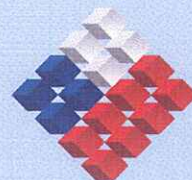




REPÚBLICA DE CHILE
DIRECCIÓN GENERAL DE AERONÁUTICA CIVIL

REPUBLIC OF CHILE
DIRECTORATE GENERAL OF CIVIL AERONAUTICS



GOBIERNO DE CHILE

TYPE CERTIFICATE VALIDATION ACT

Nº: H – A87 – 01 / 10

29 January 2010

- 1.- In accordance with the records and documents submitted by WYTWÓRNA SPRZĘTU KOMUNIKACYJNEGO “PZL-Swidnik” Spółka Akcyjna, domiciled in: Al. Lotników Polskich 1, 21-045 Świdnik, Poland, it has been established that the aeronautical product identified below is of a design, materials, specifications, construction and appropriate performances for a safe operation and it satisfies the current requirements stated in the Chilean Civil Aviation Regulations.

PRODUCT : Rotorcraft
MAKE : PZL Swidnik
MODEL : PZL W-3A

- 2.- The Airworthiness Organization of the Chilean DGAC recognizes as valid the Type Certificate Nº EASA.R.007 and its related Data Sheet, issue 2, dated 08 August 2006, as issued by the European Aviation Safety Agency, for the helicopter above identified, in Transport Category Rotorcraft, in accordance with the conditions and limitations prescribed in the Type Acceptance Data Sheet Nº H-A87-01/10 issued by this DGAC.

GUILLERMO GALLARDO A.
Jefe Sección Ingeniería

CARLOS ROJAS O.
Jefe Sub-Departamento
Aeronavegabilidad



3. **Airworthiness Category:** Transport Category Rotorcraft - Category A and B
4. **Type Certificate Holder:** WYTWÓRNIA SPRZĘTU
KOMUNIKACYJNEGO "PZL-Świdnik"
Spółka Akcyjna
Al. Lotników Polskich 1
21-045 Świdnik
POLAND
5. **Manufacturer:** WYTWÓRNIA SPRZĘTU
KOMUNIKACYJNEGO "PZL-Świdnik"
Spółka Akcyjna
Al. Lotników Polskich 1
21-045 Świdnik
POLAND
6. **National Certification Date:** July 1, 1993 (CAO Poland TCDS No BC-188 Issue 1)
7. **Civil Aviation Office (CAO) (Poland) Application Date:** 1989
8. **CAO (Poland) Recommendation Date:** N/A
9. **EASA Type Certification Date:** 16 June 2006

II. Certification Basis

1. **Reference Date for determining the applicable requirements:** Year 1989
2. **Civil Aviation Office (Poland) Certification Date:**
July 1, 1993 (CAO Poland TCDS No BC-188)
3. **Civil Aviation Office (Poland) Type Certificate Data Sheet** No. BC-188
4. **CAO (Poland) Certification Basis:** 14CFR Part 29, Amendments 29-1 to 29-26
5. **Airworthiness Requirements:** FAR 29 as defined above
6. **Special Conditions:** N/A
7. **Reversion and Exemptions:** N/A
8. **Equivalent Safety Findings:** N/A
9. **Environmental Standards including Noise:**
ICAO Annex 16 VOL. 1 (3rd edition) Chapter 8 & VOL. 2 (2nd edition)

III. Technical Characteristics and Operational Limitations

- 1. Type Design Definition:** Doc. No WW-37.00.263 "List of design groups determining typical design of W-3A helicopter"
- 2. Description:** The PZL W-3A is a twin turboshaft engine, single main rotor helicopter designed to carry up to 14 persons (passengers and crew members). The cockpit can be fitted out with seats, controls and instrumentation for two pilots. The airframe is a semi-monocoque construction made primarily of metal. Certain non structural elements such as cabin doors, cowlings and the horizontal stabilizer are made of glass-epoxy composite materials. The fixed tricycle landing gear includes a swivelling nose gear and the main gear fitted out with disc brakes
- 3. Equipment:** Basic equipment required by the airworthiness requirements (see Certification Basis) shall be installed on the helicopter for Airworthiness Release.
Refer to Rotorcraft Flight Manual for the approved mandatory and optional equipment List.
- 4. Dimensions:**
- | | | | |
|----------|--------|----------|-----------|
| Fuselage | Length | 14.210 m | (46.6 ft) |
| | Width | 1.750 m | (5.7 ft) |
| | Height | 3.308 m | (12.5 ft) |
- Main Rotor: Fully articulated with four blades –
Diameter 15.760 m (51.5 ft)
Tail Rotor: Fully articulated with three blades –
Diameter 3.030 m (9.9 ft)
- 5. Engines:** Two turbo-shaft
Manufacturer: PZL Rzeszów
Designation: PZL-10W
- State of Design (Poland) Engine TCDS No: CC-190 (JAR-E Admt. 8)
Date 20 September 1993
EASA Engine TCDS No: LBA TCDS No 7001 (JAR-E Admt. 8) Date
2 December 1993

5.1 Engine limits:

5.1.1 Installed Engine Limits:

NOTE: 100% of gas producer speed N1 corresponds to 31486 rpm.
100% of power turbine speed N2 corresponds to 22490 rpm.

Gas Producer Speed (N1) Limits

Maximum 2.5-minute OEI	102%
Maximum 30-minute OEI	98%
Maximum takeoff (5 minute)	97%
Maximum continuous	93%

Turbine Outlet Temperature (TOT) Limits

Maximum 2.5-minute OEI	770°C
Maximum 30-minute OEI	735°C
Maximum takeoff (5 minute)	725°C
Maximum continuous	670°C

Power Turbine Speed (N2) Limits

Maximum transient	112% (up to 5 s)
Maximum continuous	105% (normal setting)
Minimum continuous	95%
Minimum transient	85% (up to 15 s)

NOTE Engine Overspeed Protection will activate to shut down the engine at 120% N2.

Torque (TQ) Limits

Twin engine operation:

Maximum takeoff for Nr = 95%	109%
Maximum allowable takeoff for Nr = 100%	103% (up to 5 minutes)
Maximum allowable takeoff for Nr = 105%	98% (up to 5 minutes)
Maximum continuous for Nr = 105%	85%

OEI operation:

Maximum 2.5-minute OEI	139% (Nr = 95% or below)
Maximum 30-minute OEI	121% (Nr = 95% or below)

5.1.2 Transmission Torque Limits:

Twin engine operation:

Maximum takeoff for minimum transient Nr = 95%	2 x 109%
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Maximum allowable takeoff for minimum cont. Nr = 100%	2 x 103%
Maximum allowable takeoff for maximum cont. Nr = 105%	2 x 98%
Maximum continuous for minimum transient Nr = 95%	2 x 95%
Maximum allowable continuous for minimum cont. Nr = 100%	2 x 90%
Maximum allowable continuous for maximum cont. Nr = 105%	2 x 85%

OEI operation:

Maximum 2.5-minute OEI for minimum transient Nr = 85% (up to 15 s)	139%
Maximum allowable 2.5-minute OEI for minimum cont. Nr = 95%	139%
Maximum allowable 2.5-minute OEI for maximum cont. Nr = 105%	127%
Maximum 30-minute OEI for minimum transient Nr = 85% (up to 15 s)	121%
Maximum allowable 30-minute OEI for minimum cont. Nr = 95%	121%
Maximum allowable 30-minute OEI for maximum cont. Nr = 105%	110%

6. Fluids (Fuel/Oil/Additives):

6.1 Approved Fuel Grades

JET A-1	conforming to DERD 2494 or ASTM D 1655-83
TS-1	conforming to GOST 10227-86
RT	conforming to GOST 10227-86
PSM-2	conforming to PN-86/C-96026
T-1 and T-2	conforming to GOST 10227-86 with PMAM or TK additives

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

6.2 Oil

Engine oils

B-3W	conforming to TU 38.101295-85 or GOST 5566-70
CASTROL 5000, CASTROL 5050, AEROSHELL TURBINE OIL 500, ELF TURBO JET II	conforming to MIL-L-23699C
CASTROL 599	conforming to DERD 2497
AEROSHELL TURBINE OIL 555	conforming to DERD 2497

Main Gearbox Oils

B-3W	conforming to TU 38.101295-85 or GOST 5566-70
CASTROL 599	conforming to DERD 2497
AEROSHELL TURBINE OIL 555	conforming to DERD 2497

7. Fluid Capacities:

7.1 Fuel

Total fuel capacity	454.4 US gallons (1720 l)
Maximum amount of fuel filled into each group of fuel cells:	
Engine 1	214.0 US gallons (810 l)
Engine 2	240.4 US gallons (910 l)
Unusable fuel	1.85 US gallons (7 l)

7.2 Oil

Engine oil capacities (each engine):	
Max	2.1 US gallons (8 l)
Min	1.6 US gallons (6 l)
Main gearbox oil capacity, Max	7.9 US gallons (30 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 placards (located in the cockpit on windshield frame and shown in Limitations Section of Rotorcraft Flight Manual).

Power-off never exceed speed V_{NE} 86 KIAS (160 km/h) up to 6500 ft (2000 m) press. alt.
56 KIAS (105 km/h) above 6500 ft (2000 m) press. alt.

9. Rotor Speed Limits:Power-off:

Maximum transient	112%
Maximum continuous	108%
Minimum continuous	90%
Minimum transient	85%

Power-on:

Maximum transient	112% (up to 5 s)
Maximum continuous	105%
Minimum continuous:	
- twin engine operation	100%
- OEI	95%
Minimum transient:	
- twin engine operation	95%
- OEI	85% (up to 15 s)

NOTE: 100% of main rotor speed corresponds to 255.7 rpm.

10. Maximum Operating Altitude and Temperature:

Maximum operating press. altitude	19700 ft (6000 m)
Maximum pressure altitude for takeoff and landing	16400 ft (5000 m)
Engine starting ensured up to altitude	13120 ft (4000 m)

Sea level OAT limits:

Max	(+)43°C
Min	(-)40°C

NOTE: For variation of altitude limits with OAT and segment of flight (takeoff, en route, and landing) refer to Limitations Section of Rotorcraft Flight Manual).

11. Operating Limitations:**11.1 General**

Day and Night VFR, and if fitted out with the additional equipment specified in RFM, under IFR.

Operations in know icing condition are not allowed.

11.2 Additional limitations for take-off and landing:

Maximum Ground Speed for Takeoff, Landing, and Taxiing	
on prepared surface	32 knots (60 km/h)
on unprepared surface	16 knots (30 km/h)

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	11 knots (22 km/h, 6 m/s)

Maximum landing slope 5° (windless conditions, the landing slope limit will decrease in the presence of wind)

12. Maximum Certified Weights:

Maximum takeoff and landing weight	6400 kg (14110 lb)
Minimum takeoff and landing weight	3850 kg (8488 lb)

13. Centre of Gravity Range:

Longitudinal centre of gravity limitations:

Forward	(+)7.3 in (0.185 m)
Aft	(-)1.97 in [(-)0.050 m]

NOTE: For variation of longitudinal centre of gravity with gross weight refer to Limitations Section of Rotorcraft Flight Manual.

Lateral centre of gravity limitations:

±4.7 in (±120 mm) for the indicated airspeed up to 48 KIAS (90 km/h)
 ±3.54 in (±90 mm) for the indicated airspeed above 48 KIAS (90 km/h)

14. Datum:

The Centre of Gravity position is determined in the XYZ coordinate system whose origin is in the intersection point of the main rotor axis and the main rotor hub rotation plane.

The X axis is sensed forward and is defined as an intersection of the rotor plane of rotation on the helicopter plane of symmetry.

The Y axis is sensed upward and aligns with rotor axis.

The Z axis is sensed to the right as viewed from rear.

15. Levelling Means:

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

16. Minimum Flight Crew:

VFR	one pilot operating from the left hand seat
IFR	two pilots

17. Maximum Passenger Seating Capacity:

13 (thirteen) with one pilot

18. Passenger Emergency Exit:

2 (two) located on each side of the passenger cabin

19. Maximum Baggage/Cargo Loads:

In passenger / cargo cabin 2100 kg (4620 lb)

NOTE:For maximum allowable floor load refer to Limitations Section of Rotorcraft Flight Manual.

In baggage compartment 180 kg (396 lb)

NOTE:For baggage compartment shelf load limits refer to Limitations Section of Rotorcraft Flight Manual.

20. Rotor blade and control movement:

Cyclic stick longitudinal travel from neutral position – minimum ± 138 mm ($\pm 5,43$ in)

Cyclic stick lateral travel from neutral position – minimum ± 111 mm ($\pm 4,37$ in)

Swashplate angles for:

cyclic stick in neutral position (-) $1^{\circ} \pm 12'$ (pitch forward)
 $0^{\circ} \pm 12'$ (bank)

cyclic stick in extreme fwd position (-) $8 \pm 18'$ (pitch forward)

cyclic stick in extreme back position (+) $6 \pm 18'$ (pitch backward)

cyclic stick in extreme left position (+) $5 \pm 18'$ (bank left)

cyclic stick in extreme right position (-) $5 \pm 18'$ (bank right)

Collective lever travel from neutral position – minimum ± 144 mm ($\pm 5,67$ in)

Swashplate slider travels for:

collective lever in neutral position 0 mm (0 in)

collective lever at lower extreme 23.5 ± 0.3 mm (0.93 ± 0.012 in) downward

collective lever at upper extreme 23.5 ± 0.3 mm (0.93 ± 0.012 in) upward

Tail rotor pedals travel from neutral position – minimum ± 75 mm (± 2.95 in)

Tail rotor pitch angles for:

tail rotor pedals in neutral position (+) $2^{\circ} 30' \pm 1^{\circ}$

RH pedal moved forward home (+) $23^{\circ} \pm 1^{\circ}$

RH pedal moved backward home (-) $9^{\circ} \pm 1^{\circ}$

21. Auxiliary Power Unit (APU):

N/A

22. Life-limited parts:

Refer to Document AE 30.04.20.1 MM / AE 30.04.20.1 IOT Volume 1, Chapter 4, Subchapter 4.00.00 Airworthiness Limitations, last revision

23. Wheels and Tyres:

Main wheels and 700 x 250 tube	700 x 250 size model 6A tube type tire
Nose wheel	400 x 140 size tubeless

IV. Operating and Service Instructions**1. Rotorcraft Flight Manual, Document No:**

AE-30.04.20.0 ERFM

2. Maintenance Manual, Document No:

In English

AE 30.04.20.1 MM

3. Service Letters and Service Bulletins:

As published by PZL

4. Required Equipment:

Refer to Rotorcraft Flight Manual for the approved mandatory and optional equipment.

V. Notes**1. Eligible serial numbers:**

3X.04.20 and subsequent (not consecutive, i.e. excluding military aircrafts)

ADDITIONAL DGAC - CHILE DATA PERTAINING TO PZL W-3A

Certification Basis	DAR 08, Reglamento de Aeronavegabilidad DAN 21, Certificación de Productos y Partes The certification basis imposed by the EASA was accepted by the DGAC of Chile.
Production Basis	In accordance with EASA TCDS.R.007
Import Requirements	<p>A Certificate for Airworthiness endorsed as noted under “Import Requirements” must be submitted for each individual rotorcraft for which application for a Chilean Certificate of Airworthiness is made.</p> <p>A Chilean Certificate of Airworthiness may be issued for rotorcraft only on the basis of an Export Certificate of Airworthiness granted by the CAO of Poland or the State of Registry, including the following statement:</p> <p>“The rotorcraft covered by this certificate has been inspected, tested and found to be in conformity with the approved type design as defined by the Chilean Type Certificate Validation Act N° H-A87-01/10 and it is in a condition for safe operation”</p>

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