



## AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

### TYPE CERTIFICATE DATA SHEET Nº EA-7202

Type Certificate Holder:

**EMBRAER - EMPRESA BRASILEIRA DE AERONÁUTICA S/A**  
Av. Brig. Faria Lima, 2170  
12227-901 São José dos Campos – SP  
**BRASIL**

EA-7202-15

Sheet 1

EMBRAER

EMB-110 (FAB C-95)  
EMB-110C, EMB-110E,  
EMB-110F, EMB-110P,  
EMB-110B1, EMB-  
110S1, EMB-110P2,  
EMB-110K1, EMB-110P1

05 August 2010

This specification is part of CHT Nº 7202 prescribes conditions and limitations of product, when CHT was emitted and satisfies airworthiness requirements included in Regulamentos Brasileiros de Homologação Aeronáutica.

### I - Model EMB-110 (FAB C-95) (Normal Category), approved 20 December 1972.

#### ENGINE

2 turbo propeller Pratt & Whitney of Canada Ltd. PT6A-27.

#### ENGINE LIMITS

	ESHP	SHP	Prop Shaft Speed	TIT (° C)
Takeoff:	715	680	2 200	725
Maximum Continuous:	715	680	2 200	725
Starting (2 sec):				1 090
Maximum Reverse (1 min):		400	2 068	725

#### PROPELLER AND PROPELLER LIMITS

2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -18P; or  
2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P; or  
2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P.  
Diameter: 2 362mm (92.99 in)(no further reduction permitted).  
Pitch settings at 762 mm (30 in) sta.:  
- Reverse: -11°  
- Feather: + 88,1°  
- Primary pick-up angle: 20, 2°  
- Secondary low pitch stop angle: 14°

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<b>AIRSPEED LIMITS (IAS)</b>	Max. Operating Speed:	230 kias (426 km/h)
	Maneuvering Speed*:	169 kias* (313 km/h)
	* See Note 10.	
	Maximum flap extension speed	
	- 25%:	180 kias (334 km/h)
	- 100%:	145 kias (269 km/h)
<b>AIRSPEED LIMITS (IAS) (Cont.)</b>	Maximum operating speed:	145 kias (269 km/h)
	Maximum landing gear extended speed:	145 kias (269 km/h)
<b>C.G RANGE (Landing gear extended)</b>	Since 5 658 mm (222.8 in) to 6 117 mm (240.8 in) with weight 4 024 kgf (8 871 lb) or less.	
	Since 5 863 mm (230.8 in) to 6 117 mm (240.8 in) with weight 5 600 kgf (12 346 lb).	
	Straight-line variation between given points.	
	Moment change due to retraction of landing gear: 116 000 kg.mm (10 068 lb. in).	
	(The CG is shifted forward with retraction of landing gear).	
<b>MAXIMUM WEIGHT</b>	Takeoff:	5 600 kgf (12 346 lb)(see Notes 1.a and 1.b)
	Landing:	5 300 kgf (11 685 lb)
	Zero Fuel:	5 300 kgf (11 685 lb)
<b>MINIMUM CREW</b>	One pilot (VFR conditions);	
	One pilot and one copilot (IFR conditions).	
<b>NUMBER OF SEATS</b>	14 seats (12 passengers and 2 crew). For weight and balance instructions, see Weight and Balance Manual – OT 1C95-5	
<b>MAXIMUM BAGGAGE</b>	240 kgf (529 lb) at + 9 560 mm (376.4 in)	
<b>FUEL CAPACITY</b>	1 720 liters (454 gal.) (2 tanks 860 liters at + 6 350 mm). Unusable Fuel: 28 liters (7.4 gal)(14 liters each tank).	
<b>SERIAL NUMBERS ELIGIBLE</b>	110001, 110002, 110003, 110007, 110008, 110014, 110015, 110019, 110020, 110027, 110028, 110029, 110034, 110035, 110036, 110039, 110040, 110041, 110042, 110043, 110044, 110045, 110051, 110052, 110053, 110054, 110057, 110058, 110060, 110061, 110064, 110066, 110067, 110068, 110071, 110073, 110075, 110077, 110078, 110080, 110095, 110099, 110100, 110103, 110104, 110105, 110109, 110110, 110113, 110114, 110117, 110118, 110121, 110122, 110123 and 110124 (See Note 1).	

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**II - Model EMB-110C (Normal Category), approved 20 December 1972 (see Note 15.a).****ENGINE**

2 turbo propeller Pratt &amp; Whitney of Canada Ltd. PT6A-27.

**ENGINE LIMITS**

	ESHP	SHP	Prop Shaft Speed	TIT (° C)
Takeoff	715	680	2 200	725
Max. Continuous:	715	680	2 200	725
Starting (2 sec):				1 090
Maximum Reverse (1 min):		400	2 068	725

**PROPELLER AND PROPELLER LIMITS**

2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P.  
 Diameter: 2 362mm (92.99 in) (no further reduction permitted).  
 Pitch settings at 762 mm (30 in) station:  
 - Reverse: -11°  
 - Feather: + 88,1°  
 - Primary pick up angle: 20, 2°  
 - Secondary low pitch stop angle: 14°

**AIRSPEEDS LIMITS (IAS)**

Maximum operating speed: 230 kias(426 km/h)  
 Maneuvering Speed: 169 kias (313 km/h)\*  
 \* See note 10.  
 Maximum flap extension speed  
 - 25%: 180 kias (334 km/h)  
 - 100%: 145 kias (269 km/h)  
 Maximum Operating Landing gear Speed 145 kias (269 km/h)  
 Maximum Landing gear extended Speed 145 kias (269 km/h)

**C.G. RANGE (Landing gear extended)**

5 638 mm (221.97 in) to 6 121 mm (240.98 in)at 4 023kgf (8 871 lb) or less.  
 5 867 mm (230.98 in) to 6 121 mm (241 in) at 5 600 kgf (12 346lb).  
 Straight-line variation between given points.  
 Moment Change due to retraction of landing gear: 116 000 kg.mm (10 068 lb. in).  
 (the CG is shifted forward with retraction of landing gear).

**MAXIMUM WEIGHT**

Takeoff: 5 600 kgf (12 346lb)(see Notes 1.a and 1.b)  
 Landing: 5 300 kgf (11 684 lb)  
 Zero Fuel: 5 300 kgf (11 684 lb)

**MINIMUM CREW**

1 pilot (VFR conditions); 1 pilot and 1 copilot (IFR conditions).

**NUMBER OF SEATS**

17 seats (15 passengers and 2 crew).

<b>MAXIMUM BAGGAGE</b>	240 kgf (529 lb) at +376.3 in
<b>FUEL CAPACITY</b>	1 720 liters (454 gal) (2 tanks 860 litres at 6 350 mm). Unusable fuel: 28 liters (7.4 gal) (14 litres each tank).
<b>SERIAL NUMBERS ELIGIBLE</b>	110004, 110005, 110006, 110009, 110010, 110011, 110012, 110013, 110016, 110017, 110018, 110021, 110022, 110023, 110024, 110025, 110026, 110030, 110033, 110037, 110038, 110046, 110047, 110048, 110049, 110050, 110076, 110079, 110081, 110082, 110083, 110084, 110085, 110086, 110089, 110090, 110093, 110094 and 110097. (See Note 1).

### III - Model EMB-110F (Normal Category), approved 30 January 1975 (see Note 15).

**ENGINE** 2 turbo propeller Pratt & Whitney of Canada Ltd. PT6A-27.

#### ENGINE LIMITS

	ESHP	SHP	Prop Shaft Speed	TIT (° C)
Takeoff:	715	680	2 200	725
Max. Continuous:	715	680	2 200	725
Starting (2 sec):				1 090
Max. Reverse (1 min):		400	2 068	725

#### PROPELLER AND PROPELLER LIMITS

2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P.  
 Diameter: 93 in. (no further reduction permitted).  
 Pitch settings at 30 in. sta. 30 in (762 mm):  
 - Reverse: -11°  
 - Feather: + 88,1°  
 - Primary pick-up angle: 20. 2°  
 - Secondary low pitch stop angle: 14°

#### AIRSPPEED LIMITS (IAS)

Maximum operating speed:	230 kias (405 km/h)
Maneuvering Speed*:	169 kias (313 km/h)*
* See note 10.	
Maximum flap extension speed:	
- 25%:	180 kias (313 km/h)
- 100%:	145 kias (269 km/h)
Maximum Operating Speed	145 kias (269 km/h)
Maximum landing gear extended and Operating speed:	145 kias (269 km/h)

<b>C.G. RANGE (Landing gear extended)</b>	5 658 mm (222.8 in) to 6 117 mm (240.8 in) at 4 024 kgf (8 871 lb) or less. 5 863 mm (230.8 in) to 6 117 mm (240.8 in) at 5 600 kgf (12 346 lb). Straight-line variation between given points. Moment change due to retraction of landing gear: 116 000 kg.mm (10 068 lb. in). (The CG is shifted forward with retraction of landing gear).
<b>MAXIMUM WEIGHT</b>	Takeoff: 5 600 kgf (12 346lb) (see Note: 1.a) Landing: 5 300 kgf (11685 lb) Zero Fuel: 5 300 kgf (11685 lb)
<b>MINIMUM CREW</b>	1 pilot (VFR conditions);1 pilot and 1 copilot (IFR conditions).
<b>NUMBER OF SEATS</b>	2 seats (2 crew) – Cargo version.
<b>MAXIMUM BAGGAGE</b>	Maximum charge distributed on floor: 92 lb/ ft <sup>2</sup> (450 kg/m <sup>2</sup> )
<b>FUEL CAPACITY</b>	1 720 liters (454 gal) (2 tanks of 860 liters at +6 350 mm). Unusable fuel: 28 liters (7.4 gal)(14 liters each tank).
<b>SERIAL NUMBERS ELIGIBLE</b>	Not applicable.

#### IV - Model EMB-110E (Normal Category), approved March 03, 1975.

**ENGINE** 2 Pratt & Whitney of Canada Ltd. PT6A-27.

#### ENGINE LIMITS

	ESHP	SHP	Prop Shaft Speed	TIT (° C)
Takeoff:	715	680	2 200	725
Max. Continuous:	715	680	2 200	725
Starting (2 sec):				1 090
Max. Reverse (1 min):		400	2 068	725

#### PROPELLER AND PROPELLER LIMITS

2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -18P; or  
2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P; or  
2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P.  
Diameter: 2 362mm (93 in) (no further reduction permitted).  
Pitch settings at 762mm (30 in) sta.:  
- Reverse: -11°  
- Feather: + 88,1°  
- Primary pick-up angle: 20, 2°  
- Secondary low pitch stop angle: 14°

<b>AIRSPED LIMITS (IAS)</b>	Max. Operating speed:	230 kias (426 km/h)
	Maneuvering Speed* (V <sub>A</sub> ):	169 kias (313 km/h)*
	* See Note 10	
	Maximum flap extension speed	
	- 25%:	180 kias (334 km/h)
	- 100%:	145 kias (269 km/h)
	Maximum Operating Speed	145 kias (269 km/h)
	Maximum Landing gear extended Speed	145 kias (269 km/h)
<b>C.G. RANGE (Landing gear extended)</b>	5 658 mm (222.75 in) to 6 117 mm (240.8 in) at 4 024 kgf (8 871.4 lb) or less.	
	5 863 mm (230.8 in) to 6 117 mm (240.8 in) at 5 600 kgf (12 346 lb).	
	Straight-line variation between given points.	
	Moment change due to retraction of landing gear: 116 000 kg.mm (10 068 lb. in). (the CG is shifted forward with retraction of landing gear).	
<b>MAXIMUM WEIGHT</b>	Takeoff:	5 600 kgf (12 346 lb) (see Note 1.a)
	Landing:	5 300 kgf (11 685 lb)
	Zero fuel:	5 300 kgf (11 685 lb).
<b>MINIMUM CREW</b>	One pilot (VFR conditions); One pilot and one copilot (IFR conditions).	
<b>NUMBER OF SEATS</b>	11 seats (9 passengers and 2 crew)	
<b>MAXIMUM BAGGAGE</b>	Maximum charge distributed on floor: 450 kg/m <sup>2</sup> .	
<b>FUEL CAPACITY</b>	1 720 liters (454.4 gal) (2 tanks of 860 liters at +6 350 mm).	
	Unusable Fuel: 28 liters (7.4 gal) (14 liters each tank).	
<b>SERIAL NUMBERS ELEGIBLE</b>	110031, 110032, 110074 and 110119.	

**V - Model EMB-110P (Normal Category), approved 10 December 1975 (see Note 15).**

**ENGINE** 2 turbo propeller Pratt & Whitney of Canada Ltd. PT6A-27.

**ENGINE LIMITS**

	ESHP	SHP	Prop Shaft Speed	TIT (° C)
Takeoff:	715	680	2 200	725
Max. Continuous:	715	680	2 200	725
Starting (2 sec):				1 090
Max. Reverse (1 min):		400	2 068	725

