



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EA 2001T07

Type Certificate Holder:

HAWKER BEECHCRAFT CORPORATION

9709 East Central
Wichita, Kansas 67201
USA

EA-2001T07-04
Sheet 01

HAWKER

390

22 July 2010

This data sheet, which is part of Type Certificate No. 2001T07, 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 390 (Premier I) (Normal Category), approved 31 October 2002.

ENGINE

Two Williams-Rolls, Inc. International FJ44-2A turbofans

FUEL

Commercial kerosene JET A, JET A-1, per ASTM –D-1655, or JP-8 per MIL-T-83133 (Limited use Av-gas 100LL per ASTM D910. Limited to 5 000 gallons per engine between major periodic inspections. Operation is limited to 10 000 feet and below with the electric boost pumps on per AFM procedures).

Fuels not containing icing inhibitors must have MIL-1-27686 or MIL-I-85470 fuel system icing inhibitor added in amounts of not less than 0.10% nor more than 0.15% by volume. Minimum fuel icing inhibitor content during refueling is 0.10% by volume.

Dupont Stadis 450 anti-static additive or equivalent is permitted to bring fuel up to 300 conductive units, but not to exceed 1 part per million (ppm).

SOHIO Biobor JF biocide additive or equivalent is permitted at a concentration not to exceed 20 ppm (270 ppm total additive) of elemental boron.

ENGINE LIMITS

Static Thrust, Standard, Sea Level:

- Take-off (5 min): 1 043 kg (2 300 lb)
- Maximum Continuous: 1 043 kg (2 300 lb)

Maximum Steady State Rotor Speeds:

- Low pressure rotor (N1) (30 seconds): 106.4%
 - Low pressure rotor (N1): 105.2%
 - High pressure rotor (N2): 98.8%
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ENGINE LIMITS (Cont.)	Turbine Interstage Temperature Limits:	
	- Engine starting:	805°C
	- Engine starting (30 seconds):	900°C
	- Engine starting (15 seconds):	1 000°C
	- Maximum take-off (5 min):	820°C
	- Maximum take-off (10 second):	835°C
	- Maximum continuous:	805°C
OIL	See Note 6	
AIRSPPEED LIMITS (CAS)	Maximum Operating (V_{MO}):	
	- Sea level to 8 412 m (27 600 ft)	320 kt
	Maximum operating (M_{MO}):	
	- Above 27 600 ft	0.80 M
	Maneuvering (V_A) - sea level:	200 kt
	Flaps extended (V_{FE}):	
	- flaps 10°	200 kt
	- flaps 20°	200 kt
	- flaps 30°	170 kt
	Minimum control speed (V_{MCA}):	
	- flaps up	102 kt
	- flaps 10°	97 kt
	- flaps 20°	93 kt
	Minimum control speed (V_{MCL}) - flaps 30°:	91 kt
	Landing Gear Extended (V_{LE}) - Extension:	200 kt
	Landing Gear Operation (V_{LO}) - Retraction:	180 kt
C. G. RANGE (Landing Gear Extended)	Forward C.G. up to 5 670 kg (12 500 lb): F.S. 747.70 cm (294.37 in). Aft C.G. up to 4 535 kg (10 000 lb): F.S. 772.08 cm (303.97 in). Aft C.G. up to 5 670 kg (12 500 lb): F.S. 762.36 cm (300.14 in).	
EMPTY WEIGHT CG RANGE	None.	
DATUM	F.S. 0.00 is located 86.36 cm (34.00 inches) forward of the nose of the aircraft.	
LEVELING MEANS	Level is determined with a level gauge placed on the cabin door floor longeron.	
MEAN AERODYNAMIC CHORD	168.25 cm (66.24 in). The leading edge of the mean aerodynamic chord is 707.31 cm (278.47 inches) aft of the datum.	
MAXIMUM WEIGHT	Takeoff:	5 670 kg (12 500 lb)
	Landing:	5 262 kg (11 600 lb)
	Zero Fuel:	4 535 kg (10 000 lb)
	Ramp:	5 711 kg (12 591 lb)

