TYPE CERTIFICATE
DATA SHEET

No. EASA.R.100

for
PZL SW-4

Type Certificate Holder
Wytwórnia Sprzętu Komunikacyjnego “PZL-Świdnik” Spółka Akcyjna

Al. Lotników Polskich 1
21-045 Świdnik
Poland

For Model: PZL SW-4
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</table>
SECTION 1: PZL SW-4

I. General

1. Type/Model/Variant
   1.1 Type PZL SW-4
   1.2 Model PZL SW-4
   1.3 Variant - - -

2. Airworthiness Category Small Rotorcraft, Category B

3. Manufacturer Wytwórnia Sprzętu Komunikacyjnego “PZL-Świdnik” Spółka Akcyjna
Al. Lotników Polskich 1
21-045 Świdnik, Poland

4. Type Certification Application Date to ULC 14 April 1994

5. State of Design Authority EASA
(pre EASA: ULC, Poland)

6. Type Certificate Date by ULC 14 November 2002

7. Type Certificate n° by ULC BC-217

8. Type Certificate Data Sheet n° by ULC BC-217

9. EASA Type Certification Date 28 September 2007 (see Note 2)

II. Certification Basis

1. Reference Date for determining the applicable requirements 16 February 1998

2. Airworthiness Requirements
   - JAR 27, Amdt. 27/98/1 (Change 1), effective 16 February 1998;
   - JAR 36 (Initial issue, 23 May 1997), Subpart A Para 2, Subpart E Para .400, .410, .420, .430, .440, .450;
   - CS 34 (Initial issue, 17 October 2003), Paragraph 1, Fuel Venting.

3. Special Conditions none

4. Exemptions none

5. Deviations none

6. Equivalent Safety Findings none

7. Requirements elected to comply none

8. Environmental Protection Requirements
   8.1 Noise Requirements See EASA Type Certificate Data Sheet for Noise TCDSN EASA.R.100

   8.2 Emission Requirements none

9. Operational Suitability Data (OSD) see SECTION 2 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition PZL SW-4 Helicopter Type Definition
   Doc. No SW-60-0251, Revision C, or later

2. Description Multi-purpose/multi version helicopter for VFR day/night.
   Main rotor: Conventional fully articulated, 3 blades
   Tail rotor: Conventional, teetering type, 2 blades
   Fuselage: Metallic primary structure
Landing gear: Conventional skids  
Powerplant: Single turboshaft powered  

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  
4.1 Fuselage  
Length: 8.238 m  
Width of Cabin: 1.515 m  
Landing gear: 2.280 m  
Height: 3.139 m  

4.2 Main Rotor  
Diameter: 9.000 m  

4.3 Tail Rotor  
Diameter: 1.500 m  

5. Engine  
5.1 Model  
Rolls-Royce Corporation (former: Allison Engine Company)  
1 x Model 250-C20R/2  

5.2 Type Certificate  
FAA TC/TCDS: E4CE  
EASA TC/TCDS: EASA.IM.E.052  

5.3 Limitations  
5.3.1 Installed Engine Limits  

<table>
<thead>
<tr>
<th>Max. TQ [%]</th>
<th>Gas producer speed (continuous) [%]</th>
<th>PWR turbine speed continuous [%]</th>
<th>Temperature Outlet Temp. [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP (5 min)</td>
<td>100</td>
<td>105</td>
<td>max. 103 - - - min. 100</td>
</tr>
<tr>
<td>MCP</td>
<td>85(*)</td>
<td>105</td>
<td>max. cont. 103 max. 108 (in descent) min. 100</td>
</tr>
</tbody>
</table>

(*) corresponds to indicated TQ:  
- 85% for helicopters equipped with TQ indicator P/N 4354-3007, and  
- 83% for helicopters equipped with TQ indicator P/N 4354-3011  

5.3.2 Transmission Torque Limits  
100 %  

6. Fluids (Fuel/ Oil/ Additives)  
6.1 Fuel  

<table>
<thead>
<tr>
<th>Item</th>
<th>Fuel type</th>
<th>Conforming to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>JP-8 (F-34)</td>
<td>MIL-T-83133</td>
</tr>
<tr>
<td>2</td>
<td>JP-5 (F-44)</td>
<td>MIL-T–5624</td>
</tr>
<tr>
<td>3</td>
<td>Jet A1 (F-35)</td>
<td>ASTM D-1655</td>
</tr>
<tr>
<td>4</td>
<td>Jet A</td>
<td>ASTM D-1655</td>
</tr>
<tr>
<td>5</td>
<td>JP-1</td>
<td>ASTM D-1555 (corresponds to Jet A)</td>
</tr>
<tr>
<td>6</td>
<td>TS-1</td>
<td>GOST 10227-86</td>
</tr>
<tr>
<td>7</td>
<td>RT</td>
<td>GOST 16564-71</td>
</tr>
</tbody>
</table>
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 or 291 MIL-PRF-23699F HTS
- AeroShell Turbine Oil 560 MIL-PRF-23699F HTS
- Exxon ETO 2197 (BPTO 2197) MIL-PRF-23699F HTS

