TYPE-CERTIFICATE

DATA SHEET

NO. EASA.IM.A. 158

for

EMBRAER EMB-505

Type Certificate Holder

EMBRAER

Rodovia Presidente Dutra, km 134
Distrito de Eugenio de Melo
12247-004 - São Jose dos Campos - SP
Brazil

For models: EMB-505
SECTION A:  EMB-505 .......................................................................................................................... 5
A.I. General ..................................................................................................................................... 5
  1. Data Sheet No: ................................................................................................................................. 5
  2. Aeroplane ......................................................................................................................................... 5
  3. Airworthiness Category .................................................................................................................... 5
  4. Manufacturer .................................................................................................................................. 5
  5. State of Design Authority ................................................................................................................ 5
  6. State of Design Authority Type Certificate Date ............................................................................ 5
  7. EASA Type Certification Application Date ..................................................................................... 5
  8. EASA Type Certificate Date .......................................................................................................... 5
A.II. Certification Basis ......................................................................................................................... 6
  1. Reference Date ............................................................................................................................... 6
  1.2 For ANAC Certification ................................................................................................................ 6
  1.3 For Operational Suitability Requirements ..................................................................................... 6
  2. State of Design Authority Type Certificate No. .............................................................................. 6
  3. ANAC Certification Basis .............................................................................................................. 6
  4. EASA Airworthiness Requirements (see note 11) ........................................................................ 6
  5. EASA Special Conditions ................................................................................................................ 6
  6. EASA Exemptions ........................................................................................................................... 7
  7. EASA Equivalent Safety Findings ................................................................................................... 7
  8. EASA Environmental Standards ................................................................................................... 7
  9. EASA Operational Suitability Requirements ................................................................................ 7
  9.2 Special conditions for OSD ......................................................................................................... 7
  9.3 Exemptions for OSD ................................................................................................................... 7
  9.4 Deviations for OSD ...................................................................................................................... 8
  9.5 Equivalent Safety for OSD ........................................................................................................... 8
  1. Type Design Definition ................................................................................................................ 8
  2. Description ..................................................................................................................................... 8
  3. Dimensions ..................................................................................................................................... 8
  4. Engine ........................................................................................................................................... 8
  5. Fluids ............................................................................................................................................... 8
  6. Air speeds ....................................................................................................................................... 8
  7. Maximum Operation Altitude ....................................................................................................... 8
  8. Operational Capability ................................................................................................................... 9
  9. Maximum Certified Weights ....................................................................................................... 9
  10. Centre of Gravity ......................................................................................................................... 9
  11. Datum .......................................................................................................................................... 9
  12. Mean Aerodynamic Chord (MAC) ............................................................................................... 9
  13. Levelling Means ........................................................................................................................... 9
  14. Minimum Flight Crew .................................................................................................................. 9
  15. Maximum Passenger Capacity ................................................................................................... 9
  16. Baggage / Cargo Compartment .................................................................................................. 10
  1. Master Minimum Equipment List ................................................................................................ 10
  2. Flight Crew Data ............................................................................................................................ 10
  3. Cabin Crew Data ............................................................................................................................ 10
  4. SIM Data .................................................................................................................................... 10
  5. Maintenance Certifying Staff Data ............................................................................................... 10
A.VI. Notes ........................................................................................................................................... 11
SECTION ADMINISTRATIVE ........................................................................................................... 13
I. Acronyms & Abbreviations .................................................................................................. 13
II. Type Certificate Holder Record......................................................................................... 14
III. Change Record .................................................................................................................. 14
SECTION A: EMB-505

A.I. General

1. Data Sheet No:
EASA IM.A.158

2. Aeroplane
EMB-505

3. Airworthiness Category
CS-23 Commuter Category

4. Manufacturer
Embraer S.A
Av. Brigadeiro Faria Lima 2170
12227-901 São Jose dos Campos - SP
Brazil

Embraer Executive Aircraft Inc. (note 9)
1205 General Aviation Drive
Melbourne, FL 32935-6309
United States of America

5. State of Design Authority
Agência Nacional de Aviação Civil - ANAC
Gerência Geral de Certificação de Produtos Aeronáuticos
Rua Laurent Martins, 209, Jd. Esplanada II
12242-431 – São José dos Campos-SP
Brazil

6. State of Design Authority Type Certificate Date
03 December 2009

7. EASA Type Certification Application Date
30 June 2017

8. EASA Type Certificate Date
29 April 2010
A.II. Certification Basis

1. Reference Date
   1.2 For ANAC Certification
      28 Feb 2007

   1.3 For Operational Suitability Requirements
      28 Feb 2007

2. State of Design Authority Type Certificate No.
   EA-2009T12

3. ANAC Certification Basis
   RBHA 23 - Requisitos de Aeronavegabilidade. Aviões Categoria Normal, Utilidade, Acrobática e Transporte Regional (Airworthiness Standards. Normal, Utility, Acrobatic, and Commuter Category Airplanes), corresponding to U.S. 14 CFR Part 23 including amendments 23-1 through 23-57; and additional requirements as per ANAC FCAR HT-01.

4. EASA Airworthiness Requirements (see note 11)
   CS 23 – “Normal, Utility, Aerobatic and Commuter Category Aeroplanes” of 14 November 2003, as applicable to Commuter Category Certification; and additional requirements as per EASA CRI A-01. CS-ACNS (Subpart D, section 4) - initial issue of 17/12/2013 (see note 10)

5. EASA Special Conditions
   B-01 Part 23 Jets - Handling and Performance Requirements
   B-02 High Speed Characteristics
   B-03 Part 23 Jets - Stall Speed Determination
   B-52 Human Factors - Integrated Avionics System
   B-102 Performance Credit for APR during Go-Around
   C-01 Sonic Fatigue
   C-02 Pressurisation into Non-Pressurised Areas
   C-03 Speed Margins
   C-04 Yawing Manoeuvre
   C-05 Dynamic Response
   C-06 Out of Trim Characteristics (Structures)
   D-01 Take-Off Warning System
   D-02 Extension and Retraction System
   D-03 Wheels
   D-04 Brakes and Braking Systems
   D-05 Doors
   D-06 Bird Strike
   D-08 Steering Systems
   D-09 Operation above 41.000 ft
   D-103 Belted Toilet Seat – Single Place Sidefacing Seat
   D-104 Sideward Seating Arrangement
   D-105 Inflatable Restraints
   E-01 Fuel Tank Crashworthiness
6. EASA Exemptions
N/A

7. EASA Equivalent Safety Findings
D-102 Ditching emergency exit for passenger
D-106 Video Monitors Deployed from Aisle Ceiling
E-102 Digital only N2 and Fuel Flow
E-103 Usable Fuel Quantity Markings
E-104 ELOS ATR/ APR
F-57 Use of LED for Navigation Lights and Anti-Collision Lights

8. EASA Environmental Standards
CS 34 - Aircraft Engine Emissions and Fuel Venting, of 17 October 2003;
CS 36 - Aircraft Noise, of 17 October 2003;

9. EASA Operational Suitability Requirements
CS-FCD - Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data CS-FCD,
Initial issue dated 31 Jan 2014;
JAR-MMEL/MEL – Master Minimum Equipment List / Minimum Equipment List Section 1, Subpart A
and B, Amdt. 1, dated 1 August 2005, as defined in CRI A-MMEL;

9.2 Special conditions for OSD
None

9.3 Exemptions for OSD
None
9.4 Deviations for OSD
None

9.5 Equivalent Safety for OSD
None

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition
Defined by Report 50STDSD002 “Type Design Standard Document – EASA” at Revision Original or later approved revision.

2. Description
Low wing jet with a T-tail configuration, powered by two high bypass turbofan engines mounted on aft fuselage pylons.

