TYPE-CERTIFICATE
DATA SHEET

No. EASA.IM.A.032

for

EMBRAER EMB-145

Type Certificate Holder:

Embraer S.A.

Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

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</table>
SECTION 1: GENERAL (ALL MODELS)

1. Data Sheet No: IM.A.032

2. Airworthiness Category: Large Aeroplanes

3. Performance Category: A

4. Certifying Authority: ANAC Agência Nacional de Aviação Civil
Gerência Geral de Certificação de Produtos Aeronáuticos
P.O. Box 6001
12228-901 - São José dos Campos - SP
Brazil

5. Type Certificate Holder: Embraer S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

6. ETOPS: Not applicable

I. General


II. Certification Basis

1. Reference Application Date for ANAC (CTA) Certification

   - EMB-145MK: 28 February 2000

2. CTA Certification Date

   - EMB-145MK: 12 June 2000

3. EASA (JAA) Validation Application Date

   - EMB-145, EMB-145ER, EMB-145EU: 23 November 1993
   - EMB-145LR: 10 October 1997
   - EMB-145LU: 08 March 1999
   - EMB-145MP: 09 February 1999
   - EMB-145MK: 03 March 2000

4. EASA Certification Date

     (Date of first TC issuance within EU MS by DGAC Belgium & INAC Portugal; JAA recommendation 20.05.97)
     (Date of first TC issuance within EU MS by ENAC Italy; JAA recommendation 14.11.97)
   - EMB-145LR: 18 December 1998
     (Date of first TC issuance within EU MS by DGAC Spain; JAA recommendation 18.12.98)
   - EMB-145MP: 13 October 1999
     (Date of first TC issuance within EU MS by CAA Finland; JAA recommendation 24.09.99)
   - EMB-145LU: 13 October 1999
     (Date of first TC issuance within EU MS by CAA Finland; JAA recommendation 19.4.99)
   - EMB-145MK: 02 August 2002
     (Date of first TC issuance within EU MS by CAA Denmark; JAA recommendation 05.07.02)

5. ANAC (CTA) Certification Basis

   RBHA (FAR) Part 25 Amendment 84
6. EASA Certification Basis

JAR 25 Change 14, dated 27 May 1994
JAR AWO Change 2
CS 25.851(a)(6) at Amdt. 18 in regards to the equipment installation and qualification of Halon free-hand-held Fire Extinguishers
NPA 25B261 Harmonisation of FAR 25 / JAR 25 Flight Requirements, CRI B-07
INT/POL/25/6 Worn Brakes (Brake Testing) CRI F-07

EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK:
Identical EASA certification basis as EMB-145, EMB-145ER, EMB-145EU, EMB-145EP except for
-JAR 25.519 - Jacking and tie-down provisions - applicable at JAR 25 change 14 + Orange Paper 25/96/1
-JAR 25B951 - Essential APUs - Fuel System - General - applicable at JAR 25 change 14 + Orange Paper 25/96/1

7. Special Conditions

SC G-5 Resistance to fire terminology (NPA 25D-181) Nuisance Shaker Occurrences CRI B-22

The following Interim Policies have been applied to the EMB 145:
INT/POL/25/1: Landing Gear Warning (included in JAR 25, Change 14)
INT/POL/25/2: Protection from the effects of HIRF CRI F-01
INT/POL/25/3: Protection from the effects of Lightning Strike, Direct Effects CRI F-02
INT/POL/25/4: Protection from the effects of Lightning Strike, Indirect Effects CRI F-03
INT/POL/25/7: Rapid Decompression (included in JAR 25, Change 14)
INT/POL/25/8: Yawing Manoeuvring Conditions CRI C-01
INT/POL/25/9: Fuel Tank Crashworthiness CRI C-02
Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWICRI H-01
Pilot Compartment View – Hydrophobic Coatings in lieu of Windshield Wipers CRI D-15
(cover CRI to FCAR HIS-08-145 stage 4 dated 23 April 2013)

8. Equivalent Safety Findings

NPA 25B215 Stall and Stall Warning Speeds and Manoeuvre Capability CRI B-04
Lavatory Oxygen System Restoration CRI F-38

9. Deviations (formerly referred to as “Exemptions”)

None defined

10. Environmental Standards

ICAO Annex 16

11. Operational Suitability Requirements

11.1 OSD MMEL (as defined by CRI A-MMEL Issue 2, dated 14 December 2015)
JAR MMEL/MEL Amendment 1, Section 1

11.2 OSD FCD
CS-Flight Crew Data, Initial Issue dated 31 January 2014

III. Technical Characteristics and Operational Limitations

Two aft mounted turbo-fan engine, short to medium range, single aisle, T-tail, large category airplane.


1.1 Type Design Definition

Defined in JAA CRI A-6, which is included in report 145-MS-001, including report 145-MS-380.