MGB and TGB 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

6.3 Additives

Refer to approved RFM for fuel anti-ice additives

7. Fluid capacities

7.1 Fuel

Total tank capacity: 471 litres (377 kg)
Usable fuel: 4.8 litres (3.8 kg)

7.2 Oil

Engine: 6.8 litres
6.32 litres (with cooler P/N 60.06.340.00.00)

MGB: 6.81 litres (with cooler 60.06.350.00.00 installed on the fuel cell ceiling panel)
6.0 litres (with cooler P/N 60.06.350.00.00 installed on the engine intake shield)

TGB: 0.38 litre

8. Air Speed Limitations

V\textsubscript{NE PWR-ON}: 140 KIAS (260 km/h)

Note: for V\textsubscript{NE PWR-ON} variations versus actual weight, OAT, and altitude refer to Limitations Section of approved RFM.

V\textsubscript{NE PWR-OFF}: 102 KIAS (190 km/h)

Note: for V\textsubscript{NE PWR-OFF} Variations versus altitude refer to Limitations Section of approved RFM.

V\textsubscript{MIN PWR-OFF} (steady autorotation): 44 KIAS (80 km/h)

9. Rotor Speed Limitations

Power on:
Max. transient (15 sec): 108 %
Max. continuous: 103 %
Max. continuous in descent: 108 %
Min. continuous: 100 %
Min. transient (5 sec): 95 %

Power off:
Max. transient (15 sec): 115 %
Max. continuous: 108 %
Min. continuous: 90 %
Min. transient (5 sec): 85 %

Note: 100% main rotor speed corresponds to 437.3 rpm.

10. Operating Altitude and Temperature Limitations

10.1 Altitude

Max. flight altitude: 16 400 ft (5 000 m) PA
Max. TO/LDG altitude: 9 000 ft (2 742 m) DA

10.2 Temperature

-30°C to +46°C OAT MSL

Note: For variation of altitude with OAT refer to Limitations Section of approved RFM
11. Operating Limitations
   11.1 Kinds of operations
       - VFR day/night
       - no flight into known icing conditions
   11.2 Additional limitations for TO/LDG
       Max. wind velocity for starting and stopping rotor:
       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)
       Max. landing slope: 5°

12. Maximum Mass
    Max. TO/LDG mass: 1 800 kg
    Min. LDG mass: 1 150 kg

13. Centre of Gravity Range
    Longitudinal limitations:
    Aft 500 mm
    Fwd 750 mm
    Lateral limitations:
    Right 60 mm
    Left 60 mm

14. Datum
    Longitudinal:
    The centre of gravity datum position is 499 mm aft from
    intersection point of the main rotor axis and base plane
    of the fuselage.
    Lateral: helicopter symmetry plane

15. Levelling Means
    Vertical line from ceiling reference point to the index
    plate located on the passenger compartment floor

16. Minimum Flight Crew
    1 (one) pilot

17. Maximum Passenger Seating Capacity
    4 (four)

18. Passenger Emergency Exit
    - 2 forward doors are jettisonable
    - 2 forward door window panels are jettisonable from
      s/n 60.04.01
    - 2 rear door window panels are jettisonable

19. Maximum Baggage/ Cargo Loads
    Passenger/cargo cabin: 323 kg
    Baggage compartment: 150 kg

20. Rotor Blade Control Movement
    See Maintenance Manual, Doc. No. AE-60.01.04.0 MM
    (Chapter 6)

21. Auxiliary Power Unit (APU)
    none

22. Life-limited Parts
    Refer to document AE-60.01.04.0.MM Volume 1,
    Chapter 4, Subchapter 4.00.00 Airworthiness Limitations

IV. Operating and Service Instructions
1. Flight Manual
   AE-60.01.04.1 RFM (English), EASA approved
   AE-60.01.04.0 MM (English)
   60.10.000.02.00 (specification of repair manuals)
   AE-60.01.04.0 MM Chapter 8
5. Illustrated Parts Catalogue
   AE 60.02.02.0 IPC Vol. I & II
6. Service Letters and Service Bulletins
   As published by PZL
7. Required equipment
   Refer to approved RFM for mandatory and optional
   equipment
V. Notes

1. Manufacturer's eligible serial numbers:
   s/n 60.02.02, and subsequent 60.XX.YY numbers
   (s/n format is 60.XX.YY where XX is the production batch number and YY the number within the batch).

2. In accordance with the provisions of CR (EU) 1702/2003, Article 2, point 3. (c), the BC-217 Type Certification standard was "grandfathered" to become the EASA standard on 28 March 2007. The "EASA Type Certification 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.
   All aircraft falling within the serial number applicability range of Note 1 above conform to the BC-217 plus "28 September 2007" design standard.

