



European Aviation Safety Agency

EASA

**TYPE-CERTIFICATE
DATA SHEET**

No. EASA.IM.A.032

**for
EMB-145**

**Type Certificate Holder:
Embraer S.A.**

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

For Models:	EMB-145	EMB-145EP	EMB-145MP	EMB-135ER
	EMB-145ER	EMB-145LR	EMB-145MK	EMB-135LR
	EMB-145EU	EMB-145LU		EMB-135BJ

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TABLE OF CONTENT

TABLE OF CONTENT	3
SECTION 1: GENERAL (ALL MODELS)	4
SECTION 2: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK	5
I. General.....	5
II. Certification Basis	5
III. Technical Characteristics and Operational Limitations.....	7
IV. Operating and Service Instructions.....	9
V. Operational Suitability Data (OSD)	10
SECTION 3: EMB-135ER, EMB-135LR, EMB-135BJ	11
I. General.....	11
II. Certification Basis	11
III. Technical Characteristics and Operational Limitations.....	15
IV. Operating and Service Instructions.....	18
V. Operational Suitability Data (OSD)	19
SECTION 4: NOTES (ALL MODELS)	20
SECTION: ADMINISTRATIVE	26
I. Acronyms and Abbreviations	26
II. Type Certificate Holder Record.....	26
III. Change Record.....	27

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

**SECTION 2: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR,
EMB-145LU, EMB-145MP, EMB-145MK**

I. General

1. Aeroplane: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK

II. Certification Basis

1. Reference Application Date for ANAC (CTA) Certification

EMB-145, EMB-145ER, EMB-145EU, EMB-145EP	02 June 1992
EMB-145LR, EMB-145LU, EMB-145MP	10 October 1997
EMB-145MK	28 February 2000

2. CTA Certification Date

EMB-145, EMB-145ER, EMB-145EU, EMB-145EP	29 November 1996
EMB-145LR, EMB-145LU, EMB-145MP	20 April 1998
EMB-145MK	12 June 2000

3. EASA (JAA) Validation Application Date

EMB-145, EMB-145ER, EMB-145EU	23 November 1993
EMB-145EP	12 August 1997
EMB-145LR	10 October 1997
EMB-145LU	08 March 1999
EMB-145MP	09 February 1999
EMB-145MK	03 March 2000

4. EASA Certification Date

EMB-145, EMB-145ER, EMB-145EU	27 May 1997
(Date of first TC issuance within EU MS by DGAC Belgium & INAC Portugal; JAA recommendation 20.05.97)	
EMB-145EP	25 November 1997
(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

SECTION 2: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK - continued

6. EASA Certification Basis

JAR 25 Change 14, dated 27 May 1994
JAR AWO Change 2
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 EWIS CRI 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
Volume I: Noise, (third edition, July 1993),
Volume II: Emissions, (first edition 1981, revised July 1993)

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

SECTION 2: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK – continued

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-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK

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 AE3007A1/1 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)

SECTION 2: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK – continued

EMB-145MP, EMB-145MK,:

Maximum usable fuel of 5146 l (two tanks of 2573 l at +15153 mm),

Unusable fuel of 54l (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

MODEL	EMB-145	EMB-145EU	EMB-145ER	EMB-145EP	EMB-145LR (A1/1 engines)
Taxi and ramp	19300 kg	20090 kg	20700 kg	21090 kg	22100 kg
Take-off	19200 kg	19990 kg	20600 kg	20990 kg	22000 kg**
Landing	18700 kg	18700 kg	18700 kg	18700 kg	19300 kg
Zero fuel	17100 kg	17100 kg	17100 kg*	17100 kg*	17900 kg

MODEL	EMB-145LR (A1 engines)	EMB-145LU	EMB-145 MP	EMB-145 MK
Taxi and ramp	22100 kg	22090 kg	21090 kg	20090 kg
Take-off	22000 kg**	21990 kg	20990 kg	19990 kg
Landing	19300 kg	19300 kg	19300 kg	19300 kg
Zero fuel	17900 kg	17900 kg	17900 kg	17900 kg

*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

Location	Class	Volume
Front	NA	
Middle	NA	
Rear	D or C	9.2 m ³ (325 ft ³)
Underfloor	NA	

1.10 Environmental Flight Envelope

Refer to approved Airplane Flight Manual.