MINIMUM CREW	One pilot		
NUMBER OF SEATS	2 crew, 6 passengers		
MAXIMUM BAGGAGE	Nose baggage:	68.0 Kg (150 lb)	
	Aft Cabin baggage	63.5 Kg (140 lb)	
	Aft Fuselage baggage – forward	90.7 Kg (200 lb)	
	Aft Fuselage baggage – aft	90.7 Kg (200 lb)	
FUEL CAPACITY	Gravity fill: 2 093 liters (552.8 US gal) total at 738.6 cm (290.8 in), 2 040 liters (539 US gal) usable. Single point: 2 051 liters (541.8 US gal) total at 736.09 cm (289.8 in), 1 999 liters (528 US gal) usable. Refer to Note 1 for data on unusable and undrainable fuel.		
OIL CAPACITY	Each engine: - usable: 2.32 liters (2.5 US quarts) - total: 4.64 liters (5 US quarts)		
WING ANTI-ICE FLUID	SAE AMS 1424 type 1, ISO 11075 type 1		
MAXIMUM OPERATING ALTITUDE	12 497 m (41 000 ft).		
TEMPERATURE OPERATING LIMITS	Maximum: ISA +37°C Minimum: - 40°C		
CONTROL SURFACE MOVEMENTS	Elevator:	up 20°+1°/-0°	down 9.6°+1°/-0
	Elevator Trim:	up 3.06°±0.5°	down 12.6°±0.5°
	Horiz. Tail Incidence	leading edge up	1.4°±0.2°
		leading edge down	7°±0.2°
	Rudder:	right 25°+1°/-0°	left 25°+1°/-0°
	Rudder Trim:	right 20°+1°/-0°	left 20°+1°/-0°
	Aileron:	up 15.5°+0.5°/-0°	down 12.5°+0°/-0.5°
	Aileron Trim:	lh up 20°±1°	lh down 20°±1°
		rh up 20°±2°	rh down 20°±2°
	Wing Flap:	takeoff 0°, 10°, 20°	*multiple tolerances
		landing 30°	*multiple tolerances
	Roll spoiler-flaps>20°:	outboard panels	9.0°±0.7°
		mid panels	8.05°±1.05°
	Roll spoiler-flaps down:	outboard panels	4.3°±0.4°
		mid panels	3.55°±0.75°
	Speedbrake:	outboard panels	23°±0.3°
		mid panels	23°+0°/-1.8°
	Lift Dump:	inboard panels	60°±4°
		mid panels	45°+0°/-3.1°
		outboards panels	45°+1°/-1.5°
	*See Specification BS25190, BS25191 and BS25192 or Maintenance Manual for rigging tolerances.		

S/N'S ELIGIBLE

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.

IMPORT ELIGIBILITY

A Brazilian Certificate of Airworthiness may be issued on the basis of an FAA Export Certificate of Airworthiness (or a third country Export Certificate of 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.2001T07 and in condition of safe operation".

The Brazilian Report H.10-2100-01, dated 25 July 2007 or further revisions, contains the Brazilian requirements for the acceptance of these airplanes. (See note 4)

CERTIFICATION BASIS

The certification basis for the aircraft model is:

- RBHA 23 corresponding to the FAR 23, effective 01 February 1965, as amended by Amdts. 23-1 through 23-52;
- RBHA 36 corresponding to the FAR 36 effective 01 December 1969, as amended by Amdts. 36-1 through 36-22;
- RBHA 34 corresponding to the FAR 34 as amended by Amdts. 34-1 through 34-3;
- Special Conditions as follows:

(1) 23-096-SC and 23-096A-SC additional requirements for: performance, stalling speed, takeoff speeds, takeoff performance, accelerate-stop distance, takeoff path, takeoff distance and takeoff run, takeoff flight path, climb, climb all engines operating, takeoff climb one engine inoperative, climb one engine inoperative, reference landing approach speed, landing distance, balked landing, longitudinal control, minimum control speed, control during landings, trim, stability, static longitudinal stability, demonstration of static longitudinal stability, static directional and lateral stability, dynamic stability, wings level stall, turning flight and accelerated turning stalls, stall warning, vibration and buffeting, high speed characteristics, out-of-trim characteristics, flutter, takeoff warning system, engine fire extinguishing system, fire extinguishing agents, extinguishing agent containers, fire extinguishing system materials, airspeed indicating system, static pressure system, operating limitations and information, airspeed limitations, minimum control speed, minimum flight crew, markings and placards, airspeed indicator, airplane flight manual and approved manual material, operating limitations, operating procedures, and performance information.

(2) SC23.A Effects of Contamination on Natural Laminar Flow Airfoils; and

(3) 23-122-SC-HIRF.

CERTIFICATION BASIS (Cont.)

- Exemptions as follows:

- (1) No. 6558 for landing gear loads from RBHA/FAR 23.25, 23.29, 23.235, 23.471, 23.473, 23.479, 23.481, 23.483, 23.485, 23.493, 23.49, 23.723, 23.725, 23.726, 23.727, 23.959, 23.1583(c)(1) and (2), Appendix C23.1, Appendix D23.1. Compliance has been shown for the additional requirements as specified in the exemption and identified as paragraphs 1 through 25. Any change in type design must also show compliance with these additional requirements.
- (2) No. 7190 partial exemption from the requirements of 23.181(b).

- Equivalent Level of Safety Findings as follows:

- (1) No. ACE-99-11 RBHA/FAR 23.853(a) for small parts that would not contribute significantly to the propagation of fire. The compensating feature for this equivalent level of safety was compliance with the vertical burn requirements of RBHA/FAR 23, Appendix F for larger interior furnishings and panels.
- (2) No. ACE-00-02 RBHA/FAR 23.1305(a)(2), (a)(3), (c)(2), (c)(5) and 23.1549(a) through (c) for direct reading digital only displays.

Compliance with ice protection has been demonstrated in accordance with RBHA/FAR 23.1419.

PRODUCTION CERTIFICATION

FAA Production Certificate No. PC-8 Delegation Option Manufacturing No. DOA-230339-CE.

REQUIRED EQUIPMENT

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 data, loading information and a list of equipment included in empty weight must be provided for each airplane at the time of original certification.

(Basic empty weight includes unusable fuel of 47.7 kg (105.2 lb) for gravity fill, 5.7 kg (12.5 lb) undrainable; 49.5 kg (109.2 lb) for single point refueling, 7.5 kg (16.5 lb) undrainable.

Basic empty weight includes engine oil of 7.8 kg (17.2 lb).

Basic empty weight includes hydraulic fluid of 8.251 kg (18.1 lb).

NOTE 2 Markings and placards. All markings and placards for passenger information, external markings for emergency, and load limits in cargo/baggage compartments must be presented in Portuguese or bilingual. A list of these placards and the respective translations acceptable to ANAC is provided in the report H.10-2100-01. All placards required in the FAA approved Brazilian Flight Manual must be installed in the appropriate location.

- NOTE 3** Continuing Airworthiness. Service Life Limits and required Maintenance/Inspections.
- (a) Airframe components, which are life limited, and associated retirement times, are presented in FAA/ANAC approved chapter 4 of the Model 390 Maintenance Manual, P/N 390-590001-15, and must be replaced as indicated therein.
 - (b) Engine life limits, established for critical rotating components, are published in the approved Engine Light Maintenance Manual, Report Number 72.08.03, Airworthiness Limitation Section.
 - (c) Required maintenance and inspections to maintain airworthiness based on involving reliability are presented in FAA/ANAC approved chapter 4 of the Model 390 Maintenance Manual, P/N 390-590001-15.

The aircraft must be operated in accordance with FAA approved Airplane Flight Manual P/N 390-590001-3A1 or later FAA approved version.

- NOTE 4** The differences of the Brazilian airplanes in relation to the basic FAA type design are summarized below:
- 1 - The Brazilian Airplane Flight Manual;
 - 2 - Markings and placards.

- NOTE 5** The Model 390 is approved for the single seating installation shown in the AFM. Removal, alteration or relocation of seats, restraint systems, cabinets or tables is subject to approval by FAA Wichita ACO and the ANAC.

- NOTE 6** Qualified Oils:
Engine: Synthetic oil conforming to MIL-L 23699.
See engine Operating Instructions and Maintenance Manual for approved oil brands.

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