EASA

TYPE-CERTIFICATE
DATA SHEET

EASA.A.058

PZL M28

Polskie Zakłady Lotnicze Sp. z o. o.
Wojska Polskiego 3
39-300 Mielec
POLAND

For models:  PZL M28 00
            PZL M28 02
            PZL M28 05

Issue 08:   03 Nov 2015
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## SECTION A: PZL M28 00

### A.I. General

1. Data Sheet No.: A.058 Issue: 01 Date: October 24, 2005

2. a) Type: PZL M28
   b) Model: PZL M28 00
   c) Variant: - passenger (18 pax) transport
      - cargo transport
      - passenger/cargo transport
      - paradrop

3. Airworthiness Category: Commuter

4. Type Certificate Holder: Polskie Zaklady Lotnicze Sp. z o. o.

5. Manufacturer: Polskie Zaklady Lotnicze Sp. z o. o.

6. Certification Application Date: Sep 14, 2004 (to EASA)

7. (Reserved) National Certifying Authority
   Civil Aviation Office, Poland

8. (Reserved) National Authority Type Certificate Date: May 15, 1995
   This EASA Type Certificate replaces the Polish CAO Type Certificate No. BB-199/1

9. Reserved
   none

### A.II Certification Basis

1. Reference Date for determining the applicable requirements: Oct 11, 1986

2. Airworthiness Requirements: FAR Part 23, including Amendment 23 - 34

3. Special Conditions: None

4. Exemptions: None

5. Deviations: None

6. Equivalent Safety Findings: None

7. Environmental Standards: FAR Part. 34 Subp. B, FAR Part. 36 App. G.

8. (Reserved) Additional National Requirements: none

9. (Reserved) none
A.III  Technical Characteristics and Operational Limitations

1. Type Design Definition: specification sheet No. 28.15.0000.000.000
2. Description: The PZL M28 Model 00 is a twin-engined high-wing cantilever turboprop STOL airplane of all-metal structure, with twin vertical tails and a tricycle non-retractable landing gear featuring a steerable nose wheel
3. Equipment:
4. Dimensions:
   Length 13.10 m (43 ft)
   Height 4.90 m (16 ft 1 in)
   Wing span 22.06 m (72 ft 4 in)
   Wing area 39.72 m² (427.5 sq. ft.)
5. Engine:
   5.1.1 Model: PT6A-65B turboprop with a free turbine, reduction ratio of 0.0568:1
   5.1.2 Type Certificate: E4EA
   5.1.3 Limitations: For power-plants limits refer to Airplane Flight Manual, PZL M28 with PT6A-65B Engines ref No. M28/LTO-3/27/95,
   5.1.4. Engine Performance:

<table>
<thead>
<tr>
<th></th>
<th>SHP</th>
<th>PSIG</th>
<th>rpm</th>
<th>%</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takeoff</td>
<td>1100*</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>820</td>
</tr>
<tr>
<td>Max. Continuous</td>
<td>1100**</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>810</td>
</tr>
<tr>
<td>Max. Cruise</td>
<td>1000***</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>800</td>
</tr>
</tbody>
</table>

* attainable up to 50.5 °C; ** attainable up to 45.5 °C; *** attainable up to 42.5 °C
5.1.5 Number of engines: 2
6. Load factors:
   Flaps Up n=+3.0 , -1.0
   Flaps Down n=+2.0 , 0
7. Propeller:
   7.1 Model: HC-B5MP-3D/M10876ANSK five-blade, all-metal, constant-speed, with WOODWARD speed governor (3032082A)
   7.2 Type Certificate: P44GL
   7.3 Number of blades: 5 (five)
   7.4 Diameter: 2.820 m (9 ft 3in)
   7.5 Sense of Rotation: Clockwise
8. Fluids:


8.2 Oil: Aero Shell Turbine Oil 500, Royco Turbine Oil 500, Mobil Jet Oil II, Castrol 5000, BP Turbo Oil 2380 - in accordance with Pratt & Whitney Bulletin No. 13001.

