COMANDO DA AERONÁUTICA
DEPARTAMENTO DE PESQUISAS E DESENVOLVIMENTO
CENTRO TÉCNICO AEROESPACIAL

TYPE CERTIFICATE DATA SHEET Nº ER-2002T04

Type Certificate Holder:

SCHWEIZER AIRCRAFT CORP.
Elmira, NY - 14903
USA

ER-2002T04
Sheet 01

SCHWEIZER

269D CONFIG. A

August 2002

This data sheet, which is part of Type Certificate No. 2002T04, 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 269D Configuration A (Normal Category), approved 20 August 2002.

ENGINE

Rolls Royce Model 250-C20W (See TCDS N°. EM-8212-02).

FUEL

Grade JP-4 or JP-5 per MIL-T-5624, Jet A, A-1, or B per ASTM D-1655 and Grade JP-8 per MIL-T-83133.
Refer to Rotorcraft Flight Manual and/or Rolls-Royce Operation and Maintenance manual for limitation and special operating conditions.

ENGINE LIMITS

	Power (hp)	Torque (psi)	TOT (°C)
Maximum continuous:	232	62.2	738
Takeoff:	253 (5 min. limit)	67.6	810
Transient over torque:	263 (15 sec. limit)	70.3	-
Start up and shut down:	-	-	810 to 927 (for 10 sec)

Maximum N_1: 105% rpm
N_1 idle speed: 59% to 65%
100% N_1: 50 970 rpm
Installed power turbine limit (90% N_2) = 29 961 rpm
Installed power output shaft limit (90% N_2) = 5 414 rpm

Engine oil limitations:
- continuous operating range: 0oC to 107oC
- oil pressure 50 - 130 psi with following minimums:
  90 psi at or above 79% N1
  50 psi below 79% N1.

ROTOR LIMITS

Normal operating range: 466 to 471 rpm (89% N_2 to 90% N_2)
Power on: max. rpm: 471 rpm (90% N_2)
min. rpm: 466 rpm (89% N_2)
Power off: max. rpm: 500 rpm
min. rpm: 410 rpm

OIL

MIL-L-7808 (reference Roll-Royce Maintenance Manual 10W2)
MIL-L-23699

AIRSPEED LIMITS

Never exceed (V_{NE}) – sea level:

- Power on	
1 044 to 1 157 kg (2 301 to 2 550 lb)	204 km/h (110 kias)
1 043 (2 301 lb) and below	222 km/h (120 kias)
- Autorotation	174 km/h (94 kias)
- Doors off operation (any combination cabin door(s) off)	204 km/h (110 kias)
Minimum control speed - Air (V_{MCA}):	xxx kcas (xxx kias)

For reduction of V_{NE} with altitude, see Rotorcraft Flight Manual.

C. G. RANGE

(Longitudinal)
Fwd: 2 388 mm (94 in) at 1 157 kg (2 550 lb), varying linearly to 2 337 mm (92 in) at 907 kg (2 000 lb) and below.
Aft: 2 438 mm (96 in) at 1 157 kg (2 550 lb), varying linearly to 2 565 mm (101 in) at 907 kg (2 000 lb) and below.

(Lateral)
Right: Buttline +51 mm (+2 in) at 1 157 kg (2 550 lb), varying linearly to +102 mm (+4 in) at 907 kg (2 000 lb) and below.
Left: Buttline -25 mm (-1 in) at 1 157 kg (2 550 lb), varying linearly to -76 mm (-3 in) at 907 kg (2 000 lb) and below.

Lateral "+" CG is right of aircraft centerline, "-" is left of aircraft centerline, when looking forward.

DATUM

2 540 mm (100 in) forward of the main rotor hub centerline.

LEVELING MEANS

Top of main rotor hub.

MAXIMUM WEIGHT

Normal category operations: 1 157 kg (2 550 lb).
Take-off and landing above 1 219 m (4 000 ft) density altitude limited to 1 134 kg (2 500 lb) or less.