SECTION 2: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK – continued

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

SECTION 2: EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145LR, EMB-145LU, EMB-145MP, EMB-145MK – continued

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European 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

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

II. Certification Basis

1. Reference Application Date for ANAC (CTA) Certification

EMB-135ER, EMB-135LR	06 November 1997
EMB-135BJ	05 January 2000

2. ANAC (CTA) Certification Date

EMB-135ER, EMB-135LR with AE3007A1/3 engines	11 June 1999
EMB-135ER, EMB-135LR with AE3007A3 engines	07 October 1999
EMB-135BJ	10 December 2001

3. EASA (JAA) Validation Application Date

EMB-135ER	14 April 1998
EMB-135LR	05 June 1998
EMB-135BJ	05 January 2000

4. EASA Certification Date

EMB-135ER, EMB-135LR	03 November 1999
<small>(Date of first TC issuance within EU MS by CAA Finland; JAA recommendation 25.10.99)</small>	

EMB-135BJ	02 August 2002
<small>(Date of first TC issuance within EU MS by CAA Denmark; JAA recommendation 05.07.02)</small>	

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
- Sections 25.331, 25.335(b)(2), 25.345, 25.351, 25.363, 25.371, 25.415, 25.491, 25.499 and 25.561 from Amdt 25-91
- 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

- High Intensity Radiated Fields (HIRF) Protection (FCAR HSI-01 - RBHA/FAR 21.16, 25.1309, 25.1333 and 25.1431).

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)

Elect to comply: NPA 25B 240 Landing in abnormal configurations

CRI B-110

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

Nuisance Stick Shaker Occurrences	CRI B-122
INT/POL/25/2: Protection from the effects of HIRF	CRI F-101
INT/POL/25/3: Protection from the effects of Lightning Strike, Direct Effects	CRI F-102
INT/POL/25/4: Protection from the effects of Lightning Strike, Indirect Effects	CRI F-103
INT/POL/25/6: Worn Brakes (Brake Testing)	CRI F-107
INT/POL/25/8: Yawing Manoeuvring Conditions	CRI C-101
INT/POL/25/9: Fuel Tank Crashworthiness	CRI C-102
Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWIS ⁽¹⁾	CRI H-01
Pilot Compartment View – Hydrophobic Coatings in lieu of Windshield Wipers (cover CRI to FCAR HIS-08-145 stage 4 dated 23 April 2013)	CRI D-15

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

NPA 25B-215 (dated June 1995): Stall and Stall Warning Speeds
and Manoeuvre Capability

CRI B-104

Note 1: CRI B-104 is associated to Special Condition:

'Nuisance Stick Shaker Occurrences'

(CRI B-122)

Lavatory Oxygen System Restoration

CRI F-38

The following ANAC (CTA) ESF have been accepted by the JAA team as fully recording their position:

APU Instrumentation and Monitoring Requirements

(FCAR HPR-06)

Fire Detector in the Tail Pipe

(FCAR HPR-01)

¹ 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)

Volume II: Emissions (Amendment 3 to the second edition dated 20 March 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:

- High intensity radiated fields (HIRF) protection (RBHA 21.16, RBHA/FAR 25.1309, 25.1333 and 25.1431) - EMB-135 FCAR HSI-01.

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
- Ventral fuel tank penetration (RBHA/FAR 21.16, 25.963(e)) - EMB-135BJ FCAR HES-04.

Deviations (formerly referred to as “Exemptions”):

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

- Dynamic Test Requirement for Side-Facing Divans (sofa) (RBHA 25.785 (b) – EMB-135BJ FCAR HES-07.