8.3 Coolant: N/A

9. Fluid capacities:

9.1 Fuel:
- Wing with no auxiliary tanks 1960 l (518 US Gal.)
- Wing with auxiliary tanks 2440 l (645 US Gal.)
- Extra long-ferry fuel tank inside fuselage 2090 l (552 US Gal.)

9.2 Oil: 2 x 9.45 l (2.5 US gal)

9.3 Coolant system capacity: N/A

10. Air Speeds:

Airspeed Limitations:

Max. Allowable Operating Speed $V_{MO}$ 355 345

Design Maneuvering Speed, $V_A$ 230 225

Max. Allowable Flap-Extended Speed, $V_{FE}$

Flaps 15° 215 210
Flaps 40° 200 190

Max. Spoiler-Extended Speed, $V_{NS}$

- outboard spoilers 215 210
- inboard spoilers 215 210

Minimum Control Speed, $V_{MC}$ 135 130

11. Maximum Operating Altitude:

- without oxygen supply system 3000 m
- with oxygen supply system installed 4000 m
- cargo transport version with crew oxygen supply system provided 7620 m

12. Allweather Operations Capability:

- VFR flights, day and night
- IFR flights, day and night

13. Weights:

Max. Takeoff 6500 kg
Max. Landing 6175 kg
14. Centre of Gravity Range:

![Graph showing weight range](image)

15. Datum: 
2.470 m (97.24 in) Frame No. 9, Forward 
(see fig. 6.1, AFM, Chapter 6)

16. Control Surface Deflections:

<table>
<thead>
<tr>
<th>Surface</th>
<th>Direction</th>
<th>Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ailerons</td>
<td>Up</td>
<td>22° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Down</td>
<td>16° 20’ ± 1°</td>
</tr>
<tr>
<td>Aileron Trim Tab</td>
<td>Up</td>
<td>14° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Down</td>
<td>14° ± 1°</td>
</tr>
<tr>
<td>Elevator</td>
<td>Up</td>
<td>27° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Down</td>
<td>19° ± 1°</td>
</tr>
<tr>
<td>Elevator Trim Tab (Elevator Neutral)</td>
<td>Up</td>
<td>15° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Down</td>
<td>25° ± 1°</td>
</tr>
<tr>
<td>Rudder LH</td>
<td>Inboard</td>
<td>16° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Outboard</td>
<td>22° ± 1°</td>
</tr>
<tr>
<td>Rudder RH</td>
<td>Inboard</td>
<td>16° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Outboard</td>
<td>22° ± 1°</td>
</tr>
<tr>
<td>Rudder Trim Tab (Rudder Neutral)</td>
<td>Left</td>
<td>15° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>15° ± 1°</td>
</tr>
<tr>
<td>Wing Flaps</td>
<td>Takeoff</td>
<td>15° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Landing</td>
<td>40° ± 1°</td>
</tr>
<tr>
<td>Spoilers</td>
<td>Inboard</td>
<td>45° ± 1°</td>
</tr>
<tr>
<td></td>
<td>Outboard</td>
<td>60° ± 1°</td>
</tr>
</tbody>
</table>
17. Levelling Means: 1LP = LH and RH levelling point on frame No. 9
(see fig. 6.1, AFM, Chapter 6)

18. Minimum Flight Crew: 2 (two) pilots

19. Maximum Passenger Seating Capacity: 18

20. Baggage/Cargo Compartments:
Max. Baggage Compartment Load: 150 kg
Max. Payload: 1750 kg

21. Wheels and Tyres:
Main wheel tyre size 720 x 310 mm (28.30 x 12.20 in)
Nose wheel tyre size (Type 6.50x10 – GOOD YEAR) 561x169 mm (22.10x6.65 in)

22. Landing gear: Fixed, tricycle type, with a steerable nose wheel
Nose Wheel Controlling Angle ± 15°
Nose Wheel Controlling Angle with Steering OFF ± 50°

23. Max. Service Ceiling:
- without oxygen-supply system 3000 m
- with oxygen-supply system 4000 m
- cargo transport configuration with oxygen system for the crew 7620 m

