

European Aviation Safety Agency

EASA TYPE-CERTIFICATE DATA SHEET

PZL-104 WILGA Series

Type Certificate Holder:

EADS PZL "WARSZAWA-OKĘCIE" S.A.
Al. Krakowska 110/114
WARSAW
00-971
POLAND

Manufacturer:

EADS PZL "WARSZAWA-OKĘCIE" S.A.
Al. Krakowska 110/114
WARSAW
00-971
POLAND

Variants:

PZL-104 Wilga 80
PZL-104M Wilga 2000
PZL-104MN Wilga 2000
PZL-104MF Wilga 2000
PZL-104MA Wilga 2000
PZL-104 Wilga 32
PZL-104 Wilga 32A
PZL-104 Wilga 35
PZL-104 Wilga 35A

List of effective Pages:

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Change Record

A: PZL-104 Wilga 80

A.I. General

| | | |
|--|--|-------------------------|
| Data Sheet No : EASA.A.061 | Issue: 01 | Date: November 16, 2005 |
| 1 a) Type: b) Variant: | PZL-104 Wilga PZL-104 Wilga 80 | |
| 2 Airworthiness Category: | Normal | |
| 3 Type Certificate Holder: | EADS PZL "Warszawa-Okęcie" S A Al. Krakowska 110/114 WARSAW 00-971 POLAND | |
| 4 Manufacturer: | EADS PZL "Warszawa-Okęcie" S A Al. Krakowska 110/114 WARSAW 00-971 POLAND See: Note 3 | |
| 5 Certification Application Date: | August 2, 1978 | |
| 6 GICA/CAIB Certification Date: | February 25, 1980 | |
| 7 EASA Certification Date: | November 16, 2005 | |
| 8 The EASA ICDS replaces CAO Poland ICDS No BB-130 | | |

A.II. Certification Basis

| | |
|---|---|
| 1 Reference Date for determining the applicable requirements: | See A II.5. |
| 2 (Reserved) | |
| 3 (Reserved) | |
| 4 Certification Basis: | As defined below |
| 5 Airworthiness Requirements: | FAR 23 dated February 1, 1965 as amended through Amendment 23-20 effective September 1, 1977. |
| 6 Requirements elected to comply: | None |
| 7 EASA Special Conditions: | Canadian Engineering and Inspection Manual, Part II, Chpt 1 Section 1.1 Canada 1971 for version with ski landing gear |
| 8 EASA Exemptions: | None |
| 9 EASA Equivalent Safety Findings: | None |
| 10 EASA Environmental Standards: | ICAO, Annex 16, Volume 1, Chapter 6; Edition 1978 |

A.III. Technical Characteristics and Operational Limitations

| | |
|-----------------------------------|---|
| 1. Type Design Definition: | List of Main Drawings of the PZL-104 Wilga 80 Airplane, Edition B, December 1985 |
| 2. Description: | Single radial engine, fixed landing gear with tail wheel, four-seat cantilever high-wing, all metal monoplane |
| 3. Equipment: | Refer to Pilot's Operating Handbook of PZL-104 Wilga 80, Sec 5 4 |
| 4. Dimensions: | |
| Span | 11.134 m (36 ft 6.3 in) |
| Length | 8.10 m (26 ft 6.9 in) |
| Height | 2.96 m (9 ft 8.5 in) |
| Wing Area | 15.5 m ² (166.8 sq ft) |
| 5. Engine: | AI-14 RA |
| 5.1 Engine Limits: | Serial No. distinguished by the phrase "KAF" Max allowable rotational speed 2350 r p m (5 min) at sea level For other engine limits refer to AFM |
| 6 (Reserved) | |
| 7. Propeller: | US 122 000 two blade, hydraulically controlled |
| 7.1 Settings | constant speed |
| 7.2 Diameter | 2650 mm (104.3 in) |
| 8. Fluids: | |
| 8.1 Fuel: | Minimum 90 Octane Aviation gasoline Maximum tetraethyllead contents: 2.5 g/kg (0.04 oz/lb) of fuel |
| 8.2 Oil: | Mineral aviation oil of 20÷22 eSt (3.07÷3.19° E) visco- sity at 100°C for summer and winter operation; e.g: MS-20 or MK-22 acc. to GOST 1013-49, Aeroshell W100 or equivalents |
| 9. Fluid capacities: | |
| 9.1 Fuel: | Standard: 172 l (45.4 US Gallons) 170 l (45 US Gallons) usable Supplementary tank capacity: 92.2 l (24.3 US Gallons) 90 l (23.8 US Gallons) usable |
| 9.2 Oil: | 15.5 l (16.4 US qt) |
| 10. Air Speeds: | |
| Never exceed speed V_{NE} : | Standard 234 km/h (126 kts) |
| Normal operating speed V_{NO} : | 208 km/h (112 kts) |
| Manoeuvring speed V_A : | 178 km/h (96 kts) |
| Flaps extended speed V_{FE} : | 156 km/h (84 kts) |
| Never exceed speed V_{NE} : | <i>Version for parachute jumper lifting</i> 200 km/h (108 kts) |

| | |
|--|--|
| Normal operating speed V_{NO} : | 180 km/h (97 kts) |
| 11. Maximum Operating Altitude: | Not defined |
| 12. All Weather Capability: | Day/Night-VFR/IFR Flight into known icing conditions - prohibited. |
| 13. Maximum Masses: | |
| Take-off: | 1300 kg (3086 lb) |
| Zero fuel | 1260 kg (2778 lb) |
| Landing | 1265 kg (2789 lb) |
| 14. Centre of Gravity Range: | |
| Forward limit: | 0 425 m (16 7 inches) aft of datum |
| Rear limit: | 0 616 m (24 3 inches) aft of datum |
| | <i>Airplane provided with ski landing gear</i> |
| Forward limit: | 0 480 m (18 9 inches) aft of datum |
| Rear limit: | 0 616 m (24 3 inches) aft of datum |
| 15 Datum: | A plane tangent to the leading edge of the wing slat and perpendicular to the mean aerodynamic chord (MCA) |
| 16 (Reserved) | |
| 17 Levelling Means: | Left side of fuselage - station 6 680 mm above station 5 (refer to AFM, Sect 5.1) |
| 18 Minimum Flight Crew: | 1 (Pilot) |
| 19 Maximum Passenger Seating Capacity: | 3 |
| | <i>Version for long lasting, long distance flights with supplementary tank</i> |
| Maximum Passenger Seating Capacity: | 1 |
| 20. (Reserved) | |
| 21. Baggage | |
| Max. allowable Load: | 30 kg (66 lb) in baggage compartment |
| 22. Wheels and Tyres | |
| Main Wheel Tyre Size | STOMIL 500 x 200 mm (19.7 x 7.9 in) |
| Tail Wheel Tyre Size | STOMIL 255 x 110 mm (10.0 x 4.3 in) |

A.IV. Operating and Service Instructions

Aeroplane Flight Manual (AFM)

Pilot's Operating Handbook. PZL-104 Wilga 80
Date of issue: June 15, 1979

Aeroplane Maintenance Manual (AMM)

Maintenance Instruction and Scheduled Inspection for the PZL-104 Wilga 80 Aircraft
Date of issue: Warsaw 1980

Service Information and Service Bulletins

A.V. Notes

1. A current Weight and Balance Report must be provided with each airplane at the time of original Airworthiness Certification and all times thereafter. The airplane Weight and Balance Report must include:

- Weight of the empty airplane,
- Position of C.G ,
- Unusable fuel quantity in empty weight,
- Full oil quantity in empty weight,

-
- List of equipment in empty weight
- 2 Approved Noise Levels in accordance with ICAO Annex 16, Volume 1, Chapter 6; Edition 1978: 61.8 dB(A)
 - 3 Formerly: PZL "Warszawa-Okęcie",
Wytwórnia Sprzętu Komunikacyjnego "PZL-Warszawa-Okęcie"