MINIMUM CREW

1 pilot

NUMBER OF SEATS

3-place configuration: 2 at sta. 1 742 mm (68.6 in),
1 at sta. 1 996 mm (78.6 in).
4-place configuration: 2 at sta. 1 742 mm (68.6 in),
2 at sta. 1 996 mm (78.6 in).

MAXIMUM BAGGAGE

Stowage area behind R/H seat sta. 2 134 mm (84 in) limited to 22.5 kg (50 lb).
Stowage area behind L/H seat sta. 2 134 mm (84 in) limited to 22.5 kg (50 lb).
Optional remote baggage compartment sta. 3 175 mm (125 in) limited to 27.2 kg (60 lb).

FUEL CAPACITY

Standard capacity: 230 liters (60.8 US gal) at sta. 2 647 mm (104.2 in), 227 liters (60.0 US gal) usable; unusable fuel 3.0 liters (0.8 US gal).

Extended range capacity: 280 liters (74.1 US gal) sta. 2 647 mm (104.2 in), 276 liters (73.0 US gal) usable; unusable fuel 4.2 liters (1.1 US gal).

OIL CAPACITY

4.3 liters (4.5 quarts); oil tank capacity 2.8 liters (3.0 quarts) at sta. 2 906 mm (114.4 in).

MAXIMUM OPERATING ALTITUDE

3 952 m (13 000 ft) altitude pressure.
Avoid operational areas shown in the Rotorcraft Flight Manual.

ROTOR BLADE AND CONTROL MOVEMENTS

Collective pitch:
- full travel 12^{o}+/-1^{o}
- at down stop 0.75 R, 2.5^{o} +/- 1.5^{o} (low pitch stop to be established in accordance with HMI to obtain proper auto rotation rpm).

Cyclic:
- forward 8.5^{o} to 9.5^{o};
- aft 9.5^{o} to 10.0^{o};
- left 6.5^{o} to 7.5^{o};
- right 6.0^{o} to 7.0^{o}.

Tail rotor collective pitch (blade established at 3/4 radius):
- right pedal (thrust to left) 11^{o} to 13^{o};
- left pedal (thrust to right) 28^{o} to 29^{o}.

S/N'S ELIGIBLE

Optional configuration for production helicopters SN 0026 and subsequent and for all other helicopters incorporating Retrofit Kit no. SA-269D-K-20. Production 'Configuration A' helicopters have "-A" at the end of S/N. Retrofit 'Configuration A' helicopters have no "-A" at the end of S/N. Both production and retrofit helicopters have an additional 'Configuration A' Data Plate affixed next to standard data place.
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 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. 2002T04 and in condition of safe operation".

The CTA Report H.10-1440-00, dated 20 August 2002 or further revisions, contains the Brazilian requirements for the acceptance of these airplanes. (See note 4)

CERTIFICATION BASIS

The certification basis for the rotorcraft Schweizer model 269D config. A includes CAR Part 6, dated 15 January 1951, including Amendment 6-1 through 6-7, and 6-8 except CAR 6.604(c).
Compliance with CAR 6.401(b) effective 17 May 1958, CAR 6.637 effective 1 April 1957 and RBHA/FAR 27.1323 Amendment 27-2 effective 25 February 1968 in lieu of CAR 6.612(a) has been shown.
Applicable RBHA/FAR requirements covering the turbine engine installation per RBHA/FAR 27 thru Amendment 27-21 in effect at time of application (3 November 1987) and noise standards per RBHA/FAR 36 at time of certification are: FAR 21.35(b)(2); RBHA/FAR 27.73(a)(2)(ii); 27.361(a); 27.395; 27.397; 27.399; 27.671; 27.901(b)(4)(c); 27.903(c); 27.907; 27.931; 27.939; 27.951(c); 27.955; 27.959; 27.961; 27.963; 27.965; 27.969; 27.971; 27.973; 27.975; 27.977(a)(2)(b)(c)(d); 27.993; 27.995; 27.997; 27.999; 27.1013(c); 27.1015; 27.1019; 27.1091(d)(e); 27.1093(b); 27.1121; 27.1141(d); 27.1143(d); 27.1145(b); 27.1191(a); 27.1194; 27.1195; 27.1305(f)(g)(n thru s); 27.1323; 27.1353(f)(g); 27.1461; 27.1521(b)(5), (c)(3)(d thru f); 27.1529; 27.1557(c)(i)(iii); 27.1583(b)(1); RBHA/FAR 36 Appendix J, Amdt. 20.

