density</p>	No	No	A	AOM / AFM	A	A																		

	higher than in the EMB-545. Usable Fuel: EMB-545: 4900 kg @ 0.803 kg/l (10803 lb @ 6.70 lb/US Gal) EMB-550: 5901 kg @ 0.803 kg/l (13010 lb @ 6.70 lb/US Gal)						
31. INSTRUMENTS	Oxygen Cylinder Indication – Color change threshold values (transition of the arrow color from white to green): EMB-545: 77 ft ³ – 1509 psi 115 ft ³ – 1051 psi EMB-550: 77 ft ³ – 1595 psi 115 ft ³ – 1110 psi Fuel tank quantity analog scale: EMB-545: 2800 kg (6160 lb) maximum EMB-550: 3200 kg (7060 lb) maximum	No	No	A	AOM	A	A
33. LIGHTS	The quantity of the following cabin lights in the EMB-550 is higher than in the EMB-545: divan lights, reading lights, table lights, up/down wash lights, dado panel lights and advisory signs. The quantity of the following emergency lights is higher than in the EMB-545: floor proximity, reading lights and exit signs.	No	No	A	AOM	A	A
34. NAVIGATION	The EMB-545 has different databases for the TOLD (Takeoff and Landing Function), Weight & Balance and Performance.	No	No	A	AFM / AOM	A	A
35. OXYGEN	Due to the maximum passengers capacity, the EMB-550 has 2 more oxygen mask in the passenger cabin than the EMB-545.	No	No	A	AOM	A	A
52. DOORS	The Over Wing Emergency Exit step-down distances are the following: EMB-545: 0.75 m (29.6 in) EMB-550: 0.81 m (32 in)	No	No	N/A	N/A	N/A	N/A
53. FUSELAGE	The EMB-550 has a larger fuselage than the EMB-545. EMB-545 CF length: 7.01 m (23 ft) EMB-550 CF length: 8.06 m (26 ft 5 in)	No	No	A	AOM	A	A
56. WINDOWS	In each side, the EMB-550 has 2 more windows in the passenger cabin than the EMB-545.	No	No	A	AOM	A	A
71. POWER PLANT	The EMB-550 operator needs to check the thrust reverser soak-back limit. NOTE: EMB-545 has the thrust reverser modified so the limitation can be removed. EMB-550 has the same modification incorporated from airplane	No	Minor	A	AOM / AFM	A	A

	SN 24 and SB for fleet.						
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There are no differences between the EMB-545 (Legacy 450) and the EMB-550 (Legacy 500) maneuvers.

EMB-550 (LEGACY 500) TO EMB-550 (PRAETOR 600) DIFFERENCES

Base Aircraft: EMB-550 (Legacy 500) Difference Aircraft: EMB-550 (Praetor 600)				COMPLIANCE METHOD			
				TRAINING		Checking / Currency	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
DIMENSIONS	Different Dimensions.	No	No	A	AFM / AOM	A	A
TURNING RADIUS	Different Turning Radius.	No	No	A	AOM	A	A
LIMITATIONS Weight	Increased weight.	No	No	A	AFM / AOM	A	A
LIMITATIONS Center of Gravity	Different Center of Gravity Envelopes.	No	No	A	AFM / AOM	A	A
LIMITATIONS Maneuvering Speed	Different Maneuvering Speed Envelope.	No	No	A	AFM / AOM	A	A
PERFORMANCE	Overall performance is different, including different range / endurance capability, noise levels and takeoff/landing field length requirements.	No	No	A	AFM / AOM	A	A
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
27. FLIGHT CONTROL	Flight control law function available in Normal Mode (NM): <ul style="list-style-type: none"> • Pitch Trim Command on Ground. • Maneuver Load Alleviation. 	No	No	A	AOM	A	A
28. FUEL	Two additional fuselage auxiliary fuel tanks, forward (FWD) and ventral (VTRL). An auxiliary fuel system to transfer the fuel from the auxiliary fuel tanks to the wing tanks. Air from ECS is used to pressurize both auxiliary fuel tanks. The Fuel Control Panel has additionally a Fuel Transfer Knob. The fuel tanks capacity is increased in approximately 1401 kg (@ 0.803 kg/l fuel density) higher than in the EMB-550 (Legacy 500). Usable Fuel: EMB-550 (Legacy 500): 5922 kg @ 0.803 kg/l (13058 lb @ 6.70 lb/US Gal) EMB-550 (Praetor 600): 7323 kg @ 0.803 kg/l (16145 lb @ 6.70	No	No	A	AOM	A	A

	lb/US Gal)						
31. INSTRUMENTS	<p>Rockwell Collins Pro Line Fusion Avionics System Load 6.3 Version:</p> <ul style="list-style-type: none"> FMS WT&BAL page has a different Center of Gravity envelope and additional FWD, VTRL and TOTAL fuel quantity fields. The Fuel Synoptic page additionally provides visual representation of the auxiliary fuel transfer system operation and fuel quantity indication. EICAS fuel quantity indication portion additionally displays the auxiliary (FWD and VTRL) fuel tanks quantity indication. SVS has the Runway Distance Remaining (RDR) function. <p>The following CAS messages are added.</p> <p>CAUTION CAS Messages:</p> <ul style="list-style-type: none"> FUEL AUX TK NEG PRESS FUEL AUX TK OVERPRESS FUEL TK VENT FAIL FUEL WING OVERFLOW FUEL XFR AUTO FAIL FUEL XFR FWD FAIL FUEL XFR REVERSE FLOW FUEL XFR VTRL FAIL <p>ADVISORY CAS Messages:</p> <ul style="list-style-type: none"> FUEL AUXTK PRESS FAIL FUEL XFR AUTO FAULT FUEL XFR NOT AUTO 	No	No	A	AFM / AOM	A	A
53. FUSELAGE	Modified wing-to-fuselage fairing.	No	No	A	AOM	A	A
57. WING	Modified winglet.	No	No	A	AOM	A	A
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
INTERNAL SAFETY INSPECTION	Added the step to set the Fuel Transfer Knob in AUTO position.	No	Yes	A	AFM / AOM	A	A
EXTERNAL INSPECTION	Auxiliary fuel tanks water draining.	No	Yes	A	AFM / AOM	A	A
BEFORE START	Auxiliary tanks fuel quantity check.	No	Yes	A	AOM /	A	A

	Different Pitch Trim Setting table.				QRH		
EMERGENCY, ABNORMAL PROCEDURES	<p>PERFORMANCE - Different performance data for landing in abnormal configuration</p> <p>DITCHING - Included a step to turn OFF the fuel transfer.</p> <p>FORCED LANDING - Included a step to turn OFF the fuel transfer.</p> <p>FUEL LEAK - Removed auxiliary fuel tanks consideration.</p> <p>PARTIAL OR GEAR UP LANDING - Included a step to turn OFF the fuel transfer.</p> <p>ENG 1(2) FUEL LO PRESS - Added step to cover auxiliary fuel tanks</p> <p>FUEL XFEED MISCMD - Added a remainder to cover auxiliary fuel tanks.</p> <p>Added abnormal procedure for the following CAS messages. - FUEL AUX TK NEG PRESS - FUEL AUX TK OVERPRESS - FUEL TK VENT FAIL - FUEL WING OVERFLOW - FUEL XFR AUTO FAIL - FUEL XFR FWD FAIL - FUEL XFR REVERSE FLOW - FUEL XFR VTRL FAIL - FUEL AUXTK PRESS FAIL - FUEL XFR AUTO FAULT - FUEL XFR NOT AUTO</p>	No	Yes	A	AFM / AOM / QRH	A	A

EMB-550 (PRAETOR 600) TO EMB-550 (LEGACY 500) DIFFERENCES

Base Aircraft: EMB-550 (Praetor 600) Difference Aircraft: EMB-550 (Legacy 500)				COMPLIANCE METHOD			
				TRAINING		Checking / Currency	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
DIMENSIONS	Different Dimensions.	No	No	A	AFM / AOM	A	A
TURNING RADIUS	Different Turning Radius.	No	No	A	AOM	A	A
LIMITATIONS Weight	Decrease weight.	No	No	A	AFM / AOM	A	A
LIMITATIONS Center of Gravity	Different Center of Gravity Envelopes.	No	No	A	AFM / AOM	A	A
LIMITATIONS Maneuvering Speed	Different Maneuvering Speed Envelope.	No	No	A	AFM / AOM	A	A
PERFORMANCE	Overall performance is different, including different range / endurance capability, noise levels and takeoff/landing field length requirements.	No	No	A	AFM / AOM	A	A
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
27.FLIGHT CONTROL	The following flight control law function available in Normal Mode (NM) are not available: <ul style="list-style-type: none"> • Pitch Trim Command on Ground. • Maneuver Load Alleviation. 	No	No	A	AOM	A	A
28. FUEL	The following items are removed: <ul style="list-style-type: none"> • Auxiliary fuel tanks, forward (FWD) and ventral (VTRL); • Auxiliary fuel transfer system; • Fuel Transfer Knob on the Fuel Control Panel. The fuel tanks capacity is decreased in approximately 1401 kg (@ 0.803 kg/l fuel density) lower than in the EMB-550 (Praetor 600). Usable Fuel: EMB-550 (Praetor 600): 7323 kg @ 0.803 kg/l (16145 lb @ 6.70 lb/US Gal) EMB-550 (Legacy 500): 5922 kg @ 0.803 kg/l (13058 lb @ 6.70 lb/US Gal)	No	No	A	AOM	A	A

31. INSTRUMENTS	Rockwell Collins Pro Line Fusion Avionics System Load 5.4 Version: - SVS Runway Distance Remaining (RDR) function is not available. NOTE: The Avionics System Load 6.3 features related to the auxiliary fuel transfer system are not applicable to the EMB-550 (Legacy 500).	No	No	A	AFM / AOM	A	A
53. FUSELAGE	Modified wing-to-fuselage fairing.	No	No	A	AOM	A	A
57. WING	Modified winglet.	No	No	A	AOM	A	A
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
BEFORE START	Different Pitch Trim Setting table.	No	Yes	A	AOM / QRH	A	A
EMERGENCY, ABNORMAL PROCEDURES	PERFORMANCE - Different performance data for landing in abnormal configuration. DITCHING - Removed a step to turn OFF the fuel transfer. FORCED LANDING - Removed a step to turn OFF the fuel transfer. FUEL LEAK - Removed auxiliary fuel tanks consideration. PARTIAL OR GEAR UP LANDING - Removed a step to turn OFF the fuel transfer. ENG 1(2) FUEL LO PRESS - Removed step to cover auxiliary fuel tanks . FUEL XFEED MISCMD - Removed a remainder to cover auxiliary fuel tanks.	No	Yes	A	AFM / AOM / QRH	A	A

EMB-545 (LEGACY 450) TO EMB-545 (PRAETOR 500) DIFFERENCES

Base Aircraft: EMB-545 (Legacy 450) Difference Aircraft: EMB-545 (Praetor 500)				COMPLIANCE METHOD			
				TRAINING		Checking / Currency	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
DIMENSIONS	Different Dimensions	No	No	A	AFM / AOM	A	A
TURNING RADIUS	Different Turning Radius	No	No	A	AOM	A	A
LIMITATIONS Weight	Increased weight	No	No	A	AFM / AOM	A	A
LIMITATIONS Center of Gravity	Different Center of Gravity Envelopes	No	No	A	AFM / AOM	A	A
PERFORMANCE	Overall performance is different, including different range / endurance capability, noise levels and takeoff/landing field length requirements.	No	No	A	AFM / AOM	A	A
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
28. FUEL	Relocation of gravity port and HLS. The EMB-545 (Praetor 500) fuel tanks capacity is increased in approximately 92 kg (210 lb) @ 0.803 kg/l (6.70 lb/US Gal) fuel density higher than in the EMB-545 (Legacy 450). Usable Fuel: EMB-545 (Legacy 450): 5409 kg @ 0.803 kg/l (11925 lb @ 6.70 lb/US Gal) (gravity refueling). EMB-545 (Legacy 450): 5500 kg @ 0.803 kg/l (12130 lb @ 6.70 lb/US Gal) (pressure refueling). EMB-545 (Praetor 500): 5920 kg @ 0.803 kg/l (13050 lb @ 6.70 lb/US Gal) (pressure and gravity refueling).	No	No	A	AOM	A	A
31. INSTRUMENTS	Rockwell Collins Pro Line Fusion Avionics System Load 6.3 Version: <ul style="list-style-type: none"> FMS WT&BAL page has a different Center of Gravity envelope. SVS has the Runway Distance Remaining (RDR) function. 	No	No	A	AFM / AOM	A	A
57. WING	Modified winglet.	No	No	A	AOM	A	A

There are no differences between the EMB-545 (Legacy 450) and the EMB-545 (Praetor 500) maneuvers.

EMB-545 (PRAETOR 500) TO EMB-545 (LEGACY 450) DIFFERENCES

Base Aircraft: EMB-545 (Praetor 500) Difference Aircraft: EMB-545 (Legacy 450)				COMPLIANCE METHOD			
				TRAINING		Checking / Currency	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
DIMENSIONS	Different Dimensions	No	No	A	AFM / AOM	A	A
TURNING RADIUS	Different Turning Radius	No	No	A	AOM	A	A
LIMITATIONS Weight	Decreased weight	No	No	A	AFM / AOM	A	A
LIMITATIONS Center of Gravity	Different Center of Gravity Envelopes	No	No	A	AFM / AOM	A	A
PERFORMANCE	Overall performance is different, including different range / endurance capability, noise levels and takeoff/landing field length requirements.	No	No	A	AFM / AOM	A	A
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
28. FUEL	Relocation of gravity port and HLS. The EMB-545 (Legacy 450) fuel tanks capacity is decreased in approximately 92 kg (210 lb) @ 0.803 kg/l (6.70 lb/US Gal) fuel density lower than in the EMB-545 (Praetor 500). Usable Fuel: EMB-545 (Praetor 500): 5920 kg @ 0.803 kg/l (13050 lb @ 6.70 lb/US Gal) (pressure and gravity refueling). EMB-545 (Legacy 450): 5409 kg @ 0.803 kg/l (11925 lb @ 6.70 lb/US Gal) (gravity refueling). EMB-545 (Legacy 450): 5500 kg @ 0.803 kg/l (12130 lb @ 6.70 lb/US Gal) (pressure refueling).	No	No	A	AOM	A	A
31. INSTRUMENTS	Rockwell Collins Pro Line Fusion Avionics System Load 5.4 Version: <ul style="list-style-type: none"> FMS WT&BAL page has a different Center of Gravity envelope. SVS Runway Distance Remaining (RDR) function is not available. 	No	No	A	AFM / AOM	A	A
57. WING	Modified winglet.	No	No	A	AOM	A	A

There are no differences between the EMB-545 (Praetor 500) and the EMB-545 (Legacy 450) maneuvers.

EMB-545/550 TO EMB-545/550 WITH RNP-AR CAPABILITY

Base Aircraft: EMB-545/550 Difference Aircraft: EMB-545/550 with RNP-AR				COMPLIANCE METHOD			
				TRAINING		Checking / Currency	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
LIMITATION	Minimum Equipment required to perform RNP AR approach	No	No	B	AFM / AOM	A	A
LIMITATION	Operational Limitation to perform RNP AR approach	No	No	B	AOM	A	A
RNP AR approach with RF legs	EMB-545/550 is capable of performing RNP AR approaches with RF legs	No	No	B	AFM / AOM	A	A
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
22 AUTOMATIC FLIGHT	APPR RNP AR annunciation on FMA	No	No	B	AOM	A	A
31 INSTRUMENTS	- RNP AR Approach selection; - Lateral/vertical excessive deviation annunciation	No	No	B	AFM / AOM	A	A
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	Training Level	Device	FLT CHK	CURR
Prior to flight	Added a step to: - verify currency of NAV database; - insert / confirm flight plan; - insert GPS NOTAMS; - check RNP Predictive RAIM; - check approach chart notes.	No	No	D	FFS C or D, or aircraft	A	A
Descent	Added a step to: - activate temperatura compensation (if applicable); - set RNP minima.	No	Yes	D	FFS C or D, or aircraft	A	A
Approach	Added a step to: - monitor track deviation; - monitor RNP approach mode.	No	Yes	D	FFS C or D, or aircraft	A	A
Emergency, Abnormal Procedures	Added the following abnormal procedure: - Degraded Navigation.	No	No	D	FFS C or D, or aircraft	A	A
RNP AR Approach (APPR RNP AR) Engaged (normal and Abnormal operation)	RNP AR approach, missed approach and landing.	No	Yes	D	FFS C or D, or aircraft	D	D