24. Operating Ambient Temperature Range: -50°C to +50°C

25. (Reserved):
A.IV  Operating and Service Instructions


5. Spare Parts Catalogue: Illustrated Parts Catalog, ref No. M28/14/97/LTO-3

6. Table of Dimensions, Limits and Clearances: see Chapter 6 of appropriate Maintenance Manual

7. Instruments and aggregates: see
   for standard equipment:
   As defined in Section 7 of the Airplane Flight Manual, PZL M28 with PT6A-65B Engines ref No. M28/LTO-3/27/95,
   for optional & operational equipment:
   As defined in Section 9 of the Airplane Flight Manual, PZL M28 with PT6A-65B Engines ref No. M28/LTO-3/27/95,

8. Airplane Service Life, and Component TBOs:
   Airplane Service Life, Component TBOs as defined in Sec. 4 of M28 Maintenance Manual (M28/4/95/LTO-33).

A.V  Notes

1. Flight in known or forecast icing conditions is prohibited

2. This Type Certificate applies to aircraft S/N: AJEP1-01 and to AJE001-02 and up

3. When the ice protection system is installed, flight with this system operative is allowed but with consideration for note 1. (above).
SECTION B: PZL M28 02

B.I. General

1. Data Sheet No.: A.058 Issue: 01 Date: October 24, 2005
2. a) Type: PZL M28
   b) Model: PZL M28 02
   c) Variant: passenger transport (18 passengers + 1 attendant seat)
   - passenger „Executive” (designation M28 02-E), 8 or 10 passenger seats (depending on seat model) + 2 attendants’ seats
   - cargo transport
   - mixed passenger/cargo transport
   - paradrop
   - liquid-cargo transportation
   - long-range ferry

For above listed versions the reinforced PZL M28 02-W variant with 7500 kg MTOW is approved.

3. Airworthiness Category: Commuter
4. Type Certificate Holder: Polskie Zakłady Lotnicze Sp. z o. o.
5. Manufacturer: Polskie Zakłady Lotnicze Sp. z o. o.
6. Certification Application Date: Sep 14, 2004 (to EASA)
7. National Certifying Authority: Civil Aviation Office, Poland
8. National Authority Type Certificate Date: Feb 23, 1996
   This EASA Type Certificate replaces the Polish CAO Type Certificate No. BB-199/1
9. Reserved

B.II Certification Basis

1. Reference Date for determining the applicable requirements: Oct 11, 1986
2. Airworthiness Requirements: FAR Part 23, including Amendment 23 – 34. For flight in known and forecast icing (FIKI) see certification basis for PZL M2805 model for FIKI.

3. Special Conditions: None
4. Exemptions: None
5. Deviations: None
6. Equivalent Safety Findings: None
7. Requirements elected to comply: none
8. Environmental Standards: FAR Part. 34 Subp. B, FAR Part. 36 App. G.
9. (Reserved) Additional none
National Requirements:

9. (Reserved) none
B.III Technical Characteristics and Operational Limitations

1. Type Design Definition: specification sheet No. 28.15.0000.000.000
2. Description: The PZL M28 Model 02 is a twin-engine high-wing cantilever turboprop STOL airplane of all-metal structure, with twin vertical tails and a tricycle non-retractable landing gear featuring a steerable nose wheel.

3. Equipment:

4. Dimensions:
   Length 13.10 m (43 ft)
   Height 4.90 m (16 ft 1 in)
   Wing span 22.06 m (72 ft 4 in)
   Wing area 39.72 m² (427.5 ft²)

5. Engine:
   5.1.1 Model: PT6A-65B turboprop with a free turbine, reduction ratio of 0.0568:1
   5.1.2 Type Certificate: E4EA
   5.1.3 Limitations: For power-plants limits refer to Airplane Flight Manual, PZL M28 with PT6A-65B Engines ref No. M28/LTO-3/27/95,
   5.1.4 Engine Performance:

<table>
<thead>
<tr>
<th></th>
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<th>PSIG</th>
<th>rpm</th>
<th>%</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takeoff</td>
<td>1100*</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>820</td>
</tr>
<tr>
<td>Max. Continuous</td>
<td>1100**</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>810</td>
</tr>
<tr>
<td>Max. Cruise</td>
<td>1000***</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>800</td>
</tr>
</tbody>
</table>