The structure is conventional, with a predominant aluminium-alloy fuselage and wing. The landing gear is retractable tricycle type, and both main and nose landing gears are single wheeled.

3. Dimensions
Length 15.64 m (51 ft 3.74 in)
Span 15.91 m (52 ft 2.38 in)
Height 5.10 m (16 ft 8.78 in)
Wing Area 28.5 m² (306.77 ft²)

4. Engine
Two Pratt & Whitney Canada PW535E or PW535E1 turbofans (TC/TCDS reference IM.E.048)

5. Fluids
Fuel: Refer to applicable approved manuals
Oil: Refer to applicable approved manuals

6. Air speeds
V_{MO} 320 KIAS, M_{MO} 0.78 (See Airplane Flight Manual)
V_{MO} 320 KIAS, M_{MO} 0.80 (See Airplane Flight Manual) (see note 12)

7. Maximum Operation Altitude
13,716 m (45,000 ft) pressure altitude
8. Operational Capability
Single Pilot / Two Pilots
VFR Day and Night
IFR Day and Night
RVSM
Flight into Known Icing
Extended Over Water

9. Maximum Certified Weights
Takeoff: 8150 kg (17968 lb)
          8340 kg (18387 lb) (see note 8)
          8415 kg (18551 lb) (see note 12)
Landing: 7650 kg (16865 lb)
          7730 kg (17042 lb) (see note 8)
          7835 kg (17272 lb) (see note 12)
Zero Fuel: 6350 kg (13999 lb)
          6450 kg (14220 lb) (see note 8)
          6470 kg (14263 lb) (see note 12)
Ramp: 8200 kg (18078 lb)
       8390 kg (18497 lb) (see note 8)
       8455 kg (18617 lb) (see note 12)

10. Centre of Gravity
See Airplane Flight Manual

11. Datum
2.286 m (90 in) forward and 0.154 m (6.06 in) leftward of the jig point (nose jack pad location).

12. Mean Aerodynamic Chord (MAC)
2.05 m (80.71 in.) (L.E. of MAC at + 6.72 m (264.51 in.)

13. Levelling Means
Located in the main door region on the omega beam between frames 11 and 12 (see AMM for further information)

14. Minimum Flight Crew
(See note 5 for cockpit equipment /arrangement restrictions)
One pilot (in the left pilot seat) plus additional equipment as specified in the Limitations Section of the EASA Approved Airplane Flight Manual or

One pilot and one copilot.

15. Maximum Passenger Capacity
Maximum ten (see note 7)
16. **Baggage / Cargo Compartment**
LH Forward Cabinet 20 kg (44 lb)
Lavatory Cabinet 15 kg (33 lb)
Aft Baggage Compartment 210 kg (463 lb)
Forward Baggage Compartment 50 kg (110 lb)
Refreshment Center 32 kg (71 lb)

**Note:** Some airplanes have stowage compartments, LH Forward Cabinet, Lavatory Cabinet, Refreshment Center and Aft Baggage Compartment with higher load capacities. Refer to their respective placards and Flight Manual to find this information.

A.IV. **Operating and Service Instructions**

1. **Airplane Flight Manual (AFM):**
   Airplanes must be operated according to the EASA approved AFM, part number AFM-2666, revision original (or later approved revision)

2. **Airplane Maintenance Manual (AMM):**
   Airplane Maintenance Manuals, part number AMM-2757 or AMM-4610 revision original (or later approved revision). See Chapter 4, “Airworthiness Limitations” (Note 3). “Airworthiness Limitations” may not be changed without the approval of EASA.

A.V. **Operating and Service Instructions**

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.157 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014;

1. **Master Minimum Equipment List**
   The MMEL is defined in document MMEL-3849 revision 3, dated 14 Dec 2015 or later approved revisions;

2. **Flight Crew Data**
   The Flight Crew Data is defined in 500MSO097 revision A dated 07 Dec 2015 or later approved revisions;

3. **Cabin Crew Data**
   Not applicable;

4. **SIM Data**
   Not applicable;

5. **Maintenance Certifying Staff Data**
   Not applicable;
NOTE 1 - Weight and balance.  
Current weight and balance report, including the list of equipment that are part of the certificated basic empty weight and loading instructions, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include:

Unusable fuel: 22.8 kg (50.26 lb) at + 6.51 m (256.22 in.) aft of datum  
Full engine oil: 16 kg (35.27 lb) at + 9.83 m (386.85 in) aft of datum*  
Hydraulic Fluid: 8.8 kg (19.40 lb) at + 7.96 m (313.50 in) aft of datum  
*It is considered the oil from the engine installation (filters and lines)

NOTE 2 - Markings and placards.  
All markings and placards required by the applicable certification requirements (see certification basics) and by the operational requirements must be installed in the appropriated locations. Required placards and marking are listed in chapter Eleven (11) of the Aircraft Illustrated Parts Catalog (AIPC) and Airplane Maintenance Manual (AMM).

NOTE 3 - Continuing Airworthiness.  

NOTE 4 - All replacement seats (crew and passenger), although they may comply with TSO C127, must also be demonstrated to comply with installation requirements into the aircraft listed in CS 23.2, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered. Any deviation in the foam construction or stiffness must be demonstrated by test or analysis to comply with the CS 23.562 paragraph.

NOTE 5 - Approval for operation with a minimum crew of one pilot (in the left pilot seat) is based upon the cockpit equipment installation and arrangement evaluated during ANAC certification testing. No significant changes may be made to the installed cockpit equipment or arrangement (EFIS, autopilot, avionics, etc.), except as permitted by the approved MMEL, without prior approval from the responsible Aircraft Certification Office.

NOTE 6 - The EMB-505 is often referred to in Embraer marketing literature as the “PHENOM 300” and “Phenom 300E”. These names are strictly marketing designation and are not part of the official model designation.

NOTE 7 – Overall Maximum in passenger compartment is nine passengers; ten passengers only in single pilot configuration as notified in AFM-2666

NOTE 8 - If post-mod SB 505-00-0008. or with an equivalent modification factory incorporated
**NOTE 9** – Production Certificate 346CE - The manufacturer Embraer Executive Aircraft Inc. located in Melbourne, Florida, is licensed by Embraer S.A. to manufacture the Model Aircraft listed in this Type Certificate Data Sheet. S/N 50500118 and subsequent may be produced either by Embraer Executive Aircraft Inc. in Melbourne, Florida or Embraer S.A. in Brazil. The manufacturer can be confirmed by the aircraft data plate. Aircraft produced by Embraer Executive Aircraft Inc. in Melbourne, Florida with a S/N 50500118 and 50500122 were produced under the Type Certificate.

**NOTE 10** – if post-mod SB 505-34-0011 (G3000 avionics) or post-mod SB 505-34-0010 (G1000 avionics), (for single transponder installation of NXT-600 Mode S/ADS-B manufactured by ACSS) for transponder installation of or equivalent factory modifications are incorporated, and any other modification identified applicable by Embraer, and/or for installation of transponders.

**NOTE 11** – Sections of CS-ACNS, as applicable, may be raised as part of the certification basis for avionic installations.