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<b>PROPELLER AND PROPELLER LIMITS</b>	<p>2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -18P; or</p> <p>2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P; or</p> <p>2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P.</p> <p>Diameter: 2 362mm (no further reduction permitted).</p> <p>Pitch settings at 762mm (30 in):</p> <ul style="list-style-type: none"> <li>- Reverse: -11°</li> <li>- Feather: + 88,1°</li> <li>- Primary pick up angle: 20, 2°</li> <li>- Secondary low pitch stop angle: 14°</li> </ul>																
<b>AIRSPEED LIMITS (IAS)</b>	<table border="0"> <tr> <td>Maximum operating speed:</td> <td>230 kias (426 km/h)</td> </tr> <tr> <td>Maneuvering Speed:</td> <td>169 kias (313 km/h)*</td> </tr> <tr> <td colspan="2">* See Note 10</td> </tr> <tr> <td>Maximum flap extension speed</td> <td></td> </tr> <tr> <td>- 25%:</td> <td>180 kias (334 km/h)</td> </tr> <tr> <td>- 100%:</td> <td>145 kias (269 km/h)</td> </tr> <tr> <td>Maximum Operating Speed:</td> <td>145 kias (269 km/h)</td> </tr> <tr> <td>Maximum Landing Gear Extended Speed:</td> <td>145 kias (269 km/h)</td> </tr> </table>	Maximum operating speed:	230 kias (426 km/h)	Maneuvering Speed:	169 kias (313 km/h)*	* See Note 10		Maximum flap extension speed		- 25%:	180 kias (334 km/h)	- 100%:	145 kias (269 km/h)	Maximum Operating Speed:	145 kias (269 km/h)	Maximum Landing Gear Extended Speed:	145 kias (269 km/h)
Maximum operating speed:	230 kias (426 km/h)																
Maneuvering Speed:	169 kias (313 km/h)*																
* See Note 10																	
Maximum flap extension speed																	
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- 100%:	145 kias (269 km/h)																
Maximum Operating Speed:	145 kias (269 km/h)																
Maximum Landing Gear Extended Speed:	145 kias (269 km/h)																
<b>C.G RANGE (Landing gear extended)</b>	<p>5 658 mm (222.75 in) to 6 117 mm (240.8 in) at 4 024 kgf (8 871.4 lb) or less.</p> <p>5 863 mm (230.83 in) to 6 117 mm (240.8 in) at 5 600 kgf (12 346 lb).</p> <p>Straight-line variation between given points.</p> <p>Moment change due to retraction of landing gear: 10 068 lb. in (116 000 kg.mm). (the CG is shifted forward with retraction of landing gear).</p>																
<b>MAXIMUM WEIGHT</b>	<table border="0"> <tr> <td>Takeoff:</td> <td>5 600 kgf (12 346lb) (see Note 1.a)</td> </tr> <tr> <td>Landing:</td> <td>5 300 kgf (11 685lb)</td> </tr> <tr> <td>Zero fuel:</td> <td>5 300 kgf (11 685lb)</td> </tr> </table>	Takeoff:	5 600 kgf (12 346lb) (see Note 1.a)	Landing:	5 300 kgf (11 685lb)	Zero fuel:	5 300 kgf (11 685lb)										
Takeoff:	5 600 kgf (12 346lb) (see Note 1.a)																
Landing:	5 300 kgf (11 685lb)																
Zero fuel:	5 300 kgf (11 685lb)																
<b>MINIMUM CREW</b>	1 pilot (VFR conditions); 1 pilot and 1 copilot (IFR conditions).																
<b>NUMBER OF SEATS</b>	20 seats (18 passengers and 2 crew)																
<b>MAXIMUM BAGGAGE</b>	Maximum charge distributed on floor: 450 kg/m <sup>2</sup> (0.64 lb/in <sup>2</sup> )																
<b>FUEL CAPACITY</b>	1 720 liters (454.4 gal) (2 tanks 860 liters at +6 350 mm). Unusable Fuel: 28 liters (7.4 gal) (14 liters each tank).																
<b>SERIAL NUMBERS ELEGIBLE</b>	110063, 110091, 110092, 110098, 110106, 110107, 110111, 110116, 110120, 110125, 110126, 110127, 110128, 110129, 110130, 110131, 110132, 110136, 110137, 110144 and 110145.																

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**VI - Model EMB-110B1 (Normal Category), approved 10 December 1976 (see Note 15).****ENGINE**

2 turboprop Pratt &amp; Whitney of Canada Ltd. PT6A-27.

**ENGINE LIMITS**

	ESHP	SHP	Prop Shaft Speed	TIT (° C)
Takeoff:	715	680	2 200	725
Max. Continuous:	715	680	2 200	725
Starting (2 sec):				1 090
Max. Reverse (1 min):		400	2 068	725

**PROPELLER AND PROPELLER LIMITS**

2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P.  
 Diameter: 93 in (2 362mm) (no further reduction permitted).  
 Pitch settings at 30 in (762mm):  
 - Reverse: -11°  
 - Feather: + 88,1°  
 - Primary pick-up angle: 20, 2°  
 - Secondary low pitch stop angle: 14°

**AIRSPEED LIMITS (IAS)**

Maximum operating speed: 230 kias (426 km/h)  
 Maneuvering Speed: 169 kias (313 km/h)\*  
 \* See Note 10  
 Maximum flap extension Speed:  
 - 25%: 180 kias (334 km/h)  
 - 100%: 145 kias (269 km/h)  
 Maximum Operating Speed: 145 kias (269 km/h)  
 Maximum Landing gear extended Speed: 145 kias (269 km/h)

**C.G. RANGE (Landing gear extended)**

5 658 mm (223 in) to 6 117 mm (240.8 in) at 4 024 kgf (8 871 lb) or less.  
 5 863 mm (230.8 in) to 6 117 mm (240.8 in) at 5 600 kgf (12 346 lb).  
 Straight-line variation between given points.  
 Moment change due to retraction of Landing gear: 116 000 kg.mm (10 068 lb in).  
 (The C.G. is shifted forward with retraction of landing gear).

**MAXIMUM WEIGHT**

Takeoff: 5 600 kgf (12 346 lb) (see Note 1.a)  
 Landing: 5 300 kgf (11 684 lb)  
 Zero fuel: 5 300 kgf (11 684 lb)

**MINIMUM CREW**

1 pilot (VFR conditions)  
 1 pilot and 1 copilot (IFR conditions)



- NUMBER OF SEATS** Photo version:  
 8 seats (maximum seat number: 6). See Note 2.i.  
 Executive version:  
 11 seats (9 passengers and 2 crew).  
 See approved configuration in Flight Manual.
- MAXIMUM BAGGAGE** Not applicable
- FUEL CAPACITY** 1 720 liters (454 gal) (2 tanks 860 liters at +6 350 mm).  
 Unusable Fuel: 28 liters (7.4 gal)\_(14 liters each tank).
- SERIAL NUMBERS ELEGIBLE** 110096, 110187 and 110284.

**VII - Model EMB-110S1 (Normal Category), approved19 October 1976 (see Note 15).**

- ENGINE** 2 turboprop Pratt & Whitney of Canada Ltd. PT6A-34.
- FUEL** JP-4, JP-5, Avjet A, Avjet A-1 and Avjet B per Specifications PWA 522 or CPW 46 (see Note 5).

**ENGINE LIMITS**

	ESHP	SHP	PROP SHAFT SPEED	TIT (° C)
Takeoff:	783	750	2 200	790
Max. Continuous:	783	750	2 200	790
Starting (2 sec):				1 090
Max. Reverse (1 min):		400	2 068	790

- PROPELLER AND PROPELLER LIMITS**
- 2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P; or  
 2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -18P.  
 Diameter: 2 362mm (no further reduction permitted).  
 Pitch settings at 30 in (762mm):  
 - Reverse: -11°  
 - Feather: + 88,1°  
 - Primary pick-up angle): 20, 2°  
 - Secondary low pitch stop angle: 14°

- AIRSPEED LIMITS (IAS)**
- Max. Operating Speed: 230 kias (426 km/h)  
 Maneuvering Speed: 169 kias (313 km/h)\*  
 \* See Note 10  
 Maximum Flap extension Speed \*  
 - 25%: 180 kias (334 km/h)  
 - 100%: 145 kias (269 km/h)  
 Maximum Operating Speed \* 145 kias (269 km/h)  
 Maximum Landing gear extended Speed: 145 kias (269 km/h)

**C.G. RANGE (Landing gear extended)** From 5 741 mm (226.02 in) until 6 117 mm (240.8 in) with weight of 4 024 kgf (8 871 lb) or less.  
 From 5 945 mm (234.06 in) until 6 117 mm (240.83 in) with weight of 5 600 kgf (12 346lb).  
 Straight-line variation between given points.  
 Moment change due to retraction of Landing gear: 116 000 kg.mm (10 068 lb. in).  
 (The C.G. is shifted forward with retraction of landing gear).

**MAXIMUM WEIGHT** Takeoff: 5 600 kgf(12 346lb) (see Note 1a)  
 Landing: 5 300 kgf(11 685lb)  
 Zero fuel: 5 300 kgf(11 685lb)

**MINIMUM CREW** 1 pilot (VFR conditions); 1 pilot and 1 copilot (IFR conditions).

**NUMBER OF SEATS** 3 seats (2 crew and 1 operator of equipments).

**MAXIMUM BAGGAGE** 240 Kgf(529 lb) at + 9 560 mm (376.38 in)

**FUEL CAPACITY** 1 914 liters (506 gal)(2 tanks 957 liters at + 6 350 mm).  
 Unusable Fuel: 28 liters (7.4 gal)(14 liters each tank).

**SERIAL NUMBERS ELEGIBLE** 110112.

**VIII - Model EMB-110P2 (Normal Category), approved 15 September 1977 (see Note 15).**

**ENGINE** 2 turbo propeller Pratt & Whitney of Canada Ltd. PT6A-34.

**ENGINE LIMITS**

	Equiv. Shaft Horsepower (ESHP)	Shaft Horsepower (SHP)	RPM Propeller	TIT (° C)
Takeoff	783	750	2 200	790
Max. Continuous	783	750	2 200	790
Starting (2 sec)				1 090
Max. Reverse (1 min.)		400	2 068	790

**PROPELLER AND PROPELLER LIMITS** 2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -17P; -18P; or  
 2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -17P; -18P; or  
 2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -17P; -18P.  
 Diameter: 2 362mm (93 in); no further reduction permitted.  
 Pitch settings at 762mm (30 in) sta.:  
 - reverse: -11°  
 - feather: + 88,1°  
 - primary pick-up angle:: +20.2°  
 - secondary low pitch stop angle: 14°

<b>AIRSPEEDS LIMITS (IAS)</b>	Maximum operating speed ( $V_{MO}$ ):	230 kias (426 km/h)
	Maneuvering speed * ( $V_A$ ):	169 kias (313 km/h)
	* See Pilot's Operating Handbook	*
	Maximum flaps extended speed ( $V_{FE}$ )	
	- 25%:	180 kias (334 km/h)
	- 100%:	148 kias (274 km/h)
<b>AIRSPEEDS LIMITS (IAS) (Cont.)</b>	Maximum Operating Speed and Maximum Landing gear extended Speed:	146 kias (270 km/h)
<b>C.G. RANGE</b> (Landing gear extended)	6 489 mm (255.5 in) to 6 909 mm (272.0 in) at 5670 kgf (12 500 lb) 6 382 mm (251.3 in) to 6 909 mm (272.0 in) at 4 000 kgf (8 818 lb) or less. Straight-line variation between given points. Moment change due to retraction of landing gear: 116 000 kg.mm (10 068 lb. in.); the CG is shifted forward with retraction of landing gear.	
<b>MAXIMUM WEIGHT</b>	Takeoff:	5670 kgf (12 500 lb) (see Note 1.a)
	Landing:	5 450 kgf (12 015 lb) (see Note 13)
	Zero Fuel:	5 450 kgf (12 015 lb)
	Ramp:	5 700 kgf (12 566 lb)
<b>MINIMUM CREW</b>	1 pilot - VFR conditions (see Note 6).	
<b>NUMBER OF SEATS</b>	23 seats (21 passengers and 2 crew).	
<b>MAXIMUM BAGGAGE</b>	240 kgf(529 lb) at +9 560 mm (376 in); see Note 1.d.	
<b>FUEL CAPACITY</b>	<b>1 720</b> liters (454 gal.) (2 tanks <b>860</b> liters at + <b>7 200</b> mm). Unusable Fuel: 28 liters (7.4 gal)(14 liters each tank).	
<b>SERIAL NUMBERS ELIGIBLE</b>	110146, 110153, 110156, 110157, 110161, 110184, 110186, 110189, 110190, 110193, 110194, 110196, 110197, 110199, 110200, 110201, 110209, 110210, 110213, 110216, 110224, 110229, 110231, 110243, 110245, 110262, 110270, 110277, 110292, 110295, 110300, 110303, 110307, 110318, 110333 and 110401.	

**IX - Model EMB-110K1 (Normal Category), approved 09 January 1978 (see Note 15).**

**ENGINE** 2 turboprop Pratt & Whitney of Canada Ltd. PT6A-34.

**ENGINE LIMITS**

	ESHP	SHP	PROP SHAFT SPEED	TIT (° C)
Takeoff:	783	750	2 200	790
Max. Continuous:	783	750	2 200	790
Starting (2 sec):				1 090
Max. Reverse (1 min):		400	2 068	790

<b>PROPELLER AND PROPELLER LIMITS</b>	<p>2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -17P; -18P; or</p> <p>2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -17P; -18P; or</p> <p>2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -17P; -18P.</p> <p>Diameter: 93 in (2 362mm) (no further reduction permitted). Pitch settings at 30 in (762mm):</p> <ul style="list-style-type: none"> <li>- Reverse: -11°</li> <li>- Feather: + 88,1°</li> <li>- Primary pick-up angle: 20, 2°</li> <li>- Secondary low pitch stop angle: 14°</li> </ul>
<b>AIRSPEED LIMITS (IAS)</b>	<p>Max. Operating Speed: 230 kias (426 km/h)</p> <p>Maneuvering Speed *: 169 kias (313 km/h)*</p> <p>* See Operating Manual</p> <p>Maximum Flap extension Speed *</p> <ul style="list-style-type: none"> <li>- 25%: 180 kias (334 km/h)</li> <li>- 100%: 148 kias (274 km/h)</li> </ul> <p>Maximum Operating Speed *: 146 kias (270 km/h)</p> <p>Maximum Landing gear extended Speed 146 kias (270 km/h)</p>
<b>C.G. RANGE (Landing gear extended)</b>	<p>6 382mm (251 in) to 6 909mm (272 in) with weight of 4 000 kgf(8 818 lb) or less.</p> <p>6 489 mm (256 in) to 6 909mm (272 in) with weight of 5670 kgf(12 500 lb)</p> <p>Straight-line variation between given points.</p> <p>Moment change due to retraction of Landing gear: 116 000 kg.mm (10 068 lb. in).</p> <p>(The C.G. is shifted forward with retraction of landing).</p>
<b>MAXIMUM WEIGHT</b>	<p>Takeoff: 5670 kgf(12 500 lb) (see Note 1.a)</p> <p>Landing: 5 450 kgf(12 015 lb) (see Note13)</p> <p>Zero fuel: 5 450 kgf(12 015 lb)</p> <p>Ramp: 5 700 kgf(12 566 lb)</p>
<b>MINIMUM CREW</b>	1 pilot (VFR conditions) VFR conditions (see Note 6).
<b>NUMBER OF SEATS</b>	<p>2 Seats (2 Crew). Approved only as charger.</p> <p>Maximum charge distributed on floor: 488 kg/m<sup>2</sup> (See Flight Manual).</p> <p>Maximum total charge: 1 804 kgf(3 977 lb).</p>
<b>MAXIMUM BAGGAGE</b>	Not applicable.
<b>FUEL CAPACITY</b>	<p>1 720 liters (454 gal.) (2 tanks 860 liters at + 7 200 mm).</p> <p>Unusable Fuel: 28 liters (7.4 gal)(14 liters each tank).</p>

**SERIAL NUMBERS ELEGIBLE** 110139, 110143, 110148, 110149, 110152, 110160, 110164, 110168, 110169, 110170, 110172, 110173, 110174, 110175, 110176, 110177, 110178, 110180, 110181 and 110183.

**X - Model EMB-110P1 (Normal Category), approved 09 May 1978 (see Note 15.i).**

**ENGINE** 2 turboprop Pratt & Whitney of Canada Ltd. PT6A-34.

**ENGINE LIMITS**

	ESHP	SHP	PROP SHAFT SPEED	TIT (° C)
Takeoff:	783	750	2 200	790
Max. Continuous:	783	750	2 200	790
Starting (2 sec):				1 090
Max. Reverse (1 min):		400	2 068	790

**PROPELLER AND PROPELLER LIMITS** 2 Hartzell HC-B3TN-3C/T10178H-8R or /T10178-8R with spinner Hartzell D3434 -5; -5P; -6P; -12P; -17P; -18P; or  
 2 Hartzell HC-B3TN-3D/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -17P; -18P; or  
 2 Hartzell HC-B3TN-3C/T10178HB-8R or /T10178B-8R with spinner Hartzell D3434 -6; -6P; -12P; -17P; -18P.  
 Diameter: 93 in (2 362mm) (no further reduction permitted).  
 Pitch settings at 30 in (762mm):  
 - Reverse: -11°  
 - Feather: + 88,1°  
 - Primary pick-up angle: 20, 2°  
 - Secondary low pitch stop angle: 14°

**AIRSPPEED LIMITS (IAS)** Max. Operating Speed: 230 kias (426 km/h)  
 Maneuvering Speed \*: 169 kias (313 km/h)\*  
 \* See Operating Manual  
 Maximum Flap extension Speed \*  
 - 25%: 180 kias (334 km/h)  
 - 100%: 148 kias (274 km/h)  
 Maximum Landing gear extended and Operating Speed \*: 146 kias (270 km/h)

**C.G. RANGE (Landing gear extended)** 6 382mm (251.26 in) to 6 909mm (272.0 in) weight of 4 000 kgf (8 818 lb) or less.  
 255 in (6 489mm) to 272 in (6 909mm) with weight of 12 500 lb (5670 kg).  
 Straight-line variation between given points.  
 Moment change due to retraction of Landing gear: 116 000 kg.mm (10 068 lb. in ).  
 (The C.G. is shifted forward with retraction of landing gear).

**MAXIMUM WEIGHT** Takeoff: 5 670 kgf (12 500 lb) (see Note1.a)  
 Landing: 5 450 kgf (12 015 lb) (see Note13)  
 Zero Fuel: 5 450 kgf (12 015 lb)  
 Ramp: 5 700 kgf (12 566 lb)

<b>MINIMUM CREW</b>	1 pilot (VFR conditions) (see Note 6).
<b>NUMBER OF SEATS</b>	21 seats: <ul style="list-style-type: none"><li>- 18 passengers and 3 crew, or</li><li>- 19 passengers (lateral seats) and 2 crew. This configuration is approved for private transportation.</li></ul> <p>-The Maximum charge distributed on floor is 488 kg/m<sup>2</sup>. Maximum total charge: 1 804 kgf(3 977 lb).</p>
<b>MAXIMUM BAGGAGE</b>	320 Kgf(705 lb) at + 10 400 mm (409 in) (See Note 1.e)
<b>FUEL CAPACITY</b>	<b>1 720 liters (454 gal.)</b> (2 tanks <b>860 liters at + 7 200 mm</b> ). Unusable Fuel: 28 liters (7.4 gal)(14 liters each tank).
<b>SERIAL NUMBERS ELEGIBLE</b>	110192, 110195, 110198, 110202 up to 110208, 110211, 110212, 110214, 110215, 110217 up to 110223, 110225 up to 110228, 110230, 110232 up to 110242, 110244, 110248 up to 110254, 110256 up to 110261, 110263, 110265 up to 110268, 110271 up to 110275, 110278 up to 110281, 110283, 110285 up to 110290, 110293, 110294, 110296, 110297, 110298, 110301, 110302, 110304, 110305, 110308 up to 110316, 110319, 110321 up to 110325, 110327 up to 110331, 110334, 110335, 110336, 110338 up to 110348, 110350 up to 110355, 110357, 110358, 110359, 110362 up to 110366, 110368 up to 110373, 110375 up to 110389, 110391 up to 110400, 110402 up to 110428, 110436, 110438, 110439, 110441, 110442, 110444 up to 110449, 110451, 110453, 110455, 110456, 110458 up to 110470, 110486, 110490, 110494, 110496, and 110498.

**DATA PERTINENT TO ALL MODELS:**

<b>FUEL</b>	JP-4, JP-5, Avjet A, Avjet A-1 and Avjet B under the specification PWA 522 or CPW 46 (see Note 5).
<b>OIL</b>	In accordance with P & W Specification PWA 521 or CPW 202 (MIL L 23699A)
<b>OIL CAPACITY</b>	8,7 liters (2.3 gal) each engine at + 4 902 mm (193 in). 1,1 liter (0.3 gal) each oil radiator at +4 890 mm (192.5) in.
<b>HYDRAULIC OIL RESERVATORY CAPACITY</b>	9,8 liters (2.6 gal) at +418.5 in.
<b>MAXIMUM OPERATING ALTITUDE</b>	7 620m (25 000 ft).
<b>OPERATING TEMPERATURE LIMITS</b>	ISA + 28° and -40°C

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**DATUM**

For EMB-110, EMB-110C, EMB-110E, EMB-110F, EMB-110P, EMB-110B1 and EMB-110S1 models:

- A plan perpendicular to the fuselage centerline located at 6 000 mm (236.2 in) forward of the 28% wing chords line (frame 16).
- This line defined as 28% wing chords line is 943 mm (37.1 in) forward of the rear jacking points.

For EMB-110P2, EMB-110K1 e EMB-110P1 models:

- A plan perpendicular to the fuselage centerline located at 6 850 mm (269.7 in) forward of the 28% wing chords line (frame 16).
- This line defined as 28% wing chords line is 943 mm (37.1 in) forward of the rear jacking points.

**LEVELING MEANS**

Plumb from the support in the upper internal part of frame 16 using as reference a mark on the floor.

**MEAN AERODYNAMIC CHORD****CONTROL SURFACE MOVEMENTS**

(deflections measured perpendicular to the hinge lines)

For EMB-110, EMB-110C, EMB-110E, EMB-110F, EMB-110P, EMB-110B1 e EMB-110S1 models:

Elevator:  $32^\circ \pm 1^\circ$  up  $20^\circ \pm 1^\circ$  down

Rudder:  $30^\circ \pm 1^\circ$  right  $30^\circ \pm 1^\circ$  left

Ailerons:  $22^\circ \pm 1^\circ$  up  $14^\circ \pm 1^\circ$  down

Elevator tab:

- left:  $32^\circ \pm 2^\circ$  up\*  $32^\circ \pm 2^\circ$  down\*

- right: deactivated

Rudder tab: see Note 4.

Aileron tab (commanded):

$18^\circ \pm 3^\circ$  up  $18^\circ \pm 3^\circ$  down

Aileron tab (automatic):

$16^\circ \pm 2^\circ$  up  $8^\circ \pm 2^\circ$  down

Flaps:  $38^\circ \pm 1^\circ$

For EMB-110P2, EMB-110K1 e EMB-110P1 models:

Elevator:  $22^\circ \pm 1^\circ$  up  $20^\circ \pm 1^\circ$  down

Rudder:  $25^\circ \pm 1^\circ$  right  $25^\circ \pm 1^\circ$  left

Ailerons:  $22^\circ \pm 1^\circ$  up  $14^\circ \pm 1^\circ$  down

Elevator tab:

- left:  $32^\circ \pm 2^\circ$  up\*  $32^\circ \pm 2^\circ$  down\*

- right: deactivated

Rudder tab (commanded):

$12^\circ \pm 2^\circ$  right  $11^\circ \pm 2^\circ$  left

Rudder tab (automatic):

- rudder  $25^\circ$  right: tab  $12^\circ \pm 1^\circ$  left

- rudder  $25^\circ$  left: tab  $4.5^\circ \pm 1^\circ$  left

**CONTROL SURFACE  
MOVEMENTS (Cont.)**

Aileron tab (commanded):		
	18° ± 3° up	18° ± 3° down
Aileron tab (automatic):		
	16° ± 2° up	8° ± 2° down
Flaps:	38° ± 1°	

**CERTIFICATION BASIS**

a) Type Certificate 7202 issued on 20 December 1972 based on the applicable requirements of the RBHA 23, corresponding to US Federal Aviation Administration (FAA) FAR 23 effective on 01 February 1965, including Amendment 23-7 effective September 1969, plus:

- RBHA/FAR 23.1529 Amdt. 23-8, effective on 5 February 1970;
- RBHA/FAR 23.1351(c)(4) Amdt. 23-14 effective on 20 December 1973;
- RBHA/FAR 23.1441 through 23.1449, Amdt. 23-9 effective on 17 June 1970;

b) RBHA/FAR 23.1545(a) equivalent level of safety.

c) In addition:

The EMB-110P2 and EMB-110P1 models in the passenger configuration comply with:

- The special conditions established in the letter n° 341-IFI/77, dated 21 March 1977;
- The RBHA/FAR 25.853 Amdt. 25-32 effective 01 May 1972;
- The SFAR 27 until Amdt 27-1 effective 01 January 1975;
- The Appendix A of RBHA/FAR-135 effective 19 June 1970;
- The RBHA/FAR 36 until Amdt. 36-6 effective 24 January 1977;
- The RBHA 1348/01 (corresponding to SFAR 41 until Amdt. A effective 14 April 1980; see Note 11);

The EMB-110K1 and EMB-110P1 models in the cargo configuration comply with:

- The special conditions established in the letter n° 1982-IFI/76 dated 22 December 1976;
- The SFAR 27 Amdt. 27-1 effective 01 January 1975,
- The RBHA 1350 (corresponding to FAR 25) 25.853, 25.855, 25.857(a) or (e) and 25.787 (Amdt. 25-32 effective 01 May 1972) and with RBHA/FAR 25.1439 effective on 24 December 1964);
- The FAR 36 Amdt. 36-6 effective on 24 January 1977.

**PRODUCTION BASIS**

Production Certificate CHE N° E-7203-01

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**EQUIPMENT**

a) The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft.

b) In addition the aircraft must be equipped with the Flight Manual or Pilot's Operating Handbook MO-110P2/275, appropriate to each model, as follows:

- OT-1C95-1 for the models 110, 110C, 110E, 110F and 110P;
- MO-110B1/352 (CTA approved) for the model 110B1;
- PT-110S1/090 for the model 110S1; and
- MO-110P2/275 (CTA approved) for the models 110K1, 110P1 and 110P2.

c) The "Basic Equipment Check List - Chart A" for the models: EMB-110 (FAB C-95), EMB-110C, EMB-110E, EMB-110F, EMB-110P, EMB-110B1, EMB-110S1, EMB-110P2, EMB-110K1 and EMB-110P1 lists all the required and optional equipment. For the models EMB-110 P2, EMB-110K1 and EMB-110P1 the "Chart A" is included in the approved Pilot's Operating Handbook. For the other models the "Chart A" is included Weight and Balance Manual (OT-1C95-5).

For EMB-110P1 and EMB-110K1 operating in the cargo configuration, see Note 12 for required equipment.

**NOTES:****NOTE 1** Weight and Balance.

a. A weight and balance report listing all equipment included in the empty weight must be delivered with each airplane. The approved Pilot's Operating Handbook contains detailed loading instructions for the models EMB-110P2, EMB-110K1 and EMB-110P1, and the Weight and Balance Manual (OT-1C95-5) for the remaining models.

The certificated empty weight and corresponding center of gravity location must include undrainable oil (not included in oil capacity) and unusable fuel (not included in usable fuel) as follows:

– for the models: EMB-110 FAB C-95, EMB-110C, EMB-110E, EMB-110F, EMB-110P, EMB-110B1 and EMB-110S1:

- the unusable fuel: 22 kgf (49 lb) at +6 410 mm (252.4 in); and
- the undrainable oil: 0,5 kgf(1.1 lb) at +4 900 mm (192.9 in).

– for the models EMB-110P2, EMB-110K1 and EMB-110P1:

- the unusable fuel: 22 kgf(49 lb) at +7 260 mm (258.8 in); and
- the undrainable oil: 0,5 kgf(1.1 lb) at +5 750 mm (226.4 in).

b. The S/N 110001 through 110030 may operate with 5 600 kgf(12 346 lb) maximum takeoff weight if modified per EMBRAER Service Bulletins nº 110-53-001, 110-32-010, 110-32-001 and 110-31-002.

The S/N 110031 and up have already incorporated these Service Bulletins for operation with 5 600 kgf (12 346lb) maximum takeoff weight in the production line.

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**NOTE 1  
(Cont.)**

For S/N 110001 through 110030 not incorporating the Service Bulletins above, the following information is valid:

– Maximum approved weights:

- takeoff: 5 300 kgf(11 684 lb)
- landing: 5 050 kgf(11 133 lb)

– Speed limits (ias):

- maximum operating speed: 230 kt (426 km/h)
- maximum L. G. extended speed: 145 kt (269 km/h)
- maximum L. G. operation speed: 145 kt (269 km/h)
- maneuvering speed: 165 kt (306 km/h)
- maximum flaps extended speeds 38°: 145 kt (269 km/h)

– CG limits (L. G. extended):

- +5 658 mm (222.8 in) to +6 117 mm (240.8 in) with 4 024 kgf(8 871 lb) or less
- +5 839 mm (229.9 in) to +6 117 mm (240.8 in) with 5 300 kgf(11 684 lb).

Straight-line variation between given points.

- c. The EMB-110P2 S/N 110146 is limited to maximum takeoff weight of 5 600 kgf(12 346lb) and to maximum landing weight of 5 300 kgf(11 684 lb).
- d. The EMB-110P2 baggage compartment may be modified per EMBRAER drawing nº 110P1-856-10; in this case the maximum capacity will be 320 kgs (705 lb).
- e. The EMB-110P1 baggage compartment may be modified per EMBRAER drawings nº 110P1-863-40-51 and 110P1-856-24; in this case the maximum capacity will be 420 kgf(926 lb).

**NOTE 2**Markings and Placards.

a. In baggage compartment:

"MAXIMUM BAGGAGE: 240 Kgf(529 lb)"

For EMB-110P1 Model:

"MAXIMUM BAGGAGE: 320 Kgf(705 lb)"

Optionally for EMB-110P2 Model if modified under drawing EMBRAER Number 110P1-856-10:

"MAXIMUM BAGGAGE: 320 Kgf (705 lb)" ,.

Optionally for Model EMB-110P1: if modified in accordance with drawings EMBRAER Numbers 110P1-863-40-51 and 110P1-856-24:

"MAXIMUM BAGGAGE: 420 kgf(926 lb)"

In the baggage compartment for Model EMB-110K1 and EMB-110P1:

"MAXIMUM CHARGE DISTRIBUTED ON FLOOR: 488 kg/m<sup>2</sup> (100 lb / in<sup>2</sup>)":

b. To the side of the covers of the fuel tanks:

For models EMB-110 (C-95), EMB-110C, EMB-110E, EMB-110F, EMB-110P:

"PWA-522

REF. TO-1C-95-2-2"

For models EMB-110P2, EMB-110K1 and EMB-110P1:

"FUEL" - JP-1 (QAV-1) - JP-4

"SEE FLIGHT MANUAL"

"860 LITERS (227 GALLONS)"

**NOTE 2  
(Cont.)**

- c. To the side of the covers of oil tanks:
    - "OIL"
    - "SEE FLIGHT MANUAL"
    - "8,7 LITERS (2.3 GALLONS)"
  - d. In emergency exit, in red:
    - "EMERGENCY EXIT"
  - e. In the cabin, in a clearly visible place to the pilot:
    - 1. "THIS AIRCRAFT MUST BE OPERATED IN NORMAL CATEGORY IN ACCORDANCE WITH THE OPERATIONAL LIMITATIONS ESTABLISHED IN THE FLIGHT MANUAL, MARKINGS AND PLACARDS.
    - 2. Placard specifying the types of approved operations (VFR, IFR day or night) and the meteorological conditions for which the operation of the aircraft is limited or forbidden in function of the installed equipment.
    - 3. "VMO - Maximum Landing gear extended and Operating Speed \*" (indicated)
      - until 14 000 ft = 230 kt
      - for each 1 000 ft above 14 000 ft decrease 5 kt".
    - 4. For aircraft approved under the SFAR-41 (See Note 11):
      - "THIS AIRCRAFT IS APPROVED ACCORDING TO SFAR-41A FOR PMD OF 5 900 KGF (13 007.3 LBS) AND PMP OF 5 700 KGF (12 566.3 LBS)".
  - f. In the panel of instruments:
    - 1. closed the airspeed indicator:
      - for the models C-95, EMB-110C, EMB-110E, EMB-110F, EMB-110P, EMB-110B1 and EMB-110S1:
        - " INDICATED AIRSPEED OF MANEUVER: 169 kt"
        - " MAXIMUM INDICATED AIRSPEED FOR OPERATION OF THE LANDING GEAR: 145 kt"
      - for the models EMB-110P2, EMB-110K1 and EMB-110P1:
        - " INDICATED AIRSPEED OF MANEUVER: 169 kt"
        - " MAXIMUM INDICATED AIRSPEED FOR OPERATION OF THE LANDING GEAR: 146 kt"
    - 2. "THE ACROBATIC MANEUVERS ARE FORBIDEN, INCLUDE SPIN".
  - g. In the equipment of safety (oxygen system, fire extinguisher, etc): Placard or marking indicating clearly the operation method.
  - h. To the side of the compartment of the security equipment: Placard of identification.
  - i. To the side of the seat of photo operator of EMB-110B1:
    - "FORBIDEN THE SEAT UTILIZATION DURING THE LANDING AND TAKEOFF ".
  - j. To the side of the seat of equipments operator of EMB-110S1:
    - "FORBIDEN THE SEAT UTILIZATION DURING THE LANDING AND TAKEOFF ".
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**NOTE 3** Continuing Airworthiness.

The life limit of the structure and other parts considered as essential for the security of the aircraft are listed in the Maintenance Manual (OT-1C95-2), for the models EMB-110 (FAB C-95), EMB-110C, EMB-110E, EMB-110F, EMB-110P, EMB-110B1 and EMB-110S1, and in the approved Flight Manual for the models EMB-110P2, EMB-110K1 and EMB-110P1.

The most important are:

- mainframe (wing, central station, fuselage and empennages): life limit of 30 000 flight hours, except for the Model EMB-110S1; by means of the incorporation of the Service Bulletin nº 110-057-0023, this life limit can be extended to 45 000 flight hours.
- front inferior structure of the setting wing-fuselage (central station of the wing):
  - life limit of 17 000 flight hours for the aircraft EMB-110 (FAB C-95) series number 110001 to 110439. With the incorporation of the Service Bulletin number 110-51-0005 the life limit is extended to 30 000 flight hours;
  - life limit of 30 000 flight hours for the aircraft EMB-110 (FAB C-95) series number 110440 and following;
  - engine mounted P/N 4A 6400: life limited 21 000 flight hours;
  - nuts upper/lower of the accumulators of pressure of the normal brake and main generation (P/N 6359-A): life limit of 20 000 landings.
  - superior half-connecting rod of constraint P/N 14284A and 14334A: life limit of 18 750 landings.
  - pipe of the piston of the main landing gear P/N 14333-000-01 or -02: life limit of 50 000 landings.
  - for the Model EMB-110S1, the life limit of the mainframe is of 15 000 flight hours and the life limit of the front inferior structure of the setting wing-fuselage is of 8 500 flight hours.

All the Bulletins of Service emitted by the EMBRAER are approved by the CTA. A declaration of this fact will have to be placed in each Bulletin.

**NOTE 4** Deflections of the compensator of rudder:

a. For the models EMB-110, EMB-110C, EMB-110E, EMB-110F, EMB-110P and EMB-110B1:

- commanded:  $23^{\circ} + 5^{\circ}$  for each side
- Automatic Command:  $13^{\circ} + 1^{\circ}$  (rudder deflection of  $30^{\circ}$  to right the deflection of compensator will be of  $13^{\circ} + 1^{\circ}$  to the left, starting position of  $0^{\circ}$  helm in neutral position).

b. For the Model EMB-110S1:

- Commanded:  $23^{\circ} + 5^{\circ}$  for each side
- For the case of EMB-110S1 it does not have automatism of the compensator (with the deflection of the rudder, the compensator keeps the previously position).

**NOTE 5**

It is allowed the utilization of aviation gasoline of any octane rating (MIL-G-7752) for a total period not superior to 150 hours of operation between general revisions of the engine

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- NOTE 6**
- a. Canceled.
  - b. For the models EMB-110K1 and EMB-110P1, when operating in transport of charging with the load compartment in the classification A (as defined in the Operation Manual), always two crew are demanded..
  - c. The Models EMB-110P2, EMB-110K1 and EMB-110P1 can be operated in conditions IFR for one pilot only, if beyond the minimum equipment demanded by the applicable operational regulations, a headset and an approved, operational and endowed with approach way automatic pilot were installed in aircraft (consult the Flight manual to identify the approved models).
- NOTE 7** The Military aircraft EMB-110K1 (C-95A) can be converted for civil utilization as cargo transport, since that the all-necessary modifications are incorporated to establish the agreement with the type project approved. For operation with maximum take-off weight of 12 500 lb (5670 kg) and maximum landing weight of 12 015 lb (5 450 kg) will have to be incorporated the modifications defined for the Orders of Engineering of EMBRAER in the numbers EMB-110P1-088, -0094, -0084 and -0083, EMB-110K1-0395, EMB-110P2-0555 and -0582.
- NOTE 8** The modifications required by the "Civilian Aviation Authority" (CAA) for the exported aircraft to England, defined by drawings EMBRAER N° 110P2-9001, were equally approved by the CTA for models EMB-110K1, national EMB-110P1 and EMB-110P2, with the following exceptions: - the fire slive in the vent line of main sigh of the fuel tanks will not have to be removed; and the exit of front right emergency is required in models EMB-110P2, EMB-110P1 and EMB-110K1.
- NOTE 9** In the Model EMB-110K1 is allowed the installation of a detachable front emergency window and forecast an exit from the aircraft consisting of a rope settled to the internal structure of fuselage (under drawings EMBRAER N<sup>o</sup>s 4A-1240 and 110K1-850-11-02).
- NOTE 10** For models EMB-110, 110C, 110E, 110F, 110P, 110B1 and 110S1 the Maneuvering Speed change with the weight under the following table:
- | Weight kgf(lb) | Maneuvering Speed kt<br>(IAS) |
|----------------|-------------------------------|
| 5 600 (12 346) | 169                           |
| 5 300 (11 684) | 165                           |
| 4 500 (9 921)  | 153                           |
| 4 000 (8 818)  | 146                           |
| 3 500 (7 716)  | 138                           |
| 3 200 (7 055)  | 133                           |
- NOTE 11** The aircraft 110K1/P1/P2 changed by factory in drawing EMBRAER n°. 110P1-9000 revision K, or the aircraft of these models in operation modified according to Bulletin of Service EMBRAER in the 110-00-003, fulfills with RBHA 1348/01 (SFAR-41 until Amendment A, effective in 14 Abr. 1980). For these aircraft, the following modifications according the data in paragraphs VIII, IX and X of this Specification of Aircraft are applicable:

- NOTE 11 (Cont.)** – CG Range(Landing gear extended):
- 6 548mm (258 in) (12,5%) to 6 909 mm (272 in) (31%) with 5 900 kgf(13 007 lb)
  - 6 526mm (257 in) (11,4%) to 6 909 mm (272 in) (31%) with 5 700 kgf(12 566 lb) (for landing)
  - 6 491mm (256 in) ( 9,6%) to 6 909 mm (272 in) (31%) with 5 700 kgf(12 566 lb) (for takeoff)
  - 6 476mm (255 in) ( 8,8%) to 6 909 mm (272 in) (31%) with 5 450 kgf(12 015.2 lb)
  - 251 in (6 382mm) ( 4,0%) to 272 in (6 909 mm) (31%) with 4 000 kgf(8818.5 lb) or less
- Straight-line variation between given points.
- Approved maximum weight:
- |             |                       |
|-------------|-----------------------|
| - Takeoff   | 5 900 kgf (13 007 lb) |
| - Landing   | 5 700 kgf (12 566 lb) |
| - Zero Fuel | 5 450 kg f(12 015 lb) |
| - Ramp      | 5 930 kgf (13 073 lb) |
- (See Note 1.a)

In addition, the Airworthiness Certificate of these aircraft must incorporate following note: "CERTIFIED AIRCRAFT ACCORDING THE RBHA 1348/01 (SFAR-41A). IT DOES NOT COMPLY INTEGRALLY WITH THE REQUIREMENTS IN ANNEX 8 OF THE ICAO, FOR WEIGHTS ABOVE OF 12 500 LB (5670 KG)."

- NOTE 12** For cargo service operation, Model EMB-110P1 or EMB-110K1 must be equipped with:
- Cargo compartment class E (see Operation Manual):
    - Cargo net for 9g (EMBRAER drawing 110P1-9878-10-01)
    - Anti-smoke curtain (EMBRAER drawing 110P1-9878-10-15)
    - Smoke detection System (EMBRAER drawing 110-9788-10-01)
    - Protective breathing system and full face oxygen masks (EMBRAER Drawing 110P1-710-10).
    - Retention cargo net 3g (see Operation Manual).
  - Cargo compartment class A (see Operation Manual):
    - Retention cargo net 3g (see Operation Manual)..

- NOTE 13** The Aircraft 110K1/P1/P2 will be able to have its maximum weight of landing increased for 5 670 kgf (12 500 lb) if incorporated in factory the main landing gear equipped with P/N 14575B or C and P/N 14570B or C, or, for the aircraft in operation, that incorporate the Bulletin of Service EMBRAER n<sup>o</sup>. 110-32-047. In this case the limits of change of CG are the following (Landing gear extended):
- 6 520mm (256.7 in) (11,1%) until 6909 mm (272 in) (31%) with 5670 kgf (12 500 lb) (for landing)
  - 6 489mm (255 in) ( 9,5%) until 6 909 mm (272 in) (31%) with 5 670 kgf (12 500 lb) (for takeoff)
  - 6476mm (255 in) ( 8,8%) to 6 909 mm (272 in) (31%) with 5 450 kgf (12 015 lb)
- Straight-line variation between given points.

- NOTE 14** The new stabilizer with 10<sup>o</sup> of dihedral could be installed by the Service Bulletin EMBRAER n<sup>o</sup> 110-055-0022. The aircraft serial number 110439 and up have this modification incorporated by plant.
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- NOTE 15**
- a) Model EMB-110C is derived from basic model EMB-110 through the modifications in the floor, internal finishing, arrangement of the cabin and electrical system, as defined by the EMBRAER drawings:
- Central Fuselage II 110-QD-1310
  - Structure of back fuselage 110-QD-1410
  - Electrical System 110-QD-780-10
  - Internal Commercial disposal 110C-850-10
  - Coating setting 110-872-10
  - Coating Panels 110-QD-863-10
- b) Model EMB-110F is derived from basic model EMB-110 through the modifications in the floor, fuselage structure, internal finishing and electrical system, as defined by the EMBRAER drawings:
- Central Fuselage II 110F-1310
  - Structure of back fuselage 110F-1410
  - Electrical System 110F-780-10
  - Cargo Internal disposal 110F-850-10
  - Coating setting 110F-877-10
  - Panel of internal coating 110F-863-14
  - Set of the System of Load Knotting 110F-875-10
- c) Model EMB-110E is derived from basic model EMB-110 through modifications in the structure of the fuselage, floor, internal finishing and of the electrical system, as defined for the EMBRAER drawings:
- Fuselage set 110E-1000
  - Central Fuselage II 110E-1310
  - Electrical System 110E-780-10
  - Internal executive disposal 110E-850-10
  - Coating setting 110E-878-10
  - Panel of internal coating 110E-873-10
- d) Model EMB-110P is derived from basic model EMB-110 through the opening of an additional emergency exit, modifications in the fuselage and floor, new seats and internal arrangement, as defined for the EMBRAER drawing 110P-0000: Set of the equipped aircraft.
- e) Model EMB-110B1 is derived from basic model EMB-110E, through the opening of the inferior part of the back fuselage, modifications of the systems of command of the rudder, tail, oxygen, hydraulic and electric, modifications in the floor and internal arrangement, as defined for the EMBRAER drawings:
- Equipped Fuselage 110B1-0010
  - Fuselage structure 110B1-1000
  - Structure of Compartment of Chambers 110B1-1000-01
  - Fairings 110B-1000-11/12
  - Passenger cabin floor 110B1-1011-40
  - Door assembly 110B-1251
  - Tail Command 10B-500-10
  - Rudder Command 10B-501-10
  - Trim Command 110B-506-10
  - Internal disposal 110B1-850-11
  - Electrical installation 110B1-9782-10-01
  - Oxygen System 110B1-710-10
  - Hydraulic System 110B1-720-10
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- NOTE 15 (Cont.)** f) Model EMB-110S1 is derived from the basic model EMB-110, through modifications in the fuselage, wing, exchange of the power plant group, modifications in systems of conditioned air, electric and fuel , in accordance with the drawings EMBRAER :
- Equipped Fuselage 110S-0010
  - Central II Fuselage structure Central II 110S-1310
  - Equipped wing 111-0021/0022
  - Wing structure 111-2010/2020
  - Wing spar box 111-2110/2210
  - Equipped engine 111-600-21/22
  - Fuel System 111-740-21/22
  - Electrical System 110S-780-10
  - Conditioned air system 110S-750-10
  - "Stinger" Installation 110S-0003-10-07
  - Internal disposal 110S-850-10
- g) Model EMB-110P2 is derived from basic model EMB-110, through modifications in the fuselage, changes of the power plant group, new seats and internal arrangement, in accordance with the EMBRAER drawing °: 110P2-0000
- h) Model EMB-110K1 is derived from basic model EMB-110, through modifications in the fuselage, changes of the power plant group, a strengthened floor and a charging door, in accordance with the EMBRAER drawing n°: 110K1-0000
- i) Model EMB-110P1 is derived from basic model EMB-110, through modifications in the fuselage, changes of the power plant group, a strengthened floor and a charging door, in accordance with the EMBRAER drawing 110P1-0000.

Original In The Portuguese Language Signed by:

**HÉLIO TARQUINIO JUNIOR**  
**(Acting Manager, Aeronautical Product Certification)**

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