1.2 Engines

EMB-145 (basic model): Two (2) Rolls-Royce Corp. USA AE3007A or Two (2) AE3007A1/1 or Two (2) Rolls-Royce Corp. USA AE3007A1P turbofan engines

EMB-145ER, EMB-145EU, EMB-145EP: Two (2) Rolls-Royce Corp. USA AE3007A or Two (2) Rolls-Royce Corp. USA AE3007A1/1 or Two (2) Rolls-Royce Corp. USA AE3007A1P or Two (2) Rolls-Royce Corp. USA AE3007A1 turbofan engines or one (1) Rolls-Royce Corp. USA AE3007A and one (1) Rolls-Royce Corp. USA AE3007A1/1 turbofan engine

EMB-145LR, EMB-145MP, EMB-145MK: Two (2) Rolls-Royce Corp. USA AE3007A1 or Two (2) Rolls-Royce Corp. USA AE3007A1P turbofan engines

EMB-145LU: Two (2) Rolls-Royce Corp. USA AE3007A1 or Two (2) Rolls-Royce Corp. USA AE3007A1P turbofan engines

1.1.1 Engine Limits

See Section IV “Notes” – 1.1

1.3 Fuel

Eligible Fuels see Section IV “Notes” – 1.3

Fuel Capacity

EMB-145 (basic model), EMB-145ER, EMB-145EU, EMB-145EP: Maximum usable fuel of 5146 litres (two tanks with 2573 litres at +15 322mm), Unusable fuel of 54 l (27 l per tank)

EMB-145LR, EMB-145LU: Maximum usable fuel of 6396 l (two tanks of 3198 l at +15 153mm), Unusable fuel of 44l (22 l per tank)

**EMB-145MP, EMB-145MK:**
Maximum usable fuel of 5146 l (two tanks of 2573 l at +15153 mm),
Unusable fuel of 54 l (27 l per tank)

1.4 Limit Speeds

Refer to approved Airplane Flight Manual.

1.5 Centre of Gravity Range

Refer to approved Airplane Flight Manual.

1.6 Maximum Certified Weights

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Taxi and ramp</td>
<td>19300 kg</td>
<td>20090 kg</td>
<td>20700 kg</td>
<td>21090 kg</td>
<td>22100 kg</td>
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<td>Take-off</td>
<td>19200 kg</td>
<td>19990 kg</td>
<td>20600 kg</td>
<td>20990 kg</td>
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<td>17100 kg*</td>
<td>17100 kg*</td>
<td>17900 kg</td>
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<table>
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<tr>
<th>MODEL</th>
<th>EMB-145LR (A1 engines)</th>
<th>EMB-145LU</th>
<th>EMB-145 MP</th>
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<td>Zero fuel</td>
<td>17900 kg</td>
<td>17900 kg</td>
<td>17900 kg</td>
<td>17900 kg</td>
</tr>
</tbody>
</table>

*For airplanes Pos-mod. SB 145-53-0064, the MZFW will be 17,350 kg
**For airplanes Pos-mod. SB 145-53-0065, the MTOW will be 21,450 kg
(to increase again the MTOW up to 22 000 kg, the SB 145-53-0066 must be incorporated)

1.7 Minimum Flight Crew

Two (2): Pilot and Co-pilot for all types of flights

1.8 Maximum Seating Capacity: 50

1.9 Cargo compartment loading

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<thead>
<tr>
<th>Location</th>
<th>Class</th>
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<td>Front</td>
<td>NA</td>
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<td>Middle</td>
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<tr>
<td>Rear</td>
<td>D or C</td>
<td>9.2 m³ (325 ft³)</td>
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<td>Underfloor</td>
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1.10 Environmental Flight Envelope

Refer to approved Airplane Flight Manual.

1.11 Other Limitations

Refer to approved Airplane Flight Manual.

1.12 Auxiliary Power Unit (APU)

One (1) SUNDSTRAND T-62T-40C11 or T-62T-40C14 model
for APU limits see see Section IV “Notes” – 1.2

1.13 Oils

Eligible Fuels see Section IV “Notes” – 1.4
Oil Capacity: 11.4 litres in each nacelle

1.14 Equipment

The approved equipment is listed in the EMBRAER technical report: 145-MS-370.

1.15 All Weather Capabilities

CAT II

1.16 Wheels and Tyres

See Section IV “Notes” – 1.5

1.17 Hydraulics

Fluid specifications: SAE AS1241 Type IV

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)

Airplanes must be operated according to the EASA approved AFM ref. AFM 145/1154 revision original (or later approved revision)

2. Instructions for Continued Airworthiness - Airworthiness Limitations

- The life limitations are provided in the item a 2.2 of the "Appendix 2", "Airworthiness Limitation Requirements" of the document MRB n° 145/1150
- The structure Certification Maintenance Requirements are listed in the "Appendix 2", "Airworthiness Limitation Requirements" of the document MRB n°145/1150
- System Certification Requirements are listed in the "Appendix 1", "Airworthiness Limitation Requirements", of the document MRB n°145/1150

3. Maintenance Instructions

- Aircraft Maintenance Manual (Customized to aircraft configuration)
- Service Letters and Service Bulletins

V. Operational Suitability Data (OSD)
The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.032 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List (MMEL)
   The MMEL is defined in EMBRAER MMEL–145/6042 Original Revision or later approved revisions.

2. Flight Crew Data (FCD)
   The FCD is defined in EMBRAER Report No. 135-MSO-008 Original Revision dated 25 January 2017 or later approved revisions.
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ

I. General


II. Certification Basis

1. Reference Application Date for ANAC (CTA) Certification

<table>
<thead>
<tr>
<th>Aircraft</th>
<th>Reference Date</th>
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<tbody>
<tr>
<td>EMB-135ER, EMB-135LR</td>
<td>06 November 1997</td>
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<tr>
<td>EMB-135BJ</td>
<td>05 January 2000</td>
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2. ANAC (CTA) Certification Date

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<thead>
<tr>
<th>Aircraft</th>
<th>Certification Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMB-135ER, EMB-135LR with AE3007A3 engines</td>
<td>07 October 1999</td>
</tr>
<tr>
<td>EMB-135BJ</td>
<td>10 December 2001</td>
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3. EASA (JAA) Validation Application Date