**NOTE 12** – For aircraft equipped with PW535E1 engines.
**SECTION ADMINISTRATIVE**

I. Acronyms & Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.C.</td>
<td>Advisory Circular</td>
</tr>
<tr>
<td>A.D.</td>
<td>Airworthiness Directives</td>
</tr>
<tr>
<td>AFM</td>
<td>Airplane Flight Manual</td>
</tr>
<tr>
<td>C.G.</td>
<td>Centre of Gravity</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CRI</td>
<td>Certification Review Items</td>
</tr>
<tr>
<td>CS</td>
<td>Certification Specifications</td>
</tr>
<tr>
<td>EASA</td>
<td>European Aviation Safety Agency</td>
</tr>
<tr>
<td>EFIS</td>
<td>Electronic Flight Information System</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>F.S.</td>
<td>Frame Status</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FADEC</td>
<td>Full Authority Digital Engine Control</td>
</tr>
<tr>
<td>FT</td>
<td>Feet</td>
</tr>
<tr>
<td>GAL</td>
<td>Gallons</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IFR</td>
<td>Instrument Flight Rules</td>
</tr>
<tr>
<td>KCAS</td>
<td>Knots Calibrated Air Speed</td>
</tr>
<tr>
<td>KG</td>
<td>Kilo Grams</td>
</tr>
<tr>
<td>KIAS</td>
<td>Knots Indicated Air Speed</td>
</tr>
<tr>
<td>LBS</td>
<td>Pounds</td>
</tr>
<tr>
<td>MIL</td>
<td>Military Standard</td>
</tr>
<tr>
<td>MMEL</td>
<td>Master Minimum Equipment List</td>
</tr>
<tr>
<td>N.A.A.</td>
<td>National Aviation Authority</td>
</tr>
<tr>
<td>RVSM</td>
<td>Reduced Vertical Separation Minimum</td>
</tr>
<tr>
<td>S.B.</td>
<td>Service Bulletin</td>
</tr>
<tr>
<td>T.O.</td>
<td>Take Off</td>
</tr>
<tr>
<td>TC</td>
<td>Type Certificate</td>
</tr>
<tr>
<td>TCDS</td>
<td>Type Certificate Data Sheet</td>
</tr>
<tr>
<td>TCDSN</td>
<td>Type Certificate Data Sheet - Noise.</td>
</tr>
<tr>
<td>TSO</td>
<td>Technical Standards Order</td>
</tr>
<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
</tr>
</tbody>
</table>
II. Type Certificate Holder Record

Date:
19 Nov 2010

Type Certificate Holder:
Embraer S.A.
Rodovia Presidente Dutra, km 134
Distrito de Eugenio de Melo
12247-004 - São Jose dos Campos – SP
Brazil

III. Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue 1</td>
<td>29 April 2010</td>
<td>Adding SC D-103, various corrections</td>
</tr>
<tr>
<td>Issue 2</td>
<td>4 Oct 2011</td>
<td>Adding SC D-104, D-105, max passenger, change record update</td>
</tr>
<tr>
<td>Issue 3</td>
<td>22 May 2012</td>
<td>Included the new Maximum Operating Weights values</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Included the Production Certificate and new manufacturing site</td>
</tr>
<tr>
<td>Issue 4</td>
<td>30 April 2013</td>
<td>ANAC Certifying Authority address updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Removed “Normal Category Certification” from ANAC Certification Basis.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New Special Condition CRI’s Added F-92, F-93, O-01, O-04.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baggage compartment weights amended and note added.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AMM-4610 added to approved Manuals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note 1 “Hydraulic fluid” arm in meters corrected to align with AFM-2666.</td>
</tr>
<tr>
<td>Issue 5</td>
<td>12 March 2015</td>
<td>OSD elements are added;</td>
</tr>
<tr>
<td>Issue 6</td>
<td>16 December 2015</td>
<td>Added note 10 and 11. Corrected revision date of MMEL</td>
</tr>
<tr>
<td>Issue 8</td>
<td>16 February 2018</td>
<td>Updated information in Cover Sheet, sections A.III “Technical Characteristics and Operational Limitations” and A.VI “Notes”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update of fields “Engines”, “Airspeeds”, “Maximum Certified Weights”, “NOTE 3” and addition of “Note 12” were motivated by modification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>introduced by DCA 0505-000-00110-2018-EASA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update of field “Note 6” included “Phenom 300E” commercial name that was adopted before but was missing update in TCDS.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cover sheet was changed to update current Embraer S.A. address</td>
</tr>
</tbody>
</table>

-END-