B: PZL-104M Wilga 2000

B.I. General

| | | |
|---|---|-------------------------|
| Data Sheet No : EASA A 061 | Issue: 01 | Date: November 16, 2005 |
| 1. a) Type: | PZL-104 Wilga | |
| b) Variant: | PZL-104M Wilga 2000 | |
| 2. Airworthiness Category: | Normal | |
| 3. Type Certificate Holder: | EADS PZL "Warszawa-Okęcie" S A Al Krakowska 110/114 WARSAW 00-971 POLAND | |
| 4. Manufacturer: | EADS PZL "Warszawa-Okęcie" S A Al Krakowska 110/114 WARSAW 00-971 POLAND See: Note 5 | |
| 5. Certification Application Date: | June 22, 1995 | |
| 6. GICA/CAIB Certification Date: | July 11, 1997 | |
| 7. EASA Certification Date: | November 16, 2005 | |
| 8. The EASA TCDS replaces CAO Poland TCDS No BB-130 | | |

B.II. Certification Basis

| | |
|--|---|
| 1. Reference Date for determining the applicable requirements: | See B II 5. |
| 2. (Reserved) | |
| 3. (Reserved) | |
| 4. Certification Basis: | As defined below |
| 5. Airworthiness Requirements: | FAR 23 dated February 1, 1965 as amended through Amendment 23-20 effective September 1, 1977 ; FAR 23 Subpart B as amended through Amendment 23-45 effective September 7, 1993; FAR 23 Subpart E & F as amended through Amendment 23-30 effective March 29, 1984; FAR 23 Appendix F as amended through Amendment 23-34 effective January 15, 1987; FAR 23 Appendix G as amended through Amendment 23-34 effective January 15, 1987; FAR 36 dated December 1, 1969 as amended through Amendment 36-22 effective October 13, 1999; |
| 6. (Reserved) | |

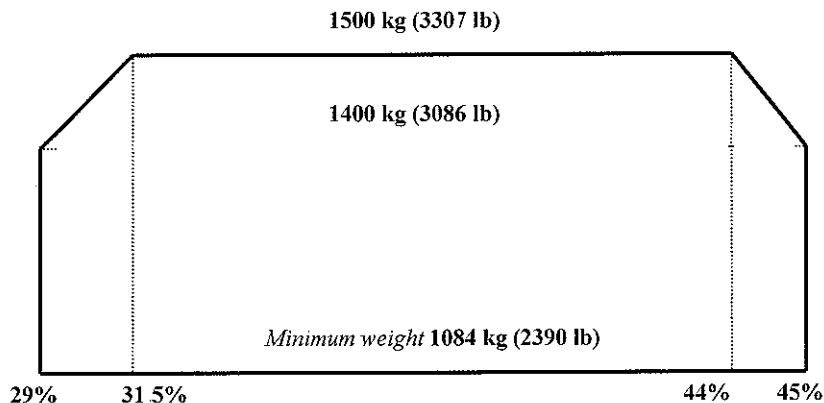
- | | |
|-------------------------------------|---|
| 7. EASA Special Conditions: | BCAR, Section K, Chapter K4-10 issued 10th April, 1974 - as far as glider and banner towing is concerned; |
| 8. EASA Exemptions: | None |
| 9. EASA Equivalent Safety Findings: | None |
| 10. EASA Environmental Standards: | ICAO, Annex 16, Volume 1, Chapter 10; Edition 1993 |

B.III. Technical Characteristics and Operational Limitations

- | | |
|---|---|
| 1. Type Design Definition: | Master Drawings List of the PZL-104M Wilga 2000 Airplane, Edition 8, April 19, 2004 |
| 2. Description: | Single radial engine, fixed landing gear with tail wheel, four-seat cantilever high-wing, all metal monoplane |
| 3. Equipment: | Master Equipment List of the PZL-104M WILGA 2000 Airplane, Issue 9, date of issue: April 19, 2004. Refer also to Airplane Flight Manual |
| 4. Dimensions: | |
| Span | 11.28 m (37 ft 0.1 in) |
| Length | 8.46 m (27 ft 9.1 in) |
| Height | 2.58 m (8 ft 5.6 in) |
| Wing Area | 15.5 m ² (166.8 sq ft) |
| 5. Engine: | LYCOMING IO-540 K1J5D LYCOMING IO-540 K1D5 LYCOMING IO-540 K1B5 |
| 5.1 Engine Limits: | |
| Maximum take-off and continuous rating | 223.7 KW (304.2 metric HP) (300 HP) |
| Maximum engine speed for take-off and continuous rating | 2700 rpm |
| | For other engine limits refer to AFM |
| 6. (Reserved) | |
| 7. Propeller: | HARIZELL HC-C3YR-1RF/F8468A-6R – concerns version of MTOW of 1400 kg |
| Maximum diameter | 2032 mm (80 in) |
| Minimum diameter allowed for repairs | 1930.4 mm (76 in) |
| constant speed | |
| | HARIZELL HC-C3YR-1RF/F8068 – concerns version of MTOW of 1400 kg & 1500 kg |
| Maximum diameter | 2083 mm (82 in) |
| Minimum diameter allowed for repairs | 1981.2 mm (78 in) |
| constant speed | |
| 8. Fluids: | |
| 8.1 Fuel: | 100/100LL minimum grade aviation gasoline |
| 8.2 Oil: | |

| Outside Temperature | MIL-L-6082B Spec Mineral Grades | MIL-L-22851 Spec Ashless Dispersant Grades |
|-----------------------------|------------------------------------|---|
| full range of temperatures | | SAE 15W50 or 20W50 |
| above +27°C (80°F) | SAE 60 | SAE 60 |
| above +16°C (60°F) | SAE 50 | SAE 40 or SAE 50 |
| -1° to 32°C (30° to 90° F) | SAE 40 | SAE 40 |
| -18° to 21°C (0° to 70° F) | SAE 30 | SAE 30, 40, 20W40 |
| below -12°C (10° F) | SAE 20 | SAE 30, 20W30 |

9. Fluid capacities:
- | | |
|-----------|---|
| 9.1 Fuel: | 392 l (103.6 US Gallons) |
| | 380 l (100.4 US Gallons) usable |
| 9.2 Oil: | 11.4 l (12 U S qt) (integrated with engine) |
10. Air Speeds (CAS):
- | | 1400 kg | 1500 kg |
|-----------------------------------|--------------------|--------------------|
| MTOW | 243 km/h (131 kts) | 243 km/h (131 kts) |
| Never exceed speed - V_{NE} | 208 km/h (112 kts) | 208 km/h (112 kts) |
| Normal operating speed - V_{NO} | 185 km/h (100 kts) | 192 km/h (104 kts) |
| Manoeuvring speed - V_A | 162 km/h (87 kts) | 162 km/h (87 kts) |
| Flaps extended speed - V_{FE} | 89 km/h (48 kts) | 92 km/h (50 kts) |
11. Maximum Operating Altitude: Not defined
12. All Weather Capability: Day/Night-VFR/IFR
Flight into known icing conditions - prohibited.
13. Maximum Masses:
- | | | |
|---------------------|-------------------|-------------------|
| Take-off & Landing: | 1400 kg (3086 lb) | 1500 kg (3307 lb) |
| Zero fuel | 1360 kg (2998 lb) | 1427 kg (3146 lb) |
| Minimum in flight | 1084 kg (2390 lb) | |
14. Centre of Gravity Range:
- Minimum front centre of gravity location:
- | | |
|-----------------------|--|
| Q = 1500 kg (3307 lb) | 31.5 % MAC – 0.441 m (17.36 in) aft of datum |
| Q ≤ 1400 kg (3086 lb) | 29.0 % MAC – 0.406 m (16.0 in) aft of datum |
- linear variation between these points
- Maximum rear centre of gravity location:
- | | |
|-----------------------|--|
| Q = 1500 kg (3307 lb) | 44.0 % MAC – 0.616 m (24.25 in) aft of datum |
| Q ≤ 1400 kg (3086 lb) | 45.0 % MAC – 0.630 m (24.8 in) aft of datum |
- linear variation between these points
- Length of MAC 1.4 m (55.1 in.)
Position of leading edge of MAC aft of datum 0.0 m (0.0 in)



