

European Aviation Safety Agency

EASA

TYPE CERTIFICATE
DATA SHEET

PZL SW-4

Type Certificate Holder:

WYTWÓRNIA SPRZĘTU KOMUNIKACYJNEGO "PZL-ŚWIDNIK" SPÓLKA AKCYJNA

Address:

Al. Lotników Polskich 1
21-045 Świdnik
POLAND

Manufacturer:

WYTWÓRNIA SPRZĘTU KOMUNIKACYJNEGO "PZL-ŚWIDNIK" SPÓLKA AKCYJNA

Address:

Al. Lotników Polskich 1
21-045 Świdnik
POLAND

Issue 1: 28 September 2007

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I. General

- 1 **Data Sheet No:**
- 2 **Type / Variant or Model**
- | | |
|------------------------------|----------|
| (a) Type: | PZL SW-4 |
| (b) Variant or Model: | N/A |
- 3 **Airworthiness Category:** Small rotorcraft – Category B
- 4 **Type Certificate Holder:** WYTWÓRNA SPRZĘTU KOMUNIKACYJNEGO "PZL-ŚWIDNIK"
SPÓŁKA AKCYJNA
Al. Lotników Polskich 1
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- 5 **Manufacturer:** WYTWÓRNA SPRZĘTU KOMUNIKACYJNEGO "PZL-ŚWIDNIK"
SPÓŁKA AKCYJNA
Al. Lotników Polskich 1
21-045 Świdnik
POLAND
- 6 **National Certification Date:** 14 November 2002
- 7 **CAO (Poland) Application Date:** 14 April 1994
- 8 **CAO (Poland) Recommendation Date:** N/A
- 9 **EASA Transfer Date:** 28 March 2007 [See Note 2]
- 10 **EASA Type Certificate Issue Date:** 28 September 2007 [See Note 2]

II. Certification Basis

- 1 **Effective Reference Date for determining the applicable requirements:** 16 February 1998
- 2 **Civil Aviation Office (Poland) Certification Date:** 14 November 2002
- 3 **Civil Aviation Office (Poland) Type Certificate Data Sheet No:** BC-217
- 4 **EASA Certification Basis:** As defined in CRI A-01 Issue 3
- 5 **Airworthiness Requirements:** JAR 27 with Amendment 27/98/1 (change 1) effective 16 February 1998,
JAR 36 (Initial issue, 23 May 1998) Sub-part F,
Paragraphs 400, 410, 420, 430, 440, 450.
CS 34 (Initial issue, 17 October 2003). Paragraph 1,
Fuel Venting.
- 6 **Special Conditions:** N/A
- 7 **Reversion and Exemptions:** N/A
- 8 **Equivalent Safety Findings:** N/A
- 9 **Environmental Standards including Noise:** JAR 36 (Initial issue, 23 May 1998) Sub-part F
Paragraphs 400, 410, 420, 430, 440, 450

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: PZL SW-4 HELICOPTER TYPE DEFINITION
Doc No SW-60-0251

2. Description: The PZL SW-4 is a single turboshaft engine, single main rotor helicopter designed to carry up to 5 persons (passengers and crew). It is designed as multipurpose and multi version helicopter for operation in day and night VFR conditions. The minimum crew is one pilot, two pilot version is available.
The helicopter has a conventional rotor system with a three-blade main rotor and two-blade tail rotor. The landing gear is skid type. It is powered by a single Rolls-Royce (formerly Allison) 250 C20-R/2 engine.
Maximum take off weight is 1800kg

3. Equipment: Basic equipment required by airworthiness requirements shall be installed on the helicopter for Airworthiness Certificate release. Refer to Rotorcraft Flight Manual for the equipment list

4. Dimensions:

Fuselage	Length	8,238 m	(27,028 ft)
	Width	1,515 m	(4,970 ft)
		2,280 m	(7,480 ft) with landing gear
	Height	3,139 m	(10,299 ft) with MR hub
Main Rotor:	Fully articulated with three blades – Diameter 9,0 m (29,53 ft)		
Tail Rotor	Teetering type with 2 blades Diameter 1,5 m (4,92 ft)		

5. Engines:

Engine Manufacturer: Rolls-Royce Corporation (formerly Allison Engine Company)
 Engine Designation: One 250-C20R/2
 State of Design Engine TCDS No: E4CE Dated: December 1, 1993 (Department of Transportation Federal Aviation Administration, USA)
 EASA Engine TCDS No: N/A

5.1 Turbine engine:

5.1.1 Installed Engine Limits:

Power rating parameter		Take-Off	Max. Cont.
Torque	Max.	100%	85%
Power turbine speed (continuous)	Max.	103%	103%
	Max. (in descent)	-	108%
	Min.	100%	100%
Gas producer speed (continuous)	Max	105%	105%
Turbine Outlet Temperature	Max	810°C	752°C

5.1.2 Transmission Torque Limits: 100%

6 Fluids (Fuel/Oil/Additives):

6.1 Fuel:

Item	Fuel Type	Conforming to
1	JP-8 (F-34)	MIL-T-83133
2	JP-5 (F-44)	MIL-T-5624
3	Jet A1 (F-35)	ASTM D-1655
4	Jet A	ASTM D-1655
5	JP-1	ASTM D-1555 (corresponds to Jet A)
6	TS-1	GOST 10227-86
7	RT	GOST 16564-71

NOTE : For anti-ice additives – refer to Rotorcraft Flight Manual

6.2 Oil:

Engine oils:

- AeroShell Turbine Oil 555 MIL-PRF-23699F or DEF STAN 91-100 or DOD-L-85734
- AeroShell Turbine Oil 500 MIL-PRF-23699F
- Mobil Jet Oil 254 lub 291 MIL-PRF-23699F HTS
- AeroShell Turbine Oil 560 MIL-PRF-23699F HTS
- Exxon ETO 2197 (BPTO 2197) MIL-PRF-23699F HTS

Gearboxes oils:

- AeroShell Turbine Oil 500 conforming to MIL-L-23699;
- AeroShell Turbine Oil 555 conforming to DOD-L 85734 / DERD 2497;
- Castrol 599 conforming to DERD 2497.

7. Fluid capacities:

7.1 Fuel:

- Total fuel capacity 377,0 kg (471,3 l)
- Unusable fuel 3,8 kg (4,8 l)

7.2 Oil:

- Engine oil capacity 6,32 l
- Main gearbox oil capacity 6,81 l

8. Airspeed limits:

Power-on never exceed speed $V_{NE} = 140$ KIAS (260 km/h)

NOTE: For V_{NE} variations versus actual weight, OAT, and altitude – refer to Limitations Section of Rotorcraft Flight Manual.

Power-off never exceed speed $V_{NE} = 120$ KIAS up to 6560 ft (2000 m) press. altitude

$V_{NE} = V_{NE \text{ POWER-ON}} - 22$ KIAS (40 km/h) above 6560 ft (2000m)

9 Rotor Speed Limits:

Speed range	Rotor speed	
	Power on	Power off or simulation of autorotation
Maximum transient	108 (5 sec)	115 (5 sec)
Maximum continuous	103	108
Maximum continuous (in descent)	108	-
Minimum continuous	100	90
Minimum transient	95 (5 sec)	85 (5 sec)

NOTE : 100% of main rotor speed corresponds to 437,3 rpm

10 Maximum Operating Altitude and Temperature:

Maximum pressure altitude for flight	5000 m (16400 ft)
Maximum pressure altitude for take-off and landing	1000 m (3280 ft)
Outside temperature at sea level	Maximum +34°C Minimum -30°C

NOTE: For variation of altitude with OAT refer to Limitations Section of Rotorcraft Flight Manual.

11. Operating Limitations:

11.1 General:

VFR day / night, operation in known icing conditions is not allowed

11.2 Additional limitations for take-off and landing:

Maximum wind velocity for starting and stopping rotors:	
head wind	48 knots (90 km/h, 25 m/s)
side wind	17 knots (32 km/h, 9 m/s)
tail wind	17 knots (32 km/h, 9 m/s)

Maximum landing slope 5°

12 Maximum Certified Weights:

Maximum take-off and landing weight	1800 kg (3968 lb)
Minimum landing weight	1150 kg (2535 lb)

13. Centre of Gravity Range:

Longitudinal centre of gravity limitations	
aft	500 mm (19,69 ins)
forward	750 mm (29,53 ins)

Lateral centre of gravity limitations	
right	60 mm (2,36 ins)
left	60 mm (2,36 ins)

14. Datum:

The centre of gravity datum position (longitudinal) is 499 mm (19,65 ins) aft from intersection point of the main rotor axis and base plane of the fuselage and on the plane of symmetry of the helicopter (lateral)

15. Levelling Means:

Vertical line from ceiling reference point to the index plate located on the passenger compartment floor

16 Minimum Flight Crew:

One pilot operating from the left hand seat

17 Maximum Passenger Seating Capacity:

4 (four)

18 Passenger Emergency Exit:

2 forward doors are jettisonable
2 rear door window panels are jettisonable

19 Maximum Baggage/Cargo Loads:

In passenger / cargo cabin 323 kg (712 lb)
In baggage compartment 150 kg (330,7 lb)

20 Rotor Blade and control movement: see Maintenance Manual, Doc. No. AE-60 01.04.0 MM (Chapter 6)

21 Auxiliary Power Unit (APU): N/A

22 Life-limited parts: Refer to document AE-60 01 04.0 MM Volume 1, Chapter 4, Subchapter 4 00.00 Airworthiness Limitations

23 Wheels and Tyres: N/A

IV. Operating and Service Instructions

1. Rotorcraft Flight Manual, Document No:

In English AE-60 01.04.1 RFM

2. Maintenance Manual, Document No:

In English AE-60.01.04.0 MM (not yet available)

3. Service Letters and Service Bulletins:

As published by PZL

4. Required Equipment:

Refer to RFM for the approved mandatory and optional equipment

V. Notes

1. Eligible serial numbers: 60.02.02 and subsequent 60.XX.YY numbers (The serial number format is 60 XX.YY where XX is the production batch number and YY is the number within the batch).
2. The November 2002 CAO Type Certification standard was "grandfathered" to become the EASA standard on 28 March 2007. The 'EASA Type Certificate Issue' date reflects the date at which changes to the grandfathered type design resulting from a European Type Certification exercise (initiated prior to EASA) and incorporated into the basic EASA Type Definition of paragraph III,1 were formally accepted and adopted by EASA (i.e. all aircraft falling within the serial number applicability range of Note 1 above conform to the November 2002 plus September 2007 standard)

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