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
- **Width of Aisle (RBHA/14 CFR Part 25.815) – EMB-135BJ FCAR HES-14**

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)

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)

INT/POL/25/7: Rapid Decompression	C-1005
INT/POL/25/13: Towbarless Towing	D-1005
Access Door to Baggage Compartment Class C (Ref. Also FCAR HES-10)	D-106
Glass Screens of Displays/Monitors	D-14
INT/POL/25/12: Fuel Tank Safety	E-110
INT/POL/25/09: Fuel Tank Crashworthiness	D-107
Fuel Tank Mounts	D-108
Primary In-flight Ice Detection System	F-1026
Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWIS	H-04
Low Fuel Quantity Indication	F-112

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)

Location of Rear Auxiliary Fuel Tank Inside Fuselage	E-111
Exit Locator Sign	D-109
Width of Aisle	D-16

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

Dynamic Seat Testing for Side Facing Sofa (Ref. FCAR HES-07) – Post TC item	C-106
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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)

Volume II: Emissions (Amendment 3 to the second edition dated 20 March 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

MODEL	EMB-135ER	EMB-135 LR	EMB-135BJ ¹⁾	EMB-135BJ ³⁾
Taxi and ramp	19090 kg	20090 kg	22570 kg	24370 kg
Take-off	18990 kg	19990 kg	22500 kg ²⁾	24300 Kg
Landing	18500 kg	18500 kg	18500 kg	20000 kg
Zero fuel	15600 kg 16000 kg ⁴⁾	16000 kg	16000 kg	16400 kg

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:

Location	Class	Volume
Front	NA	
Middle	NA	
Rear	D or C	9.2 m ³ (325 ft ³)
Underfloor	NA	

EMB-135BJ:

Location	Class	Volume
Front	NA	
Middle	NA	
Rear	C	6.8 m ³ (240 ft ³)
Underfloor	NA	

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)
- Structure Repair Manual: SRM-1422, -2024, -3733
- 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 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

Operating Conditions	-1000ft Static Thrust (LB)	Rotor Speed (%) N1	Rotor Speed (%) N2	Temperature Limits (°C) ITT
Take Off	7580	99.9	102.4	921
Maximum Continuous	6820	99.9	102.4	868
Ground			57 to 102.4	
Starting				800

Engine Model AE3007A1 Limits

Operating Conditions	-1000ft Static Thrust (lb)	Rotor Speed (%) N1	Rotor Speed (%) N2	Temperature Limits (°C) ITT
Take Off	7580	99.9	102.4	948
Maximum Continuous	6820	99.9	102.4	901
Ground			57 to 102.4	
Starting				800

Engine Model AE3007A3 Limits

Operating Conditions	-1000ft Static Thrust (lb)	Rotor Speed (%) N1	Rotor Speed (%) N2	Temperature Limits (°C) ITT
Take Off	7201	100	102.5	948
Maximum Continuous	6820	100	102.5	901
Ground		100	102.5	948
Starting		100	102.5	800

Engine Model AE3007A1/3 Limits

Operating Conditions	-1000ft Static Thrust (lb)	Rotor Speed (%) N1	Rotor Speed (%) N2	Temperature Limits (°C) ITT
Take Off	7580	100	102.5	948
Maximum Continuous	6820	100	102.5	901
Ground		100	102.5	948
Starting		100	102.5	800

Continued on next page

SECTION 4: NOTES (ALL MODELS) - continued

Engine Model AE3007A1P Limits

Operating Conditions	-1000ft Static Thrust (lb)	Rotor Speed (%) N1	Rotor Speed (%) N2	Temperature Limits (°C) ITT
Take Off	8338	100	102.5	948
Maximum Continuous	6852	100	102.5	901
Ground			53.6 to 102.5	
Starting				800

Engine Model AE3007A1E Limits

Operating Conditions	-1000ft Static Thrust (lb)	Rotor Speed (%) N1	Rotor Speed (%) N2	Temperature Limits (°C) ITT
Take Off	8895	100	103.8	970
Maximum Continuous	7354	100	103.8	935
Ground			57.0 to 103.8	
Starting				800

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

Operating Conditions	-1000ft Static Thrust (lb)	Rotor Speed (%) N1	Rotor Speed (%) N2	Temperature Limits (°C) ITT
Take Off	9320	97,7%	105,0%	994
Maximum Continuous	7990	97,7%	105,0%	937
Ground				
Starting				800

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

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

MAX RPM	MAX EGT Start	MAX EGT Steady State (Limited to 5 minutes)	MAX EGT Running (normal)
108 %	884 °C (1624°F)	717°C (1323°F)	680°C (1256 °F)

1.3 Eligible Fuel

ASTM Specification D-1655 Jet A, Jet A1 and JP-8. (MIL-T 83133A)

1.4 Eligible Oil

MIL-L-7808 or Mil-L-23699

1.5 Wheels and Tyres

EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB-145MP, EMB-145MK, EMB-135ER, EMB-135LR, EMB-135BJ:

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

MODEL	EMB-135BJ below SN 145625
Taxi and ramp	22270 kg
Take-off	22200 kg*
Landing	18500 kg
Zero fuel	16000 kg

*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

Taxi and ramp	24 370 kg
Take-off	24 300 kg
Landing	20 000 kg
Zero fuel	16 400 kg

*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:

25.1	---	---	25.21	25.23
25.25	25.27	25.29	25.31	25.101
25.103	25.105	25.107	25.109	25.111 (a)(b)(c)(d)
25.113	25.115	25.117	25.119	25.121
25.123 (a)(b)	25.125 (a)(b)(c) (f)(g)	25.143	25.145	25.147 (a)(c)(d)(f)
25.149 (a)(b)(c)(d) (e)(f)(h)	25.161 (a)(b)(c)(d)	25.171	25.173	25.175
25.177	25.181	25.201	---	25.207
25.231 (a)	25.233	25.235	25.237 (a)	25.251
25.253	25.255	25.301	25.303	25.305
25.307	25.321	25.331	25.333	25.335 (a)(b)(c) (d)(1)(2)(e)(1)(3)(f)
---	25.341	25.343 (a)(b)(3)	25.345 (a)(b)(2)(d)	25.349

25.351	25.361 (b)	25.363	25.365	25.367
25.371	25.373 (a)	25.391	25.393	25.395
25.397	25.399 (a)(1)(b)	25.409 (c)	25.415 (a)(1)(2)(b)	25.427 (a) (b) (c)
25.445 (a)	25.457	25.459	25.471	25.477
25.479 (a)(c)(d)	25.481 (a)(c)	25.483	25.485	25.487
25.489	25.491	---	25.495	25.499 (a)(b)(c)(e)
25.503	25.507 (a)(b)	25.509 (a)(1)(2) (3)(ii)(c)(d)	25.511	---
25.561	25.571	25.581	25.601	25.603
---	25.607	25.609	25.611	25.613
25.619	25.621	25.623	25.625	25.629
25.631	25.651	25.657	25.671 (a)(b)(c)	25.672 (b)(c)
25.675	677 (c)	25.683	25.685	25.689
25.693	25.697	25.699	---	25.703
25.721	25.729 (a)(1) (b)(c)(d)(e)(f)	25.731 (a)(b)(c)(d)	25.733 (b)(c)	25.735 (a)(d)(e)(1) (f)(g) (h)(1)(i)(k)
25.775	25.777(a)(b)(d)	25.785 (b)(c) (f)(1)(3)	25.787 (a)(b)	25.789 (a)
25.855 (j)	25.863	25.865	25.899	25.903 (a)(b)(c) (d)(e)
25.904	25.934	25.939	---	25.951 (a)(b)(2) (c)(d)
25.952	25.953	25.954	---	25.957
25.959	25.961	25.963	25.965 (a)(b)	25.967
25.969	25.971	25.973	25.975 (a)	25.977 (a)(2) (c)(d)(e)
25.979	25.981	---	25.993	25.994
25.995	25.997	25.999	25.1001 (a)	25.1011 (a)
---	25.1015	25.1017	25.1019	25.1021
25.1023	---	25.1043 (a)(1)(2) (b)(c)	25.1045 (a)(b)(c)	25.1091 (a)(1) (d)(1)(2)
---	25.1103 (c)(d)	25.1141 (f)(2)	25.1143 (c)	25.1181 (b)
25.1182	25.1183	25.1185	25.1187	25.1191

25.1193 (a)(b)(d)	---	25.1199 (d)	25.1207	25.1301
25.1305 (a)(1)(2) (d)(1)	25.1309	25.1310	25.1316	25.1322
25.1323 (b)(c)(h)	25.1325 (e)	25.1337 (b)(1)	25.1351 (a)(1)(d)	25.1353 (a)(c)
---	25.1357 (a)(c)(d) (e)(f)(g)	25.1360 (a)(b)	---	25.1419
25.1431	---	25.1438 (b)(c)	25.1455	25.1459
25.1461(b)(c)	25.1501 (a)(b)	25.1503	25.1505	25.1507
25.1511	25.1513	25.1515	25.1516	25.1517
25.1519	25.1521 (a)(c)(d)	25.1523	25.1527	25.1529
25.1531	25.1533 (a)(b)	25.1541	25.1549	25.1551
25.1553	25.1555 (c)	25.1581	25.1583 (a)(b) (c)(h)	25.1585
25.1587	25.1591	25.1701	25.1703	25.1705 (a)(b)(2)(4)
25.1707 (a) (b)(e) (f)(i)(j)(k)(l)	25.1709	25.1711 (e)	25.1713	25.1715
25.1717	25.1719	25.1721 (b)	25.1723	25.1725
25.1727	25.1729	Appendix C	Appendix H H25.1, H25.4, H25.5	---

Reversions to earlier amendment levels as listed below have been granted iaw 21A.101

25.203 JAR 25 OP 96/1	25.337 (a)(b)(c) JAR 25 Chg 14	25.493 (b)(d)(e) JAR 25 Change 15	25.519 JAR 25 Chg 14	25.605 JAR 25 Chg 14
25.701 JAR 25 Chg 14	25.807 (e)(2) JAR 25 Chg 14 Equals FAR 807 25.943	25.831 (a) JAR 25 Chg 14	25.869 (a)(3) JAR 25 Chg 16	25.901 (a) (b)(2)(3)(c) JAR 25 Cha 14 25.1013
25.933 (a) JAR 25 Chg 16	JAR 25 Chg 14	25.955 JAR 25 Chg 14	25.991 JAR 25 Chg 14	(b)(c)(d)(e) JAR 25 Cha 14 25.1203
---	25.1093 (b) JAR 25 Chg 14	25.1189 (a)(1) (b)(c)(d)(e)(f)(g)(h) JAR 25 Cha 14 25.1329 (g)	---	JAR 25 Chg 14
25.1303 JAR 25 Chg 14	25.1321 (a)(c)(1) at JAR 25 Chg 14	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 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

Embraer 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)

Issue	Date	Changes	TC issue
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) Section 3, Chapter V - New chapter for "Operational Suitability Data" introduced Section 2, Chapter II and Section 3, Chapter II - Included CRI F-38 - Lavatory Oxygen System Restoration Section 2, Chapter IV - Updated Maintenance Instructions references.	

Issue 09	21/06/2018	Section 2, Chapter II.7 - Additional reference to Special Condition D-15 introduced Section 2, Chapter V - Revised reference of updated OSD-FCD report introduced Section 3, Chapter II.7 - Additional reference to Special Condition D-15 introduced Section 3, Chapter II.11 - Additional reference to Equivalent level of safety finding FCAR HPR-03 introduced Section 3, Chapter II.12 Additional reference to ESF CRI D-16 introduced Section 3, Chapter V - Revised reference of updated OSD-FCD report introduced	
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-END-