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<tr>
<th>Aircraft</th>
<th>Reference Date</th>
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<tr>
<td>EMB-135ER</td>
<td>14 April 1998</td>
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<td>EMB-135LR</td>
<td>05 June 1998</td>
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<tr>
<td>EMB-135BJ</td>
<td>05 January 2000</td>
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4. EASA Certification Date

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<tr>
<th>Aircraft</th>
<th>Certification Date</th>
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<tr>
<td>EMB-135ER, EMB-135LR</td>
<td>03 November 1999</td>
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<td>(Date of first TC issuance within EU MS by CAA Finland; JAA recommendation 25.10.99)</td>
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<td>EMB-135BJ</td>
<td>02 August 2002</td>
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<tr>
<td>(Date of first TC issuance within EU MS by CAA Denmark; JAA recommendation 05.07.02)</td>
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5. ANAC (CTA) Certification Basis EMB-135ER, EMB-135LR

RBHA 25 Airworthiness Requirements for Aircraft Transport Category – corresponding to FAR Part 25 of Federal Aviation Administration, including amendment 25-1 through amendment 25-84 effective 10 July 1995.

- Amdt 25-87 Integral
- Section 25.1517 from Amdt 25-86
- Amdt 25-88 Integral
- Amdt 25-90 Integral
- Amdt 25-93 Integral
- Section 25.807 from Amdt 25-94
- Amdt 25-97 Integral
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ - continued

Special Conditions


Equivalent level of safety findings

- Use of 1 g stall criteria (FCAR HDE-01 - Various RBHA's)
- Cockpit under floor access hatch and rear fuselage electronic compartment access hatch (FCAR HES-03 - RBHA/FAR 25.783(f))
- Flight critical thrust reverser (FCAR HPR-03 - RBHA 25.933(a)(1)(ii))
- Digital only display of turbine engine high/intermediate pressure rotor speed (N2) (FCAR HPR-04-RBHA 25.1305(c))
- APU Instrumentation and Monitoring requirements (FCAR HPR-06 - RBHA/FAR 25.1305 and 25.1501(b)) and
- Fire detector in the tail pipe (FCAR HPR-01 - RBHA/FAR 25.1203(a)).

6. EASA Certification Basis EMB-135ER, EMB-135LR

JAR 25 Change 14 plus the Orange Paper 25/96/1 (effective on 19 April 1996).
JAR AWO change 2 (effective on 1 August 1996)
(‘The certification of Category II operations was accomplished Post TC’)
CS 25.851(a)(6) at Amdt. 18 in regards to the equipment installation and qualification of
Halon free hand-held Fire Extinguishers
Elect to comply: NPA 25B 240 Landing in abnormal configurations

7. Special Conditions EMB-135ER, EMB-135LR

Nuisance Stick Shaker Occurrences
INT/POL/25/2: Protection from the effects of HIRF
INT/POL/25/3: Protection from the effects of Lightning Strike, Direct Effects
INT/POL/25/4: Protection from the effects of Lightning Strike, Indirect Effects
INT/POL/25/6: Worn Brakes (Brake Testing)
INT/POL/25/8: Yawing Manoeuvring Conditions
INT/POL/25/9: Fuel Tank Crashworthiness
Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWIS (1)
Pilot Compartment View – Hydrophobic Coatings in lieu of Windshield Wipers
(cover CRI to FCAR HIS-08-145 stage 4 dated 23 April 2013)

8. Equivalent Safety Findings EMB-135ER, EMB-135LR

and Manoeuvre Capability
Note 1: CRI B-104 is associated to Special Condition:
‘Nuisance Stick Shaker Occurrences’
Lavatory Oxygen System Restoration
The following ANAC (CTA) ESF have been accepted by the JAA team as fully recording their position:

APU Instrumentation and Monitoring Requirements
Fire Detector in the Tail Pipe

See Note 2.3
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ - continued

9. Deviations (formerly referred to as “Exemptions”) EMB-135ER, EMB-135LR

None defined

10. Environmental Standards EMB-135ER, EMB-135LR

ICAO Annex 16:
Volume I: Noise (Amendment 5 dated 06 November 1997)

11. ANAC (CTA) Certification Basis EMB-135BJ

RBHA 25 (Airworthiness Requirements - Transport Category Aircraft), corresponding to US FAR Part 25 of Federal Aviation Administration effective 10 July 1995, including Amendment 25-1 through 25-84 effective 09 June 1995, plus the following requirements:

- Amdt. 25-85 Integral
- Amdt. 25-86, Section 25.1517
- Amdt. 25-88 Integral
- Amdt. 25-90 Integral
- Amdt. 25-91 Sections 25.331; 25.335(b)(2); 25.345; 25.351; 25.363; 25.371; 25.415; 25.491; 25.499 and 25.561
- Amdt. 25-93 Integral
- Amdt. 25-94 Section 25.807
- Amdt. 25-96 Paragraph 25.571(e)(1)
- Amdt. 25-97 Integral; and
- Amdt. 25-98 Integral

Special Conditions

The following special condition, established for previous EMB-145 models, is applicable for the EMB-135BJ model:

The following specific special conditions are applicable to the EMB-135BJ model:
- Interaction of systems and structures (fuel mismanagement) (RBHA/FAR 25.671 and 25.1309) – EMB-135BJ FCAR HES-01; and

Deviations (formerly referred to as “Exemptions”):
The following Deviation (formerly referred to as “Exemption”) is applicable to the EMB-135BJ model:

Equivalent level of safety findings

The following equivalent level of safety findings established for previous EMB-145 models are applicable for the EMB-135BJ model:
- Use of 1-g stall criteria (various RBHA/FAR) – EMB-135 FCAR HDE-01;
- Cockpit under floor access hatch and rear fuselage electronic compartment access hatch (RBHA/FAR 25.783(f)) – EMB-135 FCAR HES-03;
- Flight critical thrust reverser (RBHA/FAR 25.933(a)(1)(ii)) - EMB-135 FCAR HPR-03;
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ - continued

- Digital only display of turbine engine high/intermediate pressure rotor speed (N2) (RBHA/FAR 25.1305(c)) - EMB-135 FCAR HPR-04;
- APU instrumentation and monitoring requirements (RBHA/FAR 25.1305 and 25.1501(b)) EMB-135 FCAR HPR-06; and
- Fire detector in the tail pipe (RBHA/FAR 25.1203(a)) – EMB-135 FCAR HPR-01.

The following specific equivalent level of safety findings are applicable the EMB-135BJ model:
- Wheels-up landing (RBHA/FAR 25.721(b) and 25.963(d)) - EMB-135BJ FCAR HES-03;
- Checked maneuver loads (RBHA 21.21(b)(1) and RBHA/FAR 25.331(c)(2)) - EMB-135BJ FCAR HES-09; and
- Class C baggage compartment isolation (RBHA/FAR 25.855(h) and 25.857(c)) - EMB-135BJ FCAR HES-10.

See Section IV “Notes” – 2.2 for EMB-135BJ modified according to the DCA 0145-000-00020-2008.

12. EASA Certification Basis EMB-135BJ

JAR 25 Change 14 plus Orange Paper 25/96/1 (effective on 19 April 1996)
JAR AWO change 2 (effective on 01 August 1996)
CS 25.851(a)(6) at Amdt. 18 in regards to the equipment installation and qualification of Halon free hand-held Fire Extinguishers

See Section IV “Notes” – 2.2 for EMB-135BJ modified according to the DCA 0145-000-00020-2008.

13. Special Conditions EMB-135BJ (in addition to EMB-135ER/LR)

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<td>INT/POL/25/7: Rapid Decompression</td>
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<td>INT/POL/25/13: Towbarless Towing</td>
<td>D-1005</td>
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<tr>
<td>Access Door to Baggage Compartment Class C (Ref. Also FCAR HES-10)</td>
<td>D-106</td>
</tr>
<tr>
<td>Glass Screens of Displays/Monitors</td>
<td>D-14</td>
</tr>
<tr>
<td>INT/POL/25/12: Fuel Tank Safety</td>
<td>E-110</td>
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<tr>
<td>INT/POL/25/09: Fuel Tank Crashworthiness</td>
<td>D-107</td>
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<td>Fuel Tank Mounts</td>
<td>D-108</td>
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<td>Primary In-flight Ice Detection System</td>
<td>F-1026</td>
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<td>Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWIS</td>
<td>H-01</td>
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<td>Low Fuel Quantity Indication</td>
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See Section IV “Notes” – 2.2 for EMB-135BJ modified according to the DCA 0145-000-00020-2008.

14. Equivalent Safety Findings EMB-135BJ (in addition to EMB-135ER/LR)

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<td>Exit Locator Sign</td>
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<td>Width of Aisle</td>
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See Section IV “Notes” – 2.2 to 2.4 for EMB-135BJ modified according to the DCA 0145-000-00020-2008.

15. Deviations (formerly referred to as “Exemptions”) EMB-135BJ

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<th>Condition</th>
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<tr>
<td>Dynamic Seat Testing for Side Facing Sofa (Ref. FCAR HES-07) – Post TC item</td>
<td>C-106</td>
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See Section IV “Notes” – 2.2 to 2.4 for EMB-135BJ modified according to the DCA 0145-000-00020-2008.
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ - continued

16. Environmental Standards EMB-135BJ

ICAO Annex 16:
Volume I: Noise (Amendment 5 dated 06 November 1997)

See Section IV “Notes” – 2.2 to 2.4 for EMB-135BJ modified according to the DCA 0145-000-00020-2008.

17. Operational Suitability Requirements

17.1 OSD MMEL (as defined by CRI A-MMEL Issue 2, dated 14 December 2015)
JAR MMEL/MEL Amendment 1, Section 1

17.2 OSD FCD
CS-Flight Crew Data, Initial Issue dated 31 January 2014

III. Technical Characteristics and Operational Limitations

Two aft mounted turbo-fan engine, short to medium range, single aisle, T-tail, large category airplane.

1. EMB-135ER, EMB-135LR, EMB-135BJ

1.1 Type Design Definition

EMB-135ER, EMB-135LR:
Defined in JAA CRI A-106. The design standard is included in report 135-MS-310:
« EMB-135 Built Standard Definition for JAA certification ».

EMB-135BJ:
The design standard is included in report 135-MS-712:
« EMB-135BJ Built Standard Definition for JAA certification ».

1.2 Engines

EMB-135ER, EMB-135LR:
Two (2) Rolls-Royce Corp. USA AE3007A3 or
Two (2) Rolls-Royce Corp. USA AE3007A1/3 turbofan engines.