PRODUCTION CERTIFICATION

Production Certificate N° 101.

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 report, including list of equipment included in the certificated empty weight and loading instructions, when necessary, must be provided for each helicopter at the time of original Airworthiness Certification and at all times thereafter (except in the case of operators having an appropriate weight control system). The ballast, whenever necessary, must be carried in accordance with the Loading Instructions in the Rotorcraft Flight Manual.
Unusable fuel, undrainable oil and all hydraulic fluid must be included in the certificated empty weight.

NOTE 2: Markings and placards. The following placard must be displayed in front of and in clear view of the pilot:

"THIS ROTORCRAFT MUST BE OPERATED IN COMPLIANCE WITH THE OPERATING LIMITATIONS SPECIFIED IN THE CTA APPROVED ROTORCRAFT FLIGHT MANUAL. THE AIRWORTHINESS LIMITATIONS SECTION OF THE ROTORCRAFT MAINTENANCE MANUAL MUST BE COMPLIED WITH".

In the aft faced seats it must be installed the following placard:

"HEADREST MUST BE IN PLACE DURING FLIGHT".
"O APOIO DE CABEÇA É REQUERIDO PARA VÔO".

All placards required in the approved Rotorcraft Flight Manual and in the Annex 2 to the CTA report H.10-2100-00 must be installed in the appropriate locations.

NOTE 3: Continuing Airworthiness. The retirement times of critical parts for Model 269D Configuration "A" are listed in the Handbook of Maintenance Instructions, Appendix B, CSP-D-11, Airworthiness Limitations Section, dated 01 March 2002. These values of retirement or service life cannot be increased without approval by FAA Engineering.
Information essential for proper maintenance of the helicopter is contained in the Schweizer 269C/269D Handbooks of Maintenance Instructions.

NOTE 4: The differences of the Brazilian airplanes in relation to the basic FAA type design are summarized below:

1. The FAA approved Brazilian Rotorcraft Flight Manual.
2. Markings and placards in Portuguese language.

NOTE 5: To prevent icing of the fuel system components, all fuel in the tanks, before takeoff, must contain anti-icing additives in accordance with the Rotorcraft Flight Manual.
Blending this additive into the fuel and checking its concentration must be conducted as prescribed in the Rotorcraft Flight Manual.

NOTE 6: Weight and cg limitations:

269D –

Forward CG limit station = 2 388 mm (94 in) at 1 157 kg (2 550 lb) varying linearly to 2 337 mm (92 in) at 907 kg (2 000 lb) and below. Aft CG limit is 2 438 mm (96 in) at 1 157 kg (2 550 lb) varying linearly to 2 565 mm (101 in) at 907 kg (2 000 lb) and below.
Lateral "+" CG is right of the aircraft centerline; lateral "-" CG is left of the aircraft centerline when looking forward.
The right lateral CG limit varies linearly from a gross weight of 1 157 kg (2 550 lb) at buttline +51 mm (+2.0 in) to 907 kg (2 000 lb) and below at buttline +102 mm (+4.0 in).

The left lateral CG limit varies linearly from a gross weight of 1 157 kg (2 550 lb) at buttline –25 mm (–1.0 in) to 907 kg (2 000 lb) and below at buttline –76 mm (–3.0 in).

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