* attainable up to 50.5 °C; ** attainable up to 45.5 °C; *** attainable up to 42.5 °C
   5.1.5 Number of engines: 2

6. Load factors:
   For model M28 02 (7000 kg MTOW) and M28 02-W (7500 kg MTOW)
   Flaps Up Flaps Down
   n=+3.0 , -1.0   n=+2.8 , -1.0
   n=+2.0 , 0     n=+2.0 , 0

7. Propeller:
   7.1 Model: HC-B5MP-3D/M10876ANSK five-blade, all-metal, constant-speed, with WOODWARD speed governor (3032082A)
   7.2 Type Certificate: P44GL
   7.3 Number of blades: 5 (five)
   7.4 Diameter: 2.820 m (9 ft 3in)
   7.5 Sense of Rotation: Clockwise
8. Fluids:


8.2 Oil: Aero Shell Turbine Oil 500, Royco Turbine Oil 500, Mobil Jet Oil II, Castrol 5000, BP Turbo Oil 2380 - in accordance with Pratt & Whitney Bulletin No. 13001.

8.3 Coolant: N/A

9. Fluid capacities:

9.1 Fuel: 1766 kg (2278 l), (3894 lbs; 602 US Gal.)

9.2 Oil: 2 x 9.45 l (2.5 US gal)

9.3 Coolant system capacity: N/A

10. Air Speeds:

Airspeed Limitations: IAS (km/h) CAS (km/h)
Max. Allowable Operating Speed $V_{MO}$ 355 345
Design Maneuvering Speed, $V_A$ 230 225

for PZL M28 02-W variant: 244 238

Max. Allowable Flap-Extended Speed, $V_{FE}$

<table>
<thead>
<tr>
<th>Flaps</th>
<th>IAS (km/h)</th>
<th>CAS (km/h)</th>
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</thead>
<tbody>
<tr>
<td>$15^\circ$</td>
<td>215</td>
<td>210</td>
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<tr>
<td>$40^\circ$</td>
<td>200</td>
<td>190</td>
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</table>

Max. Spoiler-Extended Speed, $V_{NS}$

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<tr>
<th>- outboard spoilers</th>
<th>IAS (km/h)</th>
<th>CAS (km/h)</th>
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<tr>
<td>215</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td>- inboard spoilers</td>
<td>IAS (km/h)</td>
<td>CAS (km/h)</td>
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<tr>
<td>215</td>
<td>210</td>
<td></td>
</tr>
</tbody>
</table>

Minimum Control Speed, $V_{MC}$ 153 146

11. Maximum Operating Altitude:

- without oxygen supply system 3000 m
- with oxygen supply system installed 4000 m
- cargo transport version with crew oxygen supply system provided 7620 m

12. Allweather Operations Capability:

- VFR flights, day and night
- IFR flights, day and night

13. Weights:

Max. Takeoff 7000 kg
Max. Landing 6650 kg
Max. Takeoff for Ferry Flight 7500 kg
Max. Takeoff and Landing for M28 02-W variant 7500 kg
14. Centre of Gravity Range:

<table>
<thead>
<tr>
<th>Weight [kg]</th>
<th>4500</th>
<th>5000</th>
<th>5500</th>
<th>6000</th>
<th>6500</th>
<th>7000</th>
<th>7500</th>
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<td>4.65</td>
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</tbody>
</table>

For Feery-flght and M28 03-W variant

15. Datum: 2.470 m (97.24 in) Frame No. 9, Forward
   (see fig. 6.1, AFM, Chapter 6)

16. Control Surface Deflections:

   Ailerons:
   - Up: 22° ± 1°
   - Down: 16° 20' ± 1°

   Aileron Trim Tab:
   - Up: 14° ± 1°
   - Down: 14° ± 1°

   Elevator:
   - Up: 27° ± 1°
   - Down: 19° ± 1°

   Elevator Trim Tab: (elevator neutral)
   - Up: 15° ± 1°
   - Down: 25° ± 1°
   - (19° ± 1°)*
   - (21° ± 1°)*