15. Datum: A plane tangent to the leading edge of the wing slat and perpendicular to the mean aerodynamic chord (MCA)
16. (Reserved)
17. Levelling Means: Acc to rigging points, elevation of point 6 over point 5: 680 mm (26.8 in) (refer to AFM, Sect. 6.1)

| | |
|--|---|
| 18. Minimum Flight Crew: | 1 (Pilot) |
| 19. Maximum Passenger Seating Capacity: | 3 |
| 20. (Reserved) | |
| 21. Baggage Max allowable Load: | 30 kg (66 lb) in baggage compartment |
| 22. Wheels and Tyres Main Wheel Tyre Size Tail Wheel Tyre Size | STOMIL 500 x 200 mm (19.7 x 7.9 in) STOMIL 255 x 110 mm (10.0 x 4.3 in) |
| 23. Glider and banner towing Minimum towing speed (IAS): gliders $\delta_{KI} = 21^\circ$ $\delta_{KI} = 0^\circ$ banner $\delta_{KI} = 0^\circ$ Maximum towing speed (IAS), $\delta_{KI} = 0^\circ$ Maximum take-off and landing weight of the airplane Maximum total weight of airplane + glider system Maximum number of gliders towed Maximum number of persons aboard Safety link between the rope and the towing hook with the breaking force not more than | 110 km/h (59 kts) 125 km/h (67 kts) 125 km/h (67 kts) 165 km/h (89 kts) 1400 kg (3086 lb) 1890 kg (4167 lb) 2 2 (on front seats) 9320 N (950 kg) (2094 lb.) |

B.IV. Operating and Service Instructions

| | |
|---|--|
| Aeroplane Flight Manual (AFM) | PZL-104 M WILGA 2000 Airplane Flight Manual Date of issue: July, 1997 |
| Aeroplane Maintenance Manual (AMM) | PZL-104 M WILGA 2000 Airplane Maintenance Manual Date of issue: July 10, 1997 |
| Service Information and Service Bulletins | |

B.V. Notes

1. A current Weight and Balance Report must be provided with each airplane at the time of original Airworthiness Certification and at all times thereafter
The airplane Weight and Balance Report must include :
 - weight of the empty airplane
 - position of C G
 - unusable fuel quantity in empty weight
 - full oil quantity in empty weight
 - list of equipment in empty weight
2. Operation of the PZL-104M WILGA 2000 airplane at maximum take-off and landing weight of 1500 kg (3307 lb) is approved, providing Technical Bulletin No. 104M04045 has been implemented. Operation will be in accordance with Supplement No. 9.19 of Airplane Flight Manual
3. The type Certificate BB-130 together with this Data Sheet is valid for PZL-104 M WILGA 2000 airplanes serial Nos. 00960001 and up. The certification process has been run on the airplane serial No. 00960001.
4. Approved Noise Levels in accordance with ICAO Annex 16, Volume 1, Chapter 10:

| | | | |
|------------------------|---------|-----------------------------|-------------------|
| Maximum Takeoff Weight | 1400 kg | Propeller HC-C3YR-1RF/F8068 | 85.9 ± 0.57 dB(A) |
| | | HC-C3YR-1RF/F8468A-6R | 87.3 ± 0.51 dB(A) |
| Maximum Takeoff Weight | 1500 kg | Propeller HC-C3YR-1RF/F8068 | 87.2 ± 0.74 dB(A) |
5. Formerly: PZL "Warszawa-Okęcie".

C: PZL-104MN Wilga 2000

C.I. General

| | | |
|--|--|-------------------------|
| Data Sheet No : EASA A 061 | Issue: 01 | Date: November 16, 2005 |
| 1 a) Type: b) Variant: | PZL-104 Wilga PZL-104MN Wilga 2000 | |
| 2 Airworthiness Category: | Normal | |
| 3 Type Certificate Holder: | EADS PZL "Warszawa-Okęcie" S A Al Krakowska 110/114 WARSAW 00-971 POLAND | |
| 4 Manufacturer: | EADS PZL "Warszawa-Okęcie" S A. Al Krakowska 110/114 WARSAW 00-971 POLAND See: Note 4 | |
| 5 Certification Application Date: | December 20, 2000 | |
| 6 GICA/CAIB Certification Date: | March 8, 2001 | |
| 7 EASA Certification Date: | November 16, 2005 | |
| 8 The EASA TCDS replaces CAO Poland ICDS No BB-130 | | |

C.II. Certification Basis

| | |
|---|---|
| 1 Reference Date for determining the applicable requirements: | See C II 5 |
| 2 (Reserved) | |
| 3 (Reserved) | |
| 4 Certification Basis: | As defined below |
| 5 Airworthiness Requirements: | FAR 23 dated February 1, 1965 as amended through Amendment 23-20 effective September 1, 1977 ; FAR 23 Subpart B as amended through Amendment 23-45 effective September 7, 1993; FAR 23 Subpart E & F as amended through Amendment 23-30 effective March 29, 1984; FAR 23 Appendix F as amended through Amendment 23-34 effective January 15, 1987; FAR 23 Appendix G as amended through Amendment 23-34 effective January 15, 1987; FAR 36 dated December 1, 1969 as amended through Amendment 36-22 effective October 13, 1999; |

- 6 (Reserved)
- 7 EASA Special Conditions: BCAR, Section K, Chapter K4-10 issued 10th April, 1974 - as far as glider and banner towing is concerned;
- 8 EASA Exemptions: None
- 9 EASA Equivalent Safety Findings: None
- 10 EASA Environmental Standards: ICAO, Annex 16, Volume 1, Chapter 10; Edition 1993

C.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Master Drawings List of the PZL-104MN Wilga 2000 Airplane, Edition 2, November 22, 2002
2. Description: Single radial engine, fixed landing gear with tail wheel, four-seat cantilever high-wing, all metal monoplane
3. Equipment: Master Equipment List of the PZL-104 MN WILGA 2000 Airplane, Issue 2, date of issue: November 22, 2002. Refer also to Airplane Flight Manual
4. Dimensions:
- | | |
|-----------|-----------------------------------|
| Span | 11.28 m (37 ft 0.1 in) |
| Length | 8.46 m (27 ft 9.1 in) |
| Height | 2.58 m (8 ft 5.6 in) |
| Wing Area | 15.5 m ² (166.8 sq ft) |
5. Engine: LYCOMING IO-540 K1J5D
LYCOMING IO-540 K1D5
LYCOMING IO-540 K1B5
- 5.1 Engine Limits:
- | | |
|---|--------------------------------------|
| Maximum take-off and continuous rating | 216,4 kW (294,1 metric HP) (290 HP) |
| Maximum engine speed for take-off and continuous rating | 2575 rpm |
| | For other engine limits refer to AFM |
- 6 (Reserved)
7. Propeller:
- | | | |
|--------------------------------------|--|-------------------|
| HARIZELL HC-C3YR-1RF/F8468A-6R | | |
| Maximum diameter | | 2032 mm (80 in) |
| Minimum diameter allowed for repairs | | 1930.4 mm (76 in) |
| constant speed | | |
| HARIZELL HC-C3YR-1RF/F8068 | | |
| Maximum diameter | | 2083 mm (82 in) |
| Minimum diameter allowed for repairs | | 1981.2 mm (78 in) |
| constant speed | | |
8. Fluids:
- 8.1 Fuel: 100/100LL minimum grade aviation gasoline
- 8.2 Oil:

| Outside Temperature | MIL-L-6082B Spec. Mineral Grades | MIL-L-22851 Spec. Ashless Dispersant Grades |
|-----------------------------|-------------------------------------|--|
| full range of temperatures | | SAE 15W50 or 20W50 |
| above +27°C (80°F) | SAE 60 | SAE 60 |
| above +16°C (60°F) | SAE 50 | SAE 40 or SAE 50 |
| -1° to 32°C (30° to 90° F) | SAE 40 | SAE 40 |
| -18° to 21°C (0° to 70° F) | SAE 30 | SAE 30, 40, 20W40 |
| below -12°C (10° F) | SAE 20 | SAE 30, 20W30 |

| | |
|--|--|
| 9. Fluid capacities: | |
| 9.1 Fuel: | 392 l (103.6 US Gallons) 380 l (100.4 US Gallons) usable |
| 9.2 Oil: | 11.4 l (12 US qt) (integrated with engine) |
| 10. Air Speeds (CAS): | |
| Never exceed speed - V_{NE} | 243 km/h (131 kts) |
| Normal operating speed - V_{NO} | 208 km/h (112 kts) |
| Manoeuvring speed - V_A | 185 km/h (100 kts) |
| Flaps extended speed - V_{FE} | 162 km/h (87 kts) |
| Stalling speed - V_{SO} | 89 km/h (48 kts) |
| 11. Maximum Operating Altitude: | Not defined |
| 12. All Weather Capability: | Day/Night-VFR/IFR Flight into known icing conditions - prohibited |
| 13. Maximum Masses: | |
| Take-off & Landing: | 1400 kg (3086 lb) |
| Zero fuel | 1360 kg (2998 lb) |
| 14. Centre of Gravity Range: | |
| Centre of gravity location between 29.0 % MAC through 45.0 % MAC | |
| 0.406 m ÷ 0.630 m (16.0 in. ÷ 24.8 in.) aft of datum | |
| Length of MAC | 1.4 m (55.1 in.) |
| Position of leading edge of MAC aft of datum | 0.0 m (0.0 in.) |
| 15. Datum: | A plane tangent to the leading edge of the wing slat and perpendicular to the mean aerodynamic chord (MCA) |
| 16. (Reserved) | |
| 17. Levelling Means: | Acc. to rigging points, elevation of point 6 over point 5: 680 mm (26.8 in.) (refer to AFM, Sect. 6.1) |
| 18. Minimum Flight Crew: | 1 (Pilot) |
| 19. Maximum Passenger Seating Capacity: | 3 |
| 20. (Reserved) | |
| 21. Baggage | |
| Max allowable Load: | 30 kg (66 lb) in baggage compartment |
| 22. Wheels and Tyres | |
| Main Wheel Tyre Size | STOMIL 500 x 200 mm (19.7 x 7.9 in.) |
| Tail Wheel Tyre Size | STOMIL 255 x 110 mm (10.0 x 4.3 in.) |
| 23. Glider and banner towing | |
| Minimum towing speed (IAS): | |
| gliders $\delta_{KI} = 21^\circ$ | 110 km/h (59 kts) |
| $\delta_{KI} = 0^\circ$ | 125 km/h (67 kts) |
| banner $\delta_{KI} = 0^\circ$ | 125 km/h (67 kts) |
| Maximum towing speed (IAS), $\delta_{KI} = 0^\circ$ | 165 km/h (89 kts) |
| Maximum take-off and landing weight of the airplane | 1400 kg (3086 lb) |
| Maximum total weight of airplane + glider system | 1890 kg (4167 lb) |
| Maximum number of gliders towed | 2 |
| Maximum number of persons aboard | 2 (on front seats) |
| Safety link between the rope and the towing hook with the breaking force not more than | 9320 N (950 kg) (2094 lb) |

C.IV. Operating and Service Instructions

| | |
|---|--|
| Aeroplane Flight Manual (AFM) | PZL-104 MN WILGA 2000 Airplane Flight Manual, Date of issue: :December, 2000 |
| Aeroplane Maintenance Manual (AMM) | PZL-104 M WILGA 2000 Airplane Maintenance Manual Date of issue: December 20, 2000 |
| Service Information and Service Bulletins | |

C.V. Notes

1 A current Weight and Balance Report must be provided with each airplane at the time of original Airworthiness Certification and at all times thereafter

The airplane Weight and Balance Report must include :

- weight of the empty airplane,
- position of C G ,
- unusable fuel quantity in empty weight,
- full oil quantity in empty weight,
- list of equipment in empty weight

2 The type Certificate BB-130 together with this Data Sheet is valid for PZL-104 MN WILGA 2000 airplanes serial Nos 00960001 and up The certification process has been run on the airplane serial No 00960001

3 Approved Noise Levels in accordance with ICAO Annex 16, Volume 1, Chapter 10:

| | | |
|-----------|-----------------------|--------------------|
| Propeller | HC-C3YR-1RF/F8068 | 82.25 ± 0.37 dB(A) |
| | HC-C3YR-1RF/F8468A-6R | 85.2 ± 0.20 dB(A) |

4. Formerly: PZL "Warszawa-Okecie".

D: PZL-104MF Wilga 2000

D.I. General

| | | |
|---|--|-------------------------|
| Data Sheet No : EASA A 061 | Issue: 01 | Date: November 16, 2005 |
| 1. a) Type: | PZL-104 Wilga | |
| b) Variant: | PZL-104MF Wilga 2000 | |
| 2. Airworthiness Category: | Normal | |
| 3. Type Certificate Holder: | EADS PZL "Warszawa-Okęcie" S A. Al Krakowska 110/114 WARSAW 00-971 POLAND | |
| 4. Manufacturer: | EADS PZL "Warszawa-Okęcie" S A. Al Krakowska 110/114 WARSAW 00-971 POLAND See: Note 5 | |
| 5. Certification Application Date: | December 21, 2000 | |
| 6. GICA/CAIB Certification Date: | April 25, 2001 | |
| 7. EASA Certification Date: | November 16, 2005 | |
| 8. The EASA TCDS replaces CAO Poland ICDS No BB-130 | | |

D.II. Certification Basis

| | |
|--|---|
| 1. Reference Date for determining the applicable requirements: | See D II 5 |
| 2. (Reserved) | |
| 3. (Reserved) | |
| 4. Certification Basis: | As defined below |
| 5. Airworthiness Requirements: | FAR 23 dated February 1, 1965 as amended through Amendment 23-20 effective September 1, 1977 ; FAR 23 Subpart B as amended through Amendment 23-45 effective September 7, 1993; FAR 23 Subpart E & F as amended through Amendment 23-30 effective March 29, 1984; FAR 23 Appendix F as amended through Amendment 23-34 effective January 15, 1987; FAR 23 Appendix G as amended through Amendment 23-34 effective January 15, 1987; FAR 36 dated December 1, 1969 as amended through Amendment 36-22 effective October 13, 1999; |
| 6. (Reserved) | |

- 7 EASA Special Conditions: BCAR, Section K, Chapter K4-10 issued 10th April, 1974 - as far as glider and banner towing is concerned
- 8 EASA Exemptions: None
- 9 EASA Equivalent Safety Findings: None
- 10 EASA Environmental Standards: ICAO, Annex 16, Volume 1, Chapter 10; Edition 1993