EMB-135BJ:
Two (2) Rolls-Royce Corp. USA AE3007A1E or
Two (2) Rolls-Royce Corp. US AE3007A2 turbofan engines (see Section IV “Notes” – 2.2)

1.2.1 Engine Limits:

See Section IV “Notes” – 1.1

1.3 Fuel

Eligible Fuels see Section IV “Notes” – 1.3
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ - continued

Fuel Capacity:

**EMB-135ER:**
Maximum usable fuel of 5146 litres (two tanks with 2573 litres each)
Unusable fuel of 54 l (27 l per tank)

**EMB-135LR:**
Maximum usable fuel of 6396 litres (two tanks with 3198 litres each)
Unusable fuel of 44 l (22 l per tank)

**EMB-135BJ “Legacy 600”** *) see Section IV “Notes” – 2.1:
Maximum usable fuel of 10264 liters (two forward fuselage tanks of 1112 liters at +8440 mm, two wing tanks of 3198 liters at 13147 mm and two aft fuselage tanks of 822 liters at +20293 mm).
Unusable fuel of 106 liters (forward tanks 27 liters, wing tanks 44 liters and aft tanks 35 liters)

**EMB-135 BJ “Legacy 650”:** with SB/Factory Mod per DCA 145-000-00020/2008
See Section IV “Notes” – 2.2

Maximum usable fuel of 11 681 liters (two forward tanks of 1 143 liters at +8 439 mm, two wing tanks of 3 365 liters at +13 178 mm, two aft tanks of 825 liters at +20 304 mm and one ventral tank of 1 015 liters at 15 753 mm).
Unusable fuel of 167.2 liters (forward tanks 23 liters, wing tanks 97 liters, aft tanks 22 liters and ventral tank 25.2 liters).

1.4 Limit Speeds

Refer to approved Airplane Flight Manual.

1.5 Centre of Gravity Range

Refer to approved Airplane Flight Manual.

1.6 Maximum Certified Weights

<table>
<thead>
<tr>
<th>MODEL</th>
<th>EMB-135ER</th>
<th>EMB-135 LR</th>
<th>EMB-135BJ 1)</th>
<th>EMB-135BJ 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxi and ramp</td>
<td>19090 kg</td>
<td>20090 kg</td>
<td>22570 kg</td>
<td>24370 kg</td>
</tr>
<tr>
<td>Take-off</td>
<td>18990 kg</td>
<td>19990 kg</td>
<td>22500 kg 2)</td>
<td>24300 Kg</td>
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<tr>
<td>Landing</td>
<td>18500 kg</td>
<td>18500 kg</td>
<td>18500 kg</td>
<td>20000 kg</td>
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<tr>
<td>Zero fuel</td>
<td>15600 kg</td>
<td>16000 kg</td>
<td>16000 kg</td>
<td>16400 kg</td>
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<tr>
<td>16000 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) see Section IV “Notes” – 2.1

2) For airplanes Pos-mod. SB 145LEG-25-0078 the MTOW will be 22 000 kg (to increase again the MTOW up to 22 500 kg, the SB 145LEG-25-0079 must be incorporated)

3) For airplanes with the DCA 145-00-00020-2008 incorporated.

4) For airplanes Post-Mod. SB 145-00-0025 or with an equivalent modification factory incorporated, the MZFW is 16000 kg.

1.7 Minimum Flight Crew:

Two (2): Pilot and Co-pilot for all types of flights
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ – continued

1.8 Maximum Seating Capacity:

EMB-135ER, EMB-135LR: 37
EMB-135BJ: 19

1.9 Cargo compartment loading

*EMB-135ER, EMB-135LR:*

<table>
<thead>
<tr>
<th>Location</th>
<th>Class</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Middle</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Rear</td>
<td>D or C</td>
<td>9.2 m³ (325 ft³)</td>
</tr>
<tr>
<td>Underfloor</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

*EMB-135BJ:*

<table>
<thead>
<tr>
<th>Location</th>
<th>Class</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Middle</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Rear</td>
<td>C</td>
<td>6.8 m³ (240 ft³)</td>
</tr>
<tr>
<td>Underfloor</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

1.10 Environmental Flight Envelope

Refer to approved Airplane Flight Manual.

1.11 Other Limitations

Refer to approved Airplane Flight Manual.

1.12 Auxiliary Power Unit (APU)

*EMB-135ER, EMB-135LR:*

One (1) SUNDSTRAND T-62T-40C11 or One (1) T-62T-40C14 model

*EMB-135BJ:*

One (1) SUNDSTRAND T-62T-40C14 model

For APU limits see see Section IV “Notes”– 1.2

1.13 Oils

Eligible Fuels see Section IV “Notes”– 1.4

Oil Capacity:

11.4 litres in each nacelle at +18 787mm

1.14 Equipment

*EMB-135ER, EMB-135LR:*

The approved equipment is listed in the EMBRAER technical report: 145-MS-300.

*EMB-135BJ:*)
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ - continued

The approved equipment is listed in the EMBRAER technical report 135-MS-705.

1.15 All Weather Capabilities

   CAT II

1.16 Wheels and Tyres

   See Section IV “Notes” – 1.5

1.17 Hydraulics

   Fluid specifications: SAE AS1241 Type IV

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)

   Airplanes must be operated according to the following EASA approved AFMs revision original (or later approved revisions):
   - EMB-135ER, EMB-135LR: AFM 135/1283
   - EMB-135BJ: AFM 135/1541

2. Instructions for Continued Airworthiness - Airworthiness Limitations

   EMB-135ER, EMB-135LR:
   - The Airworthiness limitations Requirements are listed in the “Appendix 2”, "Airworthiness Limitation Requirements" of the document MRB n°145/1150
   - The Certification Maintenance Requirements are listed in the "Appendix 1", "Airworthiness Limitation Requirements", of the document MRB n°145/1150.

