



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

**TYPE CERTIFICATE DATA SHEET Nº EA-2007T07**

Type Certificate Holder:

**M7 AEROSPACE LP**  
10823 N.E. Entrance  
San Antonio, Texas, 78216  
**USA**

EA-2007T07  
Sheet 01

M7  
SA227-AT

November 2007

This data sheet, which is part of Type Certificate No. 2007T07, prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the airworthiness requirements of the Brazilian Aeronautical Regulations.

**I - Model SA227-AT (Normal Category) approved 19 November 2007.**

**ENGINE** 2 AiResearch TPE331-11U-601G or -611G

**FUEL** Aviation Turbine fuels AirReaserach Specifications  
Type A EMS53111  
Type A-1 EMS53112  
Class A-JP4 and Class B-Type B EMS53113  
Type JP-5 EMS53116

(Fuel shall conform to the specification as listed or to subsequent revisions thereof) (See Note 3)

**ENGINE LIMITS** Static Sea Level Ratings

	Shaft Horse Power (shp)	Gas Gen. Speed (rpm)	Prop. Shaft Speed (rpm)	Exhaust Gas Temp. (EGT) (Single Red Line) (°C)
Take-off (5-min) Dry	1 000	41 730*	1 591*	650
Take-off (5-min) Wet	1 100	41 730*	1 591*	650
Maximum Continuous	1 000	41 730*	1 591*	650
Starting Limit (1- sec)	-	-	-	770

\*See Note 4

**OIL** MIL-L-23699B Conforming to AiResearch Manufacturing Company Specification EMS53110 TYPE II

**PROPELLER AND  
PROPELLER LIMITS**

Number	2
Make	McCauley
Model	4HFR34C652( )(-)L106LA-0
Diameter	269.24 cm (106 in)
Pitch At	76.2 cm (30 in)
Start Locks	6.0° ± 0.5°
Flight Idle	15° ± 0.5
Feathered	88.5° ± 0.5°
Reverse	-5° ± 0.5°

**AIRSPEED LIMITS**

Knots CAS

	Basic	Increased GW (See Note 8)	Optional Increase GW (See Note 9)
Maximum Operating Decrease Maximum Operating Speed 5 knots per 304.8 m (1 000 ft) above 5 181.6 m (17 000 ft)	248	248	248
Maneuvering	174	176	186
Flaps Full Extended	156	159	166
½ Extended	180	180	180
¼ Extended	215	215	215
L. G. Extended	176	176	176
L. G. Operating	176	176	176

**CG RANGE**

(after of Datum)

6.7 m ( 262.3 in) (15.72% MAC) to 7.04 m (277.0 in) (36% MAC)  
at 7 257.5 kg (16 000 lb) (See Note 9)  
6.6 m ( 260.7 in) (13.5% MAC) to 7.04 m (277.0 in) (36% MAC)  
at 6 577 kg (14 500 lb) (See Note 8)  
6.6 m ( 260.0 in) (12.54% MAC) to 7.04 m (277.0 in) (36% MAC)  
at 6 350.3 kg (14 000 lb)  
6.6 m ( 258.5 in) (10.47% MAC) to 7.04 m (277.0 in) (36% MAC)  
at 5 670 kg (12 500 lb) (See Note 6)  
6.5 m ( 257.0 in) (8.4% MAC) to 7.04 m (277.0 in) (36% MAC)  
at 4 989.5 kg (11 000 lb)  
6.5 m ( 257.0 in) (8.4% MAC) to 7.04 m (277.0 in) (36% MAC)  
at 3 731kg (8 225 lb)  
Straight line variation between points given  
Gear retraction moment: - 0.167 m.kg (-14 545 in. lb)

Note: Gear retraction will not move the C.G. beyond approved limits if the airplane is loaded within the gear-down envelope.

**CG RANGE**

(Empty weight)

None

**DATUM**

Located 7. 0 m (274.1 in) forward of wing main (forward) spar centerline

**LEVELING MEANS**

Lateral: Nose baggage Compartment Door Sill  
Longitudinal: Nose baggage Compartment Floor

**MAXIMUM WEIGHT**

	Category			
	Normal (with SFAR 41) kg (lb)	Normal (without SFAR 41) kg (lb) (See Note 6)	Normal (incr.gw with SFAR 41) kg (lb) (See Note 8)	Normal (optional incr.gw with SFAR 41) kg (lb) (See Note 9)
Takeoff	6 350.3 (14 000)	5 715.3 (12 600)	6 622.4 (14 600)	7 302.8 (16 100)
Landing	6 350.3 (14 000)	5 669.9 (12 500)	6 577.1 (14 500)	7 257.5 (16 000)
Zero Fuel	5 955.7 (13130)	5 669.9 (12 500)	6 350.3 (14 000)	7 030.7 (15 500)
Ramp	6 395.6 (14 100)	5 955.7 (13 130)	5 955.7 (13 130)	6 305 (13 900)

**MAXIMUM PASSENGERS**

16 ( Crew at + 2.82 m (+111.0 in )  
See AFM for loading instructions for passenger loading.

**MAXIMUM BAGGAGE AND/OR EQUIPMENT**

Nose Compartment: 362.9 kg (800 lb) 272.2 kg (600 lb )with nose CAWI tanks installed) at +118.62 cm( + 46.7 in)  
Rear Compartment: 385.5 kg (850 lb) at +12.02 m (+ 473.4 in)  
Local Loading on Cargo Floor: 732.4 kg/m<sup>2</sup> (150 lb/sq.ft)

**FUEL CAPACITY**

2 468.1 ℓ Total (652 gal Total)  
1 226.5 ℓ (324 gal) usable in each of 2 wing tanks at 7.15 m (+281.4 in)

See Note 1 for data on unusable fuel

**OIL CAPACITY**

15.5 ℓ Total (14.1 quarts total)  
4.2 ℓ (3.8 quarts) usable in each engine oil tank (+ 205.0)

See Note 1 for data on unusable oil

**MAXIMUM OPERATING ALTITUDE**

7 620 m (31 000 ft)

**CONTROL SURFACE MOVEMENTS**

Elevator:	Up 30° +1°, -1°	Down 15° +1°, -1°
Rudder:	Right 25° +1°, -1°	Left 25° +1°, -1°
Aileron:	Up 18.5° ± 1°	Down 21.5° ± 1°
Wing flaps:		Down 36° ± 1°
Stabilizer:		
(Mechanical Stops):	Up 2.40 ° ± 0.2° L. E	Down 7.80 ° ± 0.2° L. E
	Up 2.15° ± 0.15° L. E	Up 7.55° ± 0.15° L. E
(Electrical Stops):	Up 2.15° ± 0.15° L. E	Up 7.55° ± 0.15° L. E
Tabs (Main Surface in Neutral)		
Aileron:	Up -1°	Down -1°
Rudder:	Right 25° +1.5°, -1.5°	
	Left 25° +1.5°, -1.5°	

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<b>CERTIFICATION BASIS</b> (See Note 3) (See Note 6) (See Note 7)	Brazilian Type Certificate No 2007T07 issued on 19 November 2007 based on the CAR 3, effective 15 May 1956, through Amendments 3-8.  Special Note Conditions outlined in FAA letters dated 19 November 1965; 22 August 1967; 05 February 1968; and 04 April 1968;  RBHA/FAR 23.511 of Amendment 23-7 and FAR 23.175(d) of Amendment 23-14;  Amendment C of SFAR 41 including paragraph 4(c) and the compartment interior requirements of 25.853(a), (b), (b-1), (b-2), and (b-3) in effect on 26 September 1978; and  FAR 36 Appendix F, through Amendments 36-6.  Equivalent safety has been established for RBHA/FAR 23.807(a)(3), Crew Emergency Exit, Specified in SFAR 41.5(e), Doors and Exits.
<b>SERIAL NUMBER ELIGIBLE</b>	A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.
<b>IMPORT ELIGIBILITY</b>	A Brazilian Certificate of Airworthiness may be issued on the basis of on an FAA Export Certificate on Airworthiness (or a third country Export Certificate on Airworthiness, in case of used aircraft imported from such country), including the following statement: "The aircraft covered by this certificate has been inspected, tested and found to be in conformity with the Brazilian approved type design as defined by the Brazilian Type Certificate No 2007T07 and in condition of safe operation". The ANAC Report H.10-2182-0, dated 19 November 2007 or any further revisions, contains the Brazilian requirements for the acceptance of these airplanes.
<b>REQUIRED EQUIPMENT</b>	The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane.

**NOTES:**

- NOTE 1**     Weight and balance. Current weight and balance report including list of equipment in certificated empty weight, and loading instructions when necessary must be provided for each aircraft at the time of original certification. The certificated empty weight and corresponding center of gravity location must include:
- Unusable fuel     13.61 kg (30 lb) at + 716.28 cm ( +282 in)  
Unusable Oil     5.4 kg (12 lb) at + 520.7 cm (+ 205 in)
- NOTE 2**     Markings and placards. The airplane must be operated according to the appropriate FAA approved Brazilian Airplane Flight Manual and in the chapter XI of the Airplane Maintenance Manual.
- NOTE 3**     Continuing Airworthiness. See Maintenance Manual, Chapter 4, "Airworthiness Limitations" for inspections, mandatory retirement life information, and other requirements for continued airworthiness
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- NOTE 4** Emergency use of MIL-G-5572D grade 80/87 only aviation gasoline permitted not to exceed 3785.4 ℓ (1 000 gal) per engine for each 100 hours of engine operation. Emergency use of MIL-G-5572D, Grade 100/130 (low lead), aviation gasoline permitted not to exceed 946.35 ℓ (250 gal) per engine for each 100 hours of engine operation, with the total use limited to 26 498 ℓ (7 000 gal) during any 3 000-hour period. Jet fuel and aviation gasoline may be mixed in any proportion. If 25 percent or more aviation gasoline is used, 946.4 mℓ (1 quart) of aviation grade oil must be added to provide fuel pump lubrication. Engine log book entry required. Fuel System Icing Inhibitor MIL-I-27686E fuel additive approved not to exceed 0.15 percent by volume. No fuel system anti-icing credit is allowed.
- NOTE 5** The maximum propeller shaft overspeed limit is 1 686 rpm (106%) for 5 seconds and 1 615 rpm (101.5%) for 5 minutes. 100% is defined as 1591 rpm.
- NOTE 6** An "A" designation following the serial number signifies that the airplane is not eligible for SFAR 41 approval of weights greater than 5 669.91 kg (12 500 lb). Certification basis same as noted herein except omit SFAR 41 approval.
- NOTE 7** If the certification basis specifies paragraph 4(b) of SFAR 41, the Airworthiness Certificate shall be endorsed:  
"This airplane at weights in excess of 5 700 kg does not meet the airworthiness requirements of ICAO, as prescribed by Annex 8 of the Convention on International Civil Aviation" and the basic Airplane Flight Manual must contain FAA approved SFAR 41 data. If the certification basis specifies paragraph 4(c) of SFAR 41, the airplane at weights in excess of 5 700 kg does meet the airworthiness requirements of ICAO, as prescribed by Annex 8 of the Convention on International Civil Aviation and the endorsement specified above should not be included on the airworthiness certificate. However, the Airplane Flight Manual must contain FAA approved SFAR 41 data.
- NOTE 8** The increased ramp and takeoff gross weight applies to aircraft serial numbers AT511 and subsequent. Aircraft with serial numbers AT423 through AT506 may be operated at the increased ramp and takeoff gross weight noted after modification in accordance with Fairchild Swearingen Service Bulletin SB 11-001 revised 11 December 1981.
- NOTE 9** Airplanes with a 6 577 kg (14 500 lb) maximum takeoff weight can be modified for a 7 257.5 kg (16 000 lb) maximum gross takeoff weight if the modification is performed in accordance with ECP 437 "Compilation of changes a 7 257.5 kg (16 000 lb) airplane" and a letter "B" is affixed at the end of the serial number on the data plate.

  
for **CLÁUDIO PASSOS SIMÃO**  
Gerente Geral, Certificação de Produtos Aeronáuticos  
(Manager, Aeronautical Products Certification)