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SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

I. OSD Certification Basis
I.1 Reference Date for determining the applicable OSD requirements
   MMEL: 17 February 2014
   FCD: 10 July 2015 (refer to CRI A-01 OSD)
I.2 MMEL - Certification Basis
   JAR MMEL/MEL Amdt. 1, dated 1 August 2005
I.3 Flight Crew Data - Certification Basis
   CS-FCD – Initial Issue, dated 31 January 2014
I.4 SIM Data - Certification Basis
   reserved
I.5 Maintenance Certifying Staff Data - Certification Basis
   reserved

II. OSD Elements
II.1 MMEL
   PZL SW-4 Master Minimum Equipment List, Document No. AE 60.04.20.0 MMEL (reference in English), Revision 0, dated 6 May 2008, or later EASA approved revision
II.2 Flight Crew Data
   PZL SW-4 Operational Suitability Data - Flight Crew Data, Document No. AE 60.01.04.0 FCD (reference in English), Revision 0, dated 11 January 2018, or later EASA approved revision
II.3 SIM Data
   reserved
II.4 Maintenance Certifying Staff Data
   reserved
### SECTION 3: ADMINISTRATIVE

#### I. Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>ALS</td>
<td>Airworthiness Limitations Section</td>
</tr>
<tr>
<td>Amdt.</td>
<td>Amendment</td>
</tr>
<tr>
<td>C.G.</td>
<td>Centre of Gravity</td>
</tr>
<tr>
<td>CS</td>
<td>Certification Specifications</td>
</tr>
<tr>
<td>DA</td>
<td>Density altitude</td>
</tr>
<tr>
<td>FCD</td>
<td>Flight Crew Data</td>
</tr>
<tr>
<td>fwd</td>
<td>forward (vis-à-vis aft)</td>
</tr>
<tr>
<td>JAR</td>
<td>Joint Aviation Requirements</td>
</tr>
<tr>
<td>LDG</td>
<td>Landing</td>
</tr>
<tr>
<td>LH</td>
<td>Left Hand</td>
</tr>
<tr>
<td>max.</td>
<td>maximum</td>
</tr>
<tr>
<td>MCP</td>
<td>Maximum Continuous Power</td>
</tr>
<tr>
<td>MGB</td>
<td>Main Gear Box</td>
</tr>
<tr>
<td>min.</td>
<td>minimum</td>
</tr>
<tr>
<td>MMEL</td>
<td>Master Minimum Equipment List</td>
</tr>
<tr>
<td>MSL</td>
<td>Mean Sea Level</td>
</tr>
<tr>
<td>OAT</td>
<td>Outside Air Temperature</td>
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<tr>
<td>OSD</td>
<td>Operational Suitability Data</td>
</tr>
<tr>
<td>P/N</td>
<td>Part number</td>
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<tr>
<td>PA</td>
<td>Pressure altitude</td>
</tr>
<tr>
<td>PWR</td>
<td>Power</td>
</tr>
<tr>
<td>RH</td>
<td>Right Hand</td>
</tr>
<tr>
<td>s/n</td>
<td>Serial number</td>
</tr>
<tr>
<td>TGB</td>
<td>Tail Gear Box</td>
</tr>
<tr>
<td>TO/LDG</td>
<td>Take-off/Landing</td>
</tr>
<tr>
<td>TQ</td>
<td>Torque</td>
</tr>
<tr>
<td>ULC</td>
<td>Urząd Lotnictwa Cywilnego</td>
</tr>
<tr>
<td>VNE</td>
<td>Never Exceed Speed</td>
</tr>
<tr>
<td>VNE</td>
<td>Never Exceed Speed</td>
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<td>VNE</td>
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#### II. Type Certificate Holder Record

<table>
<thead>
<tr>
<th>Type Certificate Holder</th>
<th>Period</th>
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<tr>
<td>Wytwórnia Sprzętu Komunikacyjnego “PZL-Świdnik” Spółka Akcyjna Al. Lotników Polskich 1 21-045 Świdnik, Poland</td>
<td>Since 14 November 2002</td>
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#### III. Change Record

<table>
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<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC issue</th>
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<tr>
<td>Issue 1</td>
<td>28 Sep 2007</td>
<td>Initial Issue</td>
<td>Initial Issue, 28 September 2007</td>
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<tr>
<td>Issue 2</td>
<td>31 Mar 2008</td>
<td>Set up of required type design definition after completion of post-TC actions</td>
<td>- - -</td>
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<tr>
<td>Issue 3</td>
<td>26 Oct 2009</td>
<td>’Outside temperature at sea level’ limitation extended</td>
<td>- - -</td>
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<tr>
<td>Issue 4</td>
<td>29 Jul 2011</td>
<td>Environmental standard including noise applicable sections corrected; ’Outside temperature at sea level’ limitation extended</td>
<td>- - -</td>
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<tr>
<td>Issue 5</td>
<td>25 Aug 2011</td>
<td>Abbreviations removed from company name</td>
<td>- - -</td>
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<tr>
<td>Issue 6</td>
<td>7 Dec 2011</td>
<td>Minimum flight crew limitation changed</td>
<td>- - -</td>
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<tr>
<td>Issue 7</td>
<td>14 May 2018</td>
<td>OSD data added; review/correction of data; TCDS format updated</td>
<td>- - -</td>
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