   EMB-135BJ:
   - The Airworthiness limitations Requirements are listed in the "Appendix 2", "Airworthiness Limitation Requirements" of the document MPG-1483
   - The Certification Maintenance Requirements are listed in the "Appendix 1", "Airworthiness Limitation Requirements", of the document MPG-1483.

3. Maintenance Instructions

   EMB-135ER, EMB-135LR:
   - Aircraft Maintenance Manual (Customised to aircraft configuration)
   - Structure Repair Manual : SRM 145/1422
   - Service Letters and Service Bulletins

   EMB-135BJ:
   - Aircraft Maintenance Manual (Customised to aircraft configuration)
   - Service Letters and Service Bulletins
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ - continued

V. Operational Suitability Data (OSD)
The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.032 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List (MMEL)
The MMEL is defined in EMBRAER MMEL–145/6042 Original Revision or later approved revisions.

2. Flight Crew Data (FCD)
The FCD is defined in EMBRAER Report No. 135-MSO-008 Original Revision dated 25 January 2017 or later approved revisions.
## SECTION 4: NOTES (ALL MODELS)

1. All models

1.1 Engine Limits

### Engine Models AE3007A and AE3007A1/1 Limits

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>-1000ft Static Thrust (LB)</th>
<th>Rotor Speed (%) N1</th>
<th>Rotor Speed (%) N2</th>
<th>Temperature Limits (°C) ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Off</td>
<td>7580</td>
<td>99.9</td>
<td>102.4</td>
<td>921</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>6820</td>
<td>99.9</td>
<td>102.4</td>
<td>868</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
<td></td>
<td>57 to 102.4</td>
<td></td>
</tr>
<tr>
<td>Starting</td>
<td></td>
<td></td>
<td></td>
<td>800</td>
</tr>
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</table>

### Engine Model AE3007A1 Limits

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>-1000ft Static Thrust (lb)</th>
<th>Rotor Speed (%) N1</th>
<th>Rotor Speed (%) N2</th>
<th>Temperature Limits (°C) ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Off</td>
<td>7580</td>
<td>99.9</td>
<td>102.4</td>
<td>948</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>6820</td>
<td>99.9</td>
<td>102.4</td>
<td>901</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
<td></td>
<td>57 to 102.4</td>
<td></td>
</tr>
<tr>
<td>Starting</td>
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<td></td>
<td></td>
<td>800</td>
</tr>
</tbody>
</table>

### Engine Model AE3007A3 Limits

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>-1000ft Static Thrust (lb)</th>
<th>Rotor Speed (%) N1</th>
<th>Rotor Speed (%) N2</th>
<th>Temperature Limits (°C) ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Off</td>
<td>7201</td>
<td>100</td>
<td>102.5</td>
<td>948</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>6820</td>
<td>100</td>
<td>102.5</td>
<td>901</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
<td>100</td>
<td>102.5</td>
<td>948</td>
</tr>
<tr>
<td>Starting</td>
<td></td>
<td>100</td>
<td>102.5</td>
<td>800</td>
</tr>
</tbody>
</table>

### Engine Model AE3007A1/3 Limits

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>-1000ft Static Thrust (lb)</th>
<th>Rotor Speed (%) N1</th>
<th>Rotor Speed (%) N2</th>
<th>Temperature Limits (°C) ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Off</td>
<td>7580</td>
<td>100</td>
<td>102.5</td>
<td>948</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>6820</td>
<td>100</td>
<td>102.5</td>
<td>901</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
<td>100</td>
<td>102.5</td>
<td>948</td>
</tr>
<tr>
<td>Starting</td>
<td></td>
<td>100</td>
<td>102.5</td>
<td>800</td>
</tr>
</tbody>
</table>

*Continued on next page*
### Engine Model AE3007A1P Limits

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>-1000ft Static Thrust (lb)</th>
<th>Rotor Speed (%) N1</th>
<th>Rotor Speed (%) N2</th>
<th>Temperature Limits (°C) ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Off</td>
<td>8338</td>
<td>100</td>
<td>102.5</td>
<td>948</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>6852</td>
<td>100</td>
<td>102.5</td>
<td>901</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
<td>53.6 to 102.5</td>
<td></td>
<td>800</td>
</tr>
<tr>
<td>Starting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Engine Model AE3007A1E Limits

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>-1000ft Static Thrust (lb)</th>
<th>Rotor Speed (%) N1</th>
<th>Rotor Speed (%) N2</th>
<th>Temperature Limits (°C) ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Off</td>
<td>8895</td>
<td>100</td>
<td>103.8</td>
<td>970</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>7354</td>
<td>100</td>
<td>103.8</td>
<td>935</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
<td>57.0 to 103.8</td>
<td></td>
<td>800</td>
</tr>
<tr>
<td>Starting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Legacy 650 (BJ enhanced): Engine Model AE3007A2 Limits]

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>-1000ft Static Thrust (lb)</th>
<th>Rotor Speed (%) N1</th>
<th>Rotor Speed (%) N2</th>
<th>Temperature Limits (°C) ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Off</td>
<td>9320</td>
<td>97.7%</td>
<td>105.0%</td>
<td>994</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>7990</td>
<td>97.7%</td>
<td>105.0%</td>
<td>937</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting</td>
<td></td>
<td></td>
<td></td>
<td>800</td>
</tr>
</tbody>
</table>

For other engine limitations, see FAA TCDS TE6CH and Airplane Flight Manual.

### 1.2 APU Limits (SUNDSTRAND T-62-40C11 and T-62-40C14)

<table>
<thead>
<tr>
<th>MAX RPM</th>
<th>MAX EGT Start</th>
<th>MAX EGT Steady State (Limited to 5 minutes)</th>
<th>MAX EGT Running (normal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>108 %</td>
<td>884 °C (1624°F)</td>
<td>717°C (1323°F)</td>
<td>680°C (1256 °F)</td>
</tr>
</tbody>
</table>

### 1.3 Eligible Fuel


### 1.4 Eligible Oil

MIL-L-7808 or Mil-L-23699

### 1.5 Wheels and Tyres

H30 x 9.50-14 (Main); 19.5 x 6.75-8 (Nose)
SECTION 4: NOTES (ALL MODELS) - continued

EMB-145LR, EMB-145LU, EMB-135BJ with SB/Mod per DCA 145-000-00020/2008:
H30 x 9.50-16 (Main); 19.5 x 6.75-8 (Nose)

1.6 Ditching

All EMB-145 () and EMB-135 () models are not approved for ditching

2. EMB-135BJ

2.1 EMB-135BJ below S/N 145625

*Engines: Two Rolls-Royce Corp. USA AE3007A1P turbofan engines

**Maximum certified weights**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>EMB-135BJ below SN 145625</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxi and ramp</td>
<td>22270 kg</td>
</tr>
<tr>
<td>Take-off</td>
<td>22200 kg*</td>
</tr>
<tr>
<td>Landing</td>
<td>18500 kg</td>
</tr>
<tr>
<td>Zero fuel</td>
<td>16000 kg</td>
</tr>
</tbody>
</table>

*For airplanes Pos-mod. SB 145LEG-25-0078 the MTOW will be 22 000 kg (to increase again the MTOW up to 22 200 kg, the SB 145LEG-25-0079 must be incorporated)

**Fuel Capacity:**
Maximum usable fuel of 10152 liters (two forward fuselage tanks of 1056 liters at +8440 mm, two wing tanks of 3198 liters at 13147 mm and two aft fuselage tanks of 822 liters at +20293 mm). Unusable fuel of 106 liters (forward tanks 27 liters, wing tanks 44 liters and aft tanks 35 liters).

2.2 EMB-135BJ modified with new Engines AE3007A2, MTOW increase and more fuel tank according to the DCA 0145-000-00020-2008/EASA (EMB-135BJ PERFORMANCE ENHANCEMENTS). The EMB-135BJ with this modification embodied is commercially known as Legacy 650.

*Engines: Two Rolls-Royce Corp. USA AE3007A2 turbofan engines

**Maximum certified weights**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>EMB-135BJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxi and ramp</td>
<td>24 370 kg</td>
</tr>
<tr>
<td>Take-off</td>
<td>24 300 kg</td>
</tr>
<tr>
<td>Landing</td>
<td>20 000 kg</td>
</tr>
<tr>
<td>Zero fuel</td>
<td>16 400 kg</td>
</tr>
</tbody>
</table>

*For airplanes Pos-mod. SB 145LEG-25-0078 the MTOW will be 22 000 kg (to increase again the MTOW up to 24 300 kg, the SB 145LEG-25-0079 must be incorporated)
SECTION 4: NOTES (ALL MODELS) - continued

Fuel Capacity:

Maximum usable fuel of 11,681 liters (two forward tanks of 1,143 liters at +8,439 mm, two wing tanks of 3,365 liters at +13,178 mm, two aft tanks of 825 liters at +20,304 mm and one ventral tank of 1,015 liters at 15,753 mm).

Unusable fuel of 167.2 liters (forward tanks 23 liters, wing tanks 97 liters, aft tanks 22 liters and ventral tank 25.2 liters).

2.3 Special Condition H-01 Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWIS is not applicable to EMB-135BJ.

For areas affected by Major Change Modification 0145-000-00020-2008, CS 25 Amdt 5 EWIS requirements are applicable.

2.4 Certification Basis for EMB-135BJ with DCA 0145-000-00020-2008/EASA (EMB-135BJ PERFORMANCE ENHANCEMENTS)

All Special Conditions, Deviations (formerly referred to as “Exemptions”), and Equivalent Safety Findings as noted for the EMB-135BJ are applicable.

Following additional requirements apply:

Special Condition: Low Fuel Quantity F-112

Elect to comply: Noise Certification iaw Stage 4 N-1

For the areas affected by the Major Change Modification 0145-000-00020-2008 following requirements apply at CS-25 Amdt 5:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Requirement</th>
<th>Requirement</th>
<th>Requirement</th>
<th>Requirement</th>
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<tbody>
<tr>
<td>25.1</td>
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<td>---</td>
<td>25.21</td>
<td>25.23</td>
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<tr>
<td>25.25</td>
<td>25.27</td>
<td>25.29</td>
<td>25.31</td>
<td>25.101</td>
</tr>
<tr>
<td>25.113</td>
<td>25.115</td>
<td>25.117</td>
<td>25.119</td>
<td>25.121</td>
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<tr>
<td>25.177</td>
<td>25.181</td>
<td>25.201</td>
<td>---</td>
<td>25.207</td>
</tr>
<tr>
<td>25.231 (a)</td>
<td>25.233</td>
<td>25.235</td>
<td>25.237 (a)</td>
<td>25.251</td>
</tr>
<tr>
<td>25.253</td>
<td>25.255</td>
<td>25.301</td>
<td>25.303</td>
<td>25.305</td>
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<table>
<thead>
<tr>
<th>TCDS No.: IM.A.032</th>
<th>Embraer EMB-145</th>
<th>Date: 31 Jan 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.351 25.361 (b)</td>
<td>25.363</td>
<td>25.365</td>
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<td>25.371 25.373 (a)</td>
<td>25.391</td>
<td>25.393</td>
</tr>
<tr>
<td>25.397 25.399 (a)(1)(b)</td>
<td>25.409 (c)</td>
<td>25.415 (a)(1)(2)(b)</td>
</tr>
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<td>25.479 (a)(c)(d)</td>
<td>25.481 (a)(c)</td>
<td>25.483</td>
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<td>25.609</td>
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<td>25.631 25.651</td>
<td>25.657</td>
<td>25.671 (a)(b)(c)</td>
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<td>25.675</td>
<td>677 (c)</td>
<td>25.683</td>
</tr>
<tr>
<td>25.693</td>
<td>25.697</td>
<td>25.699</td>
</tr>
<tr>
<td>25.775 25.777 (a)(b)(d)</td>
<td>25.785 (b)(c)(f)(i)(3)</td>
<td>25.787 (a)(b)</td>
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<td>25.959</td>
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<td>25.1017</td>
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<td>25.1103 (c)(d)</td>
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Reversions to earlier amendment levels as listed below have been granted iaw 21A.101:

25.203 JAR 25 OP 96/1
25.701 JAR 25 Chg 14
25.933 JAR 25 Chg 16
25.1303 JAR 25 Chg 14
SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AFM  Airplane Flight Manual
AMC  Acceptable Means of Compliance
ANAC  Agência Nacional De Aviação Civil (CAA Brazil)
APU  Auxiliary Power Unit
AWO  All Weather Operations
CRI  Certification Review Item
CS  Certification Specification
EASA  European Union Aviation Safety Agency
ES(F)  Equivalent Safety (Finding)
EWIS  Enhanced Wiring Interconnection System
FAA  Federal Aviation Administration
FAR  Federal Aviation Regulation
HIRF  High Intensity Radiated Field
ICA  Instructions for Continued Airworthiness
ICAO  International Civil Aviation Organization
JAA  Joint Aviation Authorities
JAR  Joint Aviation Requirements
MRB  Maintenance Review Board
NPA  Notice of Proposed Amendment
S/N  Serial Number
SB  Service Bulletin
SC  Special Condition
TC  Type Certificate
TCDS  Type Certificate Data Sheet

II. Type Certificate Holder Record

Emb raer S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

Before 1 January 2022:
Yaborã Indústria Aeronáutica S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

Before 31 January 2020:
Emb raer S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil
### Before January 2011:
Empresa Brasileira de Aeronáutica SA  
Av. Brig. Faria Lima. 2170  
12227-901 São Jose dos Campos SP  
Brazil

**SECTION: ADMINISTRATIVE - continued**

### III. Change Record

*(starting with Issue 04)*

<table>
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<th>Issue</th>
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<th>Changes</th>
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| Issue 04 | 07/10/2010 | Implemented changes due to validation of DCA 0145-000-00020-2008/EASA “EMB-135BJ Performance Enhancements”  
Included Generic Special Condition CRI H-1 Enhanced Airworthiness Programme for Aeroplane Systems (ICA on EWIS)  
Low Fuel Quantity Indication CRI F-112 | Issue 01, 28/02/05 |
| Issue 05 | 27/10/2010 | Correction of Ramp weight for EMB-145 LR (A1/1 engines)                                                                                               |                           |
| Issue 06 | 03/08/2012 | EMB-135ER MZFW increased to 16000Kg for airplanes Post-Mod. SB 145-00-0025 or with an equivalent modification factory incorporated  
Added Note regarding applicability of Special Condition CRI H-1 for EMB-135BJ  
Added Special Condition D-14 (Glass Screens of Displays/Monitors) for EMB-135BJ |                           |
| Issue 07 | 08/05/2013 | Fuel capacity correction for EMB-145MP & EMB-145 MK  
Rewording of Note 2.3 concerning applicability of SC H-01 to EMB-135BJ  
Section 3 – 1.3: correction of EMB-135ER Maximum Design weights  
Section 3 – 1.18: Maintenance Instructions added references and typo corrections  
Section 4 – 1.1: Engine limits corrections |                           |
| Issue 08 | 17/12/2015 | Section 2, Chapter II.11  
- Certification Basis for OSD introduced  
Section 2, Chapter IV  
- New chapter for “Operating and Service Instructions” introduced (information is not changed)  
Section 2, Chapter V  
- New chapter for “Operational Suitability Data” introduced  
Section 3, Chapter II.17  
- Certification Basis for OSD introduced  
Section 3, Chapter IV  
- New chapter for “Operating and Service Instructions” introduced (information is not changed) |                           |
## Table of Issues and Dates

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<td>- New chapter for &quot;Operational Suitability Data&quot; introduced</td>
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<td>- Included CRI F-38 - Lavatory Oxygen System Restoration</td>
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<td>- Updated Maintenance Instructions references.</td>
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<td>Issue 09</td>
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<td>Section 2, Chapter II.7</td>
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<td>- Additional reference to Special Condition D-15 introduced</td>
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<td>Transfer of Type Certificate Holder from “Embraer S.A.” to “Yaborã Indústria Aeronáutica S.A.”</td>
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<td>EASA name reference changed to “European Union Aviation Safety Agency”</td>
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<td>Issue 12</td>
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<td>TC Holder Transfer Update</td>
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--End of TCDS IM.A.032--