D.III. Technical Characteristics and Operational Limitations

- 1 Type Design Definition: Master Drawings List of the PZL-104MF Wilga 2000 Airplane, Edition 2, November 22, 2002
- 2 Description: Single radial engine, fixed landing gear with tail wheel, four-seat cantilever high-wing, all metal monoplane
- 3 Equipment: Master Equipment List of the PZL-104MF WILGA 2000 Airplane, Issue 2, date of issue: November 22, 2002
Refer also to Airplane Flight Manual
- 4 Dimensions:
- | | |
|-----------|-----------------------------------|
| Span | 11.28 m (37 ft 0.1 in) |
| Length | 8.46 m (27 ft 9.1 in) |
| Height | 2.58 m (8 ft 5.6 in) |
| Wing Area | 15.5 m ² (166.8 sq ft) |
- 5 Engine: LYCOMING IO-540 K115D
LYCOMING IO-540 K1D5
LYCOMING IO-540 K1B5
- 5.1 Engine Limits:
- | | |
|---|-------------------------------------|
| Maximum take-off and continuous rating | 223.7 KW (304.2 metric HP) (300 HP) |
| Maximum engine speed for take-off and continuous rating | 2700 rpm |
- For other engine limits refer to AFM
- 6 (Reserved)
- 7 Propeller:
- | | |
|--|-------------------|
| HARTZELL HC-C3YR-1RF/F8468A-6R – concerns version of MTOW of 1400 kg | |
| Maximum diameter | 2032 mm (80 in) |
| Minimum diameter allowed for repairs | 1930.4 mm (76 in) |
| constant speed | |
| HARTZELL HC-C3YR-1RF/F8068 – concerns version of MTOW of 1400 kg & 1500 kg | |
| Maximum diameter | 2083 mm (82 in) |
| Minimum diameter allowed for repairs | 1981.2 mm (78 in) |
| constant speed | |
- 8 Fluids:
- 8.1 Fuel: 100/100LL minimum grade aviation gasoline
- 8.2 Oil:

| Outside Temperature | MIL-L-6082B Spec. Mineral Grades | MIL-L-22851 Spec. Ashless Dispersant Grades |
|-----------------------------|-------------------------------------|--|
| full range of temperatures | | SAE 15W50 or 20W50 |
| above +27°C (80°F) | SAE 60 | SAE 60 |
| above +16°C (60°F) | SAE 50 | SAE 40 or SAE 50 |
| -1° to 32°C (30° to 90° F) | SAE 40 | SAE 40 |
| -18° to 21°C (0° to 70° F) | SAE 30 | SAE 30, 40, 20W40 |
| below -12°C (10° F) | SAE 20 | SAE 30, 20W30 |

9 Fluid capacities:
 9.1 Fuel: 392 l (103.6 US Gallons)
 380 l (100.4 US Gallons) usable
 9.2 Oil: 11.4 l (12 U.S. qt) (integrated with engine)

10. Air Speeds (CAS):

| | | |
|-----------------------------------|--------------------|--------------------|
| MTOW | 1400 kg | 1500 kg |
| Never exceed speed - V_{NE} | 243 km/h (131 kts) | 243 km/h (131 kts) |
| Normal operating speed - V_{NO} | 208 km/h (112 kts) | 208 km/h (112 kts) |
| Manoeuvring speed - V_A | 185 km/h (100 kts) | 192 km/h (104 kts) |
| Flaps extended speed - V_{FE} | 162 km/h (87 kts) | 162 km/h (87 kts) |
| Stalling speed - V_{SO} | 89 km/h (48 kts) | 92 km/h (50 kts) |

11 Maximum Operating Altitude: Not defined

12 All Weather Capability: Day/Night-VFR/IFR
 Flight into known icing conditions - prohibited.

13 Maximum Masses:

| | | |
|---------------------|--------------------------|--------------------------|
| Take-off & Landing: | 1400 kg (3086 lb) | 1500 kg (3307 lb) |
| Zero fuel | 1360 kg (2998 lb) | 1427 kg (3146 lb) |
| Minimum in flight | 1084 kg (2390 lb) | |

14. Centre of Gravity Range:

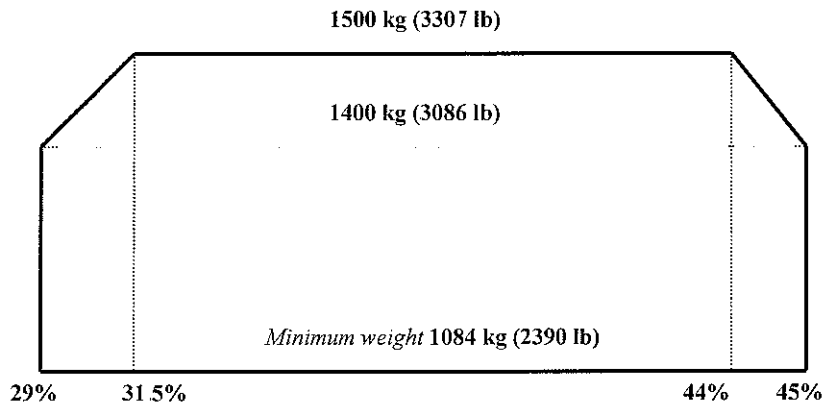
Minimum front centre of gravity location:

Q = 1500 kg (3307 lb) 31.5 % MAC – 0.441 m (17.36 in) aft of datum
 Q ≤ 1400 kg (3086 lb) 29.0 % MAC – 0.406 m (16.0 in) aft of datum
 linear variation between these points

Maximum rear centre of gravity location:

Q = 1500 kg (3307 lb) 44.0 % MAC – 0.616 m (24.25 in) aft of datum
 Q ≤ 1400 kg (3086 lb) 45.0 % MAC – 0.630 m (24.8 in) aft of datum
 linear variation between these points

Length of MAC 1.4 m (55.1 in.)
 Position of leading edge of MAC aft of datum 0.0 m (0.0 in.)



15 Datum: A plane tangent to the leading edge of the wing slat and perpendicular to the mean aerodynamic chord (MCA)

16 (Reserved)

17 Levelling Means: Acc. to rigging points, elevation of point 6 over point 5:
 680 mm (26.8 in.) (refer to AFM, Sect. 6.1)

| | |
|--|--------------------------------------|
| 18. Minimum Flight Crew: | 1 (Pilot) |
| 19 Maximum Passenger Seating Capacity: | 3 |
| 20 (Reserved) | |
| 21. Baggage | |
| Max. allowable Load: | 30 kg (66 lb) in baggage compartment |
| 22 Wheels and Tyres | |
| Main Wheel Tyre Size | STOMIL 500 x 200 mm (19 7 x 7 9 in) |
| Tail Wheel Tyre Size | STOMIL 255 x 110 mm (10 0 x 4 3 in) |
| 23. Glider and banner towing | |
| Minimum towing speed (IAS): | |
| gliders $\delta_{KI} = 21^\circ$ | 110 km/h (59 kts) |
| $\delta_{KI} = 0^\circ$ | 125 km/h (67 kts) |
| banner $\delta_{KI} = 0^\circ$ | 125 km/h (67 kts) |
| Maximum towing speed (IAS), $\delta_{KI} = 0^\circ$ | 165 km/h (89 kts) |
| Maximum take-off and landing weight of the airplane | 1400 kg (3086 lb) |
| Maximum total weight of airplane + glider system | 1890 kg (4167 lb.) |
| Maximum number of gliders towed | 2 |
| Maximum number of persons aboard | 2 (on front seats) |
| Safety link between the rope and the towing hook with the breaking force not more than | 9320 N (950 kg) (2094 lb.) |

D.IV. Operating and Service Instructions

| | |
|---|---|
| Aeroplane Flight Manual (AFM) | PZL-104 MF WILGA 2000 Airplane Flight Manual, Date of issue :April, 2001 |
| Aeroplane Maintenance Manual (AMM) | PZL-104 MF WILGA 2000 Airplane Maintenance Manual Date of issue: April 23, 2001 |
| Service Information and Service Bulletins | |

D.V. Notes

- A current Weight and Balance Report must be provided with each airplane at the time of original Airworthiness Certification and at all times thereafter
The airplane Weight and Balance Report must include :
 - weight of the empty airplane,
 - position of C G.,
 - unusable fuel quantity in empty weight,
 - full oil quantity in empty weigh,
 - list of equipment in empty weight.
- Operation of the PZL-104MF WILGA 2000 airplane at maximum take-off and landing weight of 1500 kg (3307 lb) is approved, providing Technical Bulletin No 104MF04012 has been implemented. Operation will be in accordance with Supplement No. 8 of Airplane Flight Manual
- The type Certificate BB-130 together with this Data Sheet is valid for PZL-104 M WILGA 2000 airplanes serial Nos. 00960001 and up The certification process has been run on the airplane serial No. 00980008.
- Approved Noise Levels in accordance with ICAO Annex 16, Volume 1, Chapter 10:

| | | | |
|------------------------|---------|-----------------------------|-------------------|
| Maximum Takeoff Weight | 1400 kg | Propeller HC-C3YR-1RF/F8068 | 85 9 ± 0 57 dB(A) |
| | | HC-C3YR-1RF/F8468A-6R | 87 3 ± 0 51 dB(A) |
| Maximum Takeoff Weight | 1500 kg | Propeller HC-C3YR-1RF/F8068 | 87 2 ± 0 74dB(A) |
- Formerly: PZL "Warszawa-Okęcie".

E: PZL-104MA Wilga 2000

E.I. General

| | | |
|--|--|-------------------------|
| Data Sheet No : EASA A.061 | Issue: 01 | Date: November 16, 2005 |
| 1 a) Type: b) Variant: | PZL-104 Wilga PZL-104MA Wilga 2000 | |
| 2. Airworthiness Category: | Normal | |
| 3. Type Certificate Holder: | EADS PZL "Warszawa-Okęcie" S A Al Krakowska 110/114 WARSAW 00-971 POLAND | |
| 4 Manufacturer: | EADS PZL "Warszawa-Okęcie" S A Al Krakowska 110/114 WARSAW 00-971 POLAND | |
| 5. Certification Application Date: | February 6, 2004 | |
| 6. GICA/CAIB Certification Date: | October 25, 2005 | |
| 7. EASA Certification Date: | November 16, 2005 | |
| 8 The EASA ICDS replaces CAO Poland ICDS No BB-130 | | |

E.II. Certification Basis

| | |
|--|---|
| 1. Reference Date for determining the applicable requirements: | See E II.5 |
| 2 (Reserved) | |
| 3 (Reserved) | |
| 4. Certification Basis: | As defined below |
| 5 Airworthiness Requirements: | FAR 23 dated February 1, 1965 as amended through Amendment 23-20 effective September 1, 1977 ; FAR 23 Subpart B as amended through Amendment 23-45 effective September 7, 1993; FAR 23 Subpart E & F as amended through Amendment 23-30 effective March 29, 1984; FAR 23 Appendix F as amended through Amendment 23-34 effective January 15, 1987; FAR 23 Appendix G as amended through Amendment 23-34 effective January 15, 1987; FAR 36 dated December 1, 1969 as amended through Amendment 36-22 effective October 13, 1999; |
| 6. (Reserved) | |

- 7 EASA Special Conditions: BCAR, Section K, Chapter K4-10: issued 10th April 1974 - as far as glider and banner towing is concerned
- 8 EASA Exemptions: None
- 9 EASA Equivalent Safety Findings: None
10. EASA Environmental Standards: ICAO, Annex 16, Volume 1, Chapter 10; Edition 1993

E.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Master Drawings List of PZL-104MA Wilga 2000 Airplane, Issue 1, September 30, 2005
- 2 Description: Single radial engine, fixed landing gear with tail wheel, four-seat cantilever high-wing, all metal monoplane
- 3 Equipment: Master Equipment List of the PZL-104MA WILGA 2000 Airplane, Issue 1, date of issue: September 26, 2005. Refer also to Airplane Flight Manual
- 4 Dimensions:
- | | |
|-----------|-----------------------------------|
| Span | 11.28 m (37 ft 0.1 in) |
| Length | 8.62 m (28 ft 3.37 in) |
| Height | 2.58 m (8 ft 5.6 in) |
| Wing Area | 15.5 m ² (166.8 sq ft) |
- 5 Engine:
- LYCOMING IO-540 K1B5
LYCOMING IO-540 K1D5
- 5.1 Engine Limits:
- | | |
|---|-------------------------------------|
| Maximum take-off and continuous rating | 216.3 kW (294.1 metric HP) (290 HP) |
| Maximum engine speed for take-off and continuous rating | 2575 rpm |
- For other engine limits refer to AFM
6. (Reserved)
- 7 Propeller:
- | | |
|---|-------------------|
| HARIZELL HC-E3YR-1RF/F8068 +2 | |
| Maximum diameter | 2133.6 mm (84 in) |
| Minimum diameter allowed for repairs constant speed | 2032 mm (80 in) |
- 8 Fluids:
- 8.1 Fuel: 100/100LL minimum grade aviation gasoline
- 8.2 Oil:

| Outside Temperature | MIL-L-6082B Spec. Mineral Grades | MIL-L-22851 Spec Ashless Dispersant Grades |
|-----------------------------|-------------------------------------|---|
| full range of temperatures | | SAE 15W50 or 20W50 |
| above +27°C (80°F) | SAE 60 | SAE 60 |
| above +16°C (60°F) | SAE 50 | SAE 40 or SAE 50 |
| -1° to 32°C (30° to 90° F) | SAE 40 | SAE 40 |
| -18° to 21°C (0° to 70° F) | SAE 30 | SAE 30, 40, 20W40 |
| below -12°C (10° F) | SAE 20 | SAE 30, 20W30 |

| | | |
|--|--|-------------------|
| 18 Minimum Flight Crew: | I (Pilot) | |
| 19. Maximum Passenger Seating Capacity: | 3 | |
| 20 (Reserved) | | |
| 21. Baggage | | |
| Max. allowable Load: | 30 kg (66 lb) in baggage compartment | |
| 22 Wheels and Tyres | | |
| Main Wheel | CLEVELAND 40-75D | |
| Main Wheel Tyre Size | GOODYEAR 8 00-6TT 486 x 191 mm (19 1 x 7.5 in) | |
| Tail Wheel Tyre Size | STOMIL 255 x 110 mm (10 0 x 4.3 in) | |
| 23 Glider and banner towing | | |
| Minimum towing speed | (IAS): | (CAS) |
| gliders $\delta_{KI} = 21^\circ$ | 110 km/h (59 kts) | 108 km/h (58 kts) |
| $\delta_{KI} = 0^\circ$ | 125 km/h (67 kts) | 124 km/h (67 kts) |
| Maximum towing speed (IAS), $\delta_{KI} = 0^\circ$ | 165 km/h (89 kts) | 167 km/h (90 kts) |
| Maximum take-off and landing weight of the airplane | 1400 kg (3086 lb) | |
| Maximum total weight of airplane + glider system | 1890 kg (4167 lb) | |
| Maximum number of gliders towed | 2 | |
| Maximum number of persons aboard | 2 (on front seats) | |
| Safety link between the rope and the towing hook with the breaking force not more than | 9320 N (950 kg) (2094 lb) | |

E.IV. Operating and Service Instructions

| | |
|---|---|
| Aeroplane Flight Manual (AFM) | PZL-104 MA WILGA 2000 Airplane Flight Manual Date of issue: :August, 2005 |
| Aeroplane Maintenance Manual (AMM) | PZL-104 MA WILGA 2000 Airplane Maintenance Manual Date of issue: July 22, 2005 |
| Service Information and Service Bulletins | |

E.V. Notes

- Note 1 A current Weight and Balance Report must be provided with each airplane at the time of original Airworthiness Certification and at all times thereafter
The airplane Weight and Balance Report must include :
- weight of the empty airplane
 - position of C.G.
 - unusable fuel quantity in empty weight
 - full oil quantity in empty weight
 - list of equipment in empty weight
- Note 2 The type Certificate BB-130 together with this Data Sheet is valid for PZL-104 MA WILGA 2000 airplanes serial Nos. 00050019, 00050021 and up. The certification process has been run on the airplane serial No. 00050019
- Note 3 Approved Noise Level in accordance with ICAO Annex 16, Volume 1, Chapter 10: 84.6 ± 0.26 dB(A)

F: PZL-104 Wilga 32, PZL-104 Wilga 32A

F.I. General

| | | |
|---|--|----------------------|
| Data Sheet No : EASA A.061 | Issue: 02 | Date: 8 January 2007 |
| 1 a) Type: b) Variant: | PZL-104 Wilga PZL-104 Wilga 32, PZL-104 Wilga 32A – aeroclub, for glider towing and parachute jumper lifting. See: Note 3 | |
| 2 Airworthiness Category: | Normal | |
| 3 Type Certificate Holder: | EADS PZL “Warszawa-Okęcie” S.A. Al. Krakowska 110/114 WARSAW 00-971 POLAND | |
| 4 Manufacturer: | EADS PZL “Warszawa-Okęcie” S.A. Al. Krakowska 110/114 WARSAW 00-971 POLAND See: Note 4 | |
| 5 Certification Application Date: | October 11, 1967 | |
| 6 GICA/CAIB Certification Date: | March 31, 1969 | |
| 7 EASA Certification Date: | January 8, 2007 | |
| 8 The EASA TCDS replaces CAO Poland TCDS No BB-55 | | |

F.II. Certification Basis

| | |
|---|-----------------------|
| 1 Reference Date for determining the applicable requirements: | See F II 5. |
| 2 (Reserved) | |
| 3 (Reserved) | |
| 4 Certification Basis: | As defined below |
| 5 Airworthiness Requirements: | BCAR, Section D, 1959 |
| 6 (Reserved) | |
| 7 EASA Special Conditions: | None |
| 8 EASA Exemptions: | None |
| 9 EASA Equivalent Safety Findings: | None |
| 10 EASA Environmental Standards: | None |

F.III. Technical Characteristics and Operational Limitations

| | |
|---|---|
| 1. Type Design Definition: | Drawings No 32.900.000 Universal plane, 32.910.000 Basic aircraft |
| 2. Description: | Single radial engine, fixed landing gear with tail wheel, four-seat cantilever high-wing, all metal monoplane |
| 3. Equipment: | Refer to Flight Manual for the PZL-104 Wilga 32 aircraft, see also CAIB Aircraft Type Certificate Data Sheet No. BB-55, issued March 1969 |
| 4. Dimensions: | |
| Span | 11.12 m (36 ft 5.8 in) |
| Length | 8.16 m (26 ft 9.2 in) |
| Height | 2.51 m (8 ft 2.8 in) |
| Wing Area | 15.57 m ² (167.6 sq ft) |
| MAC | 1.4 m (4 ft 7.1 in) |
| 5. Engine: | Continental 0-470L or Continental 0-470R |
| 5.1 Engine Limits: | |
| Maximum take-off and continuous rating | 171.5 kW (233.2 metric HP) (230 BHP) |
| Max allowable rotational speed for all operations | 2600 r p m For other engine limits refer to AFM |
| 6. (Reserved) | |
| 7. Propeller: | Mc. Cauley 2A-34C-50/90A2 two blade, hydraulically controlled |
| 7.1 Settings | constant speed |
| 7.2 Diameter | 2200 mm (86.6 in) |
| 8. Fluids: | |
| 8.1 Fuel: | Aviation gasoline, 80/87 minimum grade |
| 8.2 Oil: | Aero Shell W100 or equivalents |
| 9. Fluid capacities: | |
| 9.1 Fuel: | Overall 190 l (140 kg) (50.2 US Gal) in two tanks in wings |
| 9.2 Oil: | 13.5 l (11 kg) (14.3 US qt) in an integral engine tank |
| 10. Air Speeds: | |
| Never exceed speed V_{NE} : | 279 km/h (151 kts) |
| Normal operating speed V_{NO} : | 228 km/h (123 kts) |
| Maneuvering speed V_A : | 160 km/h (86 kts) |
| Flaps extended speed V_{FE} : | 130 km/h (70 kts) |
| | <i>for glider towing and parachute jumper lifting</i> For airspeed limits and other limitations – see: Flight Manual for the PZL-104 Wilga 32A aircraft |
| 11. Maximum Operating Altitude: | Not defined |
| 12. All Weather Capability: | VMC(standard) and IMC (with navigation equipment on special request) flights |

| | |
|--|--|
| 13 Maximum Masses: | |
| Take-off & Landing | 1230 kg (2712 lb) |
| <i>For glider towing:</i> | |
| Permissible number of gliders in tow | 3 |
| Overall weight of towed gliders | not exceeding 1125 kg (2481 lb) |
| Permissible weight of single glider | 650 kg (1433 lb) |
| 14 Centre of Gravity Range: | |
| Forward limit: | 26% MAC, i.e. 0.364 m (14.3 in) aft of datum |
| Rear limit: | 44% MAC, i.e. 0.616 m (24.3 in) aft of datum |
| 15 Datum: | A plane tangent to the leading edge of the wing slat and perpendicular to the mean aerodynamic chord (MAC) |
| 16 (Reserved) | |
| 17 Leveling Means: | MAC positioned horizontally |
| 18 Minimum Flight Crew: | 1 (Pilot) |
| 19 Maximum Passenger Seating Capacity: | 3 |
| 20 (Reserved) | |
| 21 Baggage | |
| Max. allowable Load: | 35 kg (77 lb) in baggage compartment |
| 22 Wheels and Tyres | |
| Main Wheel Tyre Size | 500 x 200 mm (19.7 x 7.9 in) |
| Tail Wheel Tyre Size | 255 x 110 mm (10.0 x 4.3 in) |

F.IV. Operating and Service Instructions

See: Note 3

Aeroplane Flight Manual (AFM)

Flight Manual for the PZL-104 Wilga 32 aircraft
Date of issue: March 1968

Aeroplane Maintenance Manual (AMM)

Service and Maintenance Instruction of the PZL-104 Wilga 32 aircraft
Date of issue: 1968
Scheduled Inspection and Maintenance Requirements for the PZL-104 Wilga 32 aircraft
Date of issue: 1968
Technical Description of the PZL-104 Wilga 32 aircraft
Date of issue: 1968

Service Information and Service Bulletins

F.V. Notes

1. For airspeed limits with gliders in tow and with door removed for parachute jumps, and other limitations – see Flight Manual for the PZL-104 Wilga 32 aircraft.
2. Permissible crew number, baggage and fuel amount depend on loading version – see Flight Manual for the PZL-104 Wilga 32 aircraft
3. Variant PZL-104 Wilga 32A differs from variant PZL-104 Wilga 32 only by installation of towing hook and wider step. All instructions and other documents applicable to PZL-104 Wilga 32 are valid for variant PZL-104 Wilga 32A
4. Formerly: PZL “Warszawa-Okęcie”,
Wytwórnia Sprzętu Komunikacyjnego “PZL-Warszawa-Okęcie”.

G: PZL-104 Wilga 35 , PZL-104 Wilga 35A

G.I. General

| | | |
|---|--|----------------------|
| Data Sheet No : EASA A.061 | Issue: 02 | Date: 8 January 2007 |
| 1. a) Type: b) Variant: | PZL-104 Wilga PZL-104 Wilga 35, PZL-104 Wilga 35A – aeroclub, for glider towing and parachute jumper lifting See: Note 6 | |
| 2. Airworthiness Category: | Normal | |
| 3 Type Certificate Holder: | EADS PZL “Warszawa-Okęcie” S A Al Krakowska 110/114 WARSAW 00-971 POLAND | |
| 4. Manufacturer: | EADS PZL “Warszawa-Okęcie” S A Al Krakowska 110/114 WARSAW 00-971 POLAND See: Note 8 | |
| 5. Certification Application Date: | October 11, 1967 | |
| 6. GICA/CAIB Certification Date: | March 31, 1969 | |
| 7 EASA Certification Date: | January 8, 2007 | |
| 8 The EASA TCDS replaces CAO Poland TCDS No BB-55 | | |

G.II. Certification Basis

| | |
|---|---|
| 1. Reference Date for determining the applicable requirements: | See G II.5 |
| 2 (Reserved) | |
| 3 (Reserved) | |
| 4. Certification Basis: | As defined below |
| 5 Airworthiness Requirements: | BCAR, Section D, 1959 |
| 6 (Reserved) | |
| 7 EASA Special Conditions: | None |
| 8 EASA Exemptions: | None |
| 9 EASA Equivalent Safety Findings: | None |
| 10 EASA Environmental Standards: | ICAO Annex 16, Volume 1, Chapter 6; Edition 1978 See: Note 4 |

G.III. Technical Characteristics and Operational Limitations

| | |
|--|---|
| 1. Type Design Definition: | Drawings No : 35 900 000 Universal plane, 35 910 000 Basic aircraft |
| 2 Description: | Single radial engine, fixed landing gear with tail wheel, four-seat cantilever high-wing, all metal monoplane |
| 3 Equipment: | 35.W-02 "List of equipment installed on the aircraft", Edition 2 of August 27, 1960 and Edition B of Nov 11, 1983. Refer also to Flight Manual for the PZL-104 Wilga 35 aircraft; see also CAIB Aircraft Type Certificate Data Sheet No. BB-55, issued March 1969 |
| 4. Dimensions: | |
| Span | 11.12 m (36 ft 5.8 in) |
| Length | 8.10 m (26 ft 6.8 in) |
| Height | 2.94 m (9 ft 7.7 in) |
| Wing Area | 15.57 m ² (167.6 sq ft) |
| MAC | 1.4 m (4 ft 7.1 in) |
| 5 Engine: | AI-14R |
| 5.1 Engine Limits: | |
| Maximum take-off rating (5 minutes) | 193.9 kW (263.6 metric HP) (260 BHP) |
| Maximum continuous rating | 164.1 kW (223.1 metric HP) (220 BHP) |
| Maximum engine speed for take-off rating | 2350 rpm at sea level |
| Maximum engine speed for continuous rating | 2050 rpm |
| | For other engine limits refer to AFM |
| 6. (Reserved) | |
| 7. Propeller: | US-122000 two blade, hydraulically controlled |
| 7.1 Settings | constant speed |
| 7.2 Diameter | 2650 mm (104.3 in) |
| 8 Fluids: | |
| 8.1 Fuel: | B70 aviation gasoline |
| 8.2 Oil: | MS20 or MK22 acc. to GOST 1013-49, Aero Shell W100 or equivalents |
| 9 Fluid capacities: | |
| 9.1 Fuel: | Overall 190 l (140 kg) (50.2 US Gal) in two tanks in wings Additionally 90 l (65 kg) in an extra fuel tank installed in a place of rear seats – See: Note 5 |
| 9.2 Oil: | 16 l (13 kg)(16.9 US qt) in tank on fire-wall |
| 10 Air Speeds: | |
| Never exceed speed V_{NE} : | 279 km/h (151 kts) |
| Normal operating speed V_{NO} : | 228 km/h (123 kts) |
| Maneuvering speed V_A : | 160 km/h (86 kts) |
| Flaps extended speed V_{FE} : | 130 km/h (70 kts) |

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| | <i>version for glider towing and parachute jumper lifting</i> |
| 11. Maximum Operating Altitude: | For airspeed limits and other limitations – see Flight Manual for the PZL-104 Wilga 35A aircraft |
| 12. All Weather Capability: | Not defined |
| | VMC (standard) and IMC (with navigation equipment on special request) flights |
| 13. Maximum Masses: | |
| Take-off & Landing | 1230 kg (2712 lb) |
| | 1300 kg (2866 lb) (for a/c S/N from 85218) |
| 14. Centre of Gravity Range: | |
| Forward limit: | 24.2 % MAC, i.e. 0.339 m (13.35 in) aft of datum |
| Rear limit: | 44.0 % MAC, i.e. 0.616 m (24.3 in) aft of datum |
| 15. Datum: | A plane tangent to the leading edge of the wing slat and perpendicular to the mean aerodynamic chord (MCA) |
| 16. (Reserved) | |
| 17. Leveling Means: | MAC positioned horizontally |
| 18. Minimum Flight Crew: | 1 (Pilot) |
| 19. Maximum Passenger Seating Capacity: | 3 standard |
| | 1 for a version for prolonged cruise |
| | <i>Version for parachute jumpers lifting</i> |
| Maximum Passenger Seating Capacity: | 4 – See: Note 7 |
| 20. (Reserved) | |
| 21. Baggage | |
| Max allowable Load: | 35 kg (77.2 lb) in baggage compartment |
| 22. Wheels and Tyres | |
| Main Wheel Tyre Size | 500 x 200 mm (19.7 x 7.9 in.) |
| Tail Wheel Tyre Size | 255 x 110 mm (10.0 x 4.3 in.) |

G.IV. Operating and Service Instructions

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| | See: Note 6 |
| Aeroplane Flight Manual (AFM) | Flight Manual for the PZL-104 Wilga 35A aircraft valid for a/c S/N 48031-74217 |
| | Flight Manual for the PZL-104 Wilga 35A aircraft Issue A, valid for a/c S/N from 74218 |
| Aeroplane Maintenance Manual (AMM) | Maintenance Instruction and Scheduled Inspection for the PZL-104 Wilga 35 aircraft, Issue Warszawa 1981, valid for a/c S/N 48031-74217 |
| | Maintenance Instruction and Scheduled Inspections for the PZL-104 Wilga 35 aircraft, Issue B Warsaw 1975, valid for a/c S/N from 85218 |
| | Maintenance Instruction and Scheduled Inspections for the PZL-104 Wilga 35A aircraft Issue C Warszawa 1982, valid for a/c S/N from 16820629 |
| | Technical Description of the PZL-104 Wilga 35A aircraft, Issue D, 1982 |

Service Information and Service Bulletins

G.V. Notes

1. For airspeed limits with gliders in tow and with door removed for parachute jumps, and other limitations – see Flight Manual for the PZL-104 Wilga 35A aircraft See: Note 6
2. Permissible crew number, baggage and fuel amount depend on loading version – see Flight Manual for the PZL-104 Wilga35 aircraft
3. For glider towing:

| | |
|--------------------------------------|---------------------------------|
| Permissible number of gliders in tow | 3 |
| Overall weight of towed gliders | not exceeding 1125 kg (2481 lb) |
| Permissible weight of single glider | 650 kg (1433 lb) |
4. Approved Noise Level in accordance with ICAO Annex 16, Volume 1, Chapter 6; Edition 1978 63.0 dB(A)
5. For prolonged cruise the additional fuel tank could be installed instead of rear seats – see: Supplement No 2 to the airplane's AFM
6. Variant PZL-104 Wilga 35A differs from variant PZL-104 Wilga 35 only by installation of towing hook and wider step. After 1979 only PZL-104 Wilga 35A variant was manufactured. Instructions and other documents edited before 1979 assigned to PZL-104 Wilga 35 are, considering later revisions, valid for variant PZL -104 Wilga 35A
7. Valid for airplanes up to XV Series (S/N 15 XX XXX) inclusive
8. Formerly: PZL "Warszawa-Okęcie",
Wytwórnia Sprzętu Komunikacyjnego "PZL-Warszawa-Okęcie"

Change record

- | | |
|---------|---|
| Issue 1 | 16 November 2005. Initial release Wilga 80 and Wilga 2000 series |
| Issue 2 | 8 January 2007. Addition of PZL-104 Wilga 32, 32A, 35 and 35A Addition of original Polish TC numbers for AI-14 engines and US 122000 propellers. |
| Issue 3 | 17 October 2008. Editorial refinement and corrections to flight and maintenance manual references, titles and dates. |
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