   Rudder LH:
   - Inboard: 16° ± 1°
   - Outboard: 22° ± 1°

   Rudder RH:
   - Inboard: 16° ± 1°
   - Outboard: 22° ± 1°

(*) On airplane S/N AJE001-01 only.
Rudder Trim Tab: *(rudder neutral)*
- Left: $15^\circ \pm 1^\circ$
- Right: $15^\circ \pm 1^\circ$

Wing Flaps:
- Takeoff: $15^\circ \pm 1^\circ$
- Landing: $40^\circ \pm 1^\circ$

Spoilers:
- Inboard: $45^\circ \pm 1^\circ$
- Outboard: $60^\circ \pm 1^\circ$

17. Levelling Means: $1LP = LH$ and $RH$ levelling point on frame No. 9
(see fig. 6.1 AFM, Chapter 6)

18. Minimum Flight Crew: 2 (two) pilots

19. Maximum Passenger Seating Capacity:
- Passenger Seating Capacity: $18 + 1$ attendant seat
- Passenger Seating Capacity in “Executive” version: $8$ or $10$ passenger seats (depending on seat model) + $2$ attendants’ seats

20. Baggage/Cargo Compartments:
- Max. Baggage in Under Fuselage Pod: $300$ kg
- Max. Payload: $2000$ kg
- Max. Baggage on Baggage Shelf: $150$ kg 1)
- Max. Hoist Capacity: $700$ kg 1)

1) not applicable for “Executive” version

21. Wheels and Tyres:
- Main wheel tyre size: $720 \times 310$ mm ($28.30 \times 12.20$ in)
- Nose wheel tyre size (Type 6.50x10 – GOOD YEAR): $561 \times 169$ mm ($22.10 \times 6.65$ in)

22. Landing gear:
- Fixed, tricycle type, with a steerable nose wheel
- Nose Wheel Controlling Angle: $\pm 15^\circ$
- Nose Wheel Controlling Angle with Steering OFF: $\pm 50^\circ$

for M28 02-W variant:
- Main Gear: rocker-type with a single-chamber shock absorber,
- Nose Gear: rocker-type, with a double-chamber shock absorber,

- Nose Wheel Controlling Angle: $\pm 15^\circ$
- Nose Wheel Controlling Angle with Steering OFF: $\pm 45^\circ$

23. Max. Service Ceiling:
- without oxygen-supply system: $3000$ m
- with oxygen-supply system: $4000$ m
- cargo transport configuration with oxygen system for the crew: $7620$ m

24. Operating Ambient Temperature Range: $-50^\circ$C to $+50^\circ$C

25. (Reserved):
B.IV Operating and Service Instructions


5. Spare Parts Catalogue: Illustrated Parts Catalog, ref No. M28/14/97/LTO-3

6. Table of Dimensions, Limits and Clearances: see Chapter 6. Of appropriate Maintenance Manual

7. Instruments and aggregates: see
   for standard equipment:
   As defined in Section 7 of the Airplane Flight Manual, PZL M28 with PT6A-65B Engines ref No. M28/LTO-3/27/95,
   for optional & operational equipment:
   As defined in Section 9 of the Airplane Flight Manual, PZL M28 with PT6A-65B Engines ref No. M28/LTO-3/27/95,

8. Airplane Service Life, and Component TBOs: Airplane Service Life, Component TBOs as defined in Sec. 4 of M28 Maintenance Manual (M28/4/95/LTO-33)

9. OSD (M28 02-W only): OSD FC M28 02-W DTD/108/2015, Initial Issue from 29 Oct 2015, or later approved Revision

10. MMEL (M28 02-W only): MMEL PZL M28 02-W M28 05, Original Issue from 20 May 2015, or later approved Revision

B.V Notes

1. [Reserved.]

2. PZL M28 02-W variant: is approved for operation on condition of execution of provisions included in Bulletin No. E/12.048/2001 only.

3. This Type Certificate applies to aircraft S/N: AJE001-01 and up. For flight in known and forecast icing (FIKI) this certificate applies for AJE001-01 airplane only.

4. When the ice protection system is installed, flight with this system operative is allowed but with consideration for note 3. (above).

5. Chapter 4. Of the Maintenance Manual Ref No. M28/4/95/LTO-33 related to the FIKI have been approved on the Chapter 4. Of the Maintenance Manual Ref. No.: M28/11/2002, approved for PZL M28 05 model for FIKI basis
SECTION C : PZL M28 05

C.I.  General

1. Data Sheet No.: A.058
   Issue: 01  Date: October 24, 2005
   PZL M28 05-SG variant : Issue: 02  Date: April 21, 2006

2. a) Type: PZL M28
   b) Model: PZL M28 05
   c) Variant:
      - passenger transport, max. 19 passengers;
      - cargo transport;
      - passenger/cargo transport mix, max. 18 passengers;
      - paradrop;
      - liquid-cargo transportation;
      - long-range ferry;
      - version of improved standard, max. 13 passengers
      - with the special equipment
        transportation/release system (designation PZL M28 05-S)
      - maritime patrol (designation PZL M28 05-MPW)
      - for Border Guard missions (designation PZL M28 05-SG)

3. Airworthiness Category: Commuter

4. Type Certificate Holder: Polskie Zaklady Lotnicze Sp. z o. o.

5. Manufacturer: Polskie Zaklady Lotnicze Sp. z o. o.

6. Certification Application Date: Sep 14, 2004 (to EASA)

7. (Reserved) National Certifying Authority
   Civil Aviation Office, Poland

8. (Reserved) National Authority Type Certificate Date:
   Nov. 17, 1999 (acc. to BB-199/1)
   Apr. 18, 2002  (acc. to BB-216)
   This EASA Type Certificate replaces the Polish CAO Type Certificates No. BB-199/1 and BB-216

9. Reserved
   none
C.II Certification Basis

1. Reference Date for determining the applicable requirements:
   Oct 11, 1986 (acc to the BB-199/1)
   Feb 2, 1991  (acc to the BB-216)

2. Airworthiness Requirements:
   for airplanes S/N AJE001-19 up to AJE002-10 (Polish CAO TC No. BB199/1):
   FAR Pt. 23, Amendment 34, FAR Pt. 23, Amendment 42: Flight Data Recorder (23.1459), Voice Recorder (23.1457)
   FAR Pt. 23, Amendment 49: Installations, systems and airplane reliability analysis (23.1309)
   FAR Pt. 23, Amendment 50: Stall warning (23.207)
   FAR Pt. 34, Subpart B, FAR Pt. 36, Appendix G.

   for airplanes S/N AJE00301 and up : (Polish CAO TC No. BB216) FAR 23, Amendment 42,
   FAR 23, Amendment 49 : 23.1309,
   FAR 23, Amendment 50 : 23.49, 23.201, 23.203, 23.205, 23.207 and 23.1545

   for airplanes S/N AJE00301 and up for service life extension FAR 23, Amendment 48: 23.572, 23.574, 23.575, 23.629

   for airplanes with ice protection system installed, certified for FIKI, S/N AJE00301 and up
   FAR 23, Amendment 42, FAR 23, Amendment 43: 23.1419,
   FAR 23, Amendment 45: 23.1525,
   FAR 23, Amendment 50 : 23.49, 23.63, 23.67, 23.69, 23.75, 23.201, 23.203, 23.207, 23.1325, 23.1559, 23.1581, 23.1583 and 23.1585
   FAR 23, Amendment 51: 23.929, 23.975 and 23.1093
   FAR 23, Amendment 53: 23.901
   FAR 23, Amendment 54: 23.903
   FAR 23, Amendment 62: 23.73

3. Special Conditions: None

4. Exemptions: None

5. Deviations: None

5. Equivalent Safety Findings: Equivalent Safety Level FAR 23.1361(a) - Master Switch Arrangement

6. Requirements elected to comply: None

8. (Reserved) Additional National Requirements: none

9. (Reserved) none
C.III Technical Characteristics and Operational Limitations

1. Type Design Definition: specification sheet No. 28.15.0000.000.000

2. Description: The PZL M28 Model 05 is a twin-engined high-wing cantilever turboprop STOL airplane of all-metal structure, with twin vertical tails and a tricycle non-retractable landing gear featuring a steerable nose wheel.

3. Equipment:
   Standard: For airplanes S/N AJE001-19 up to AJE002-10: as defined in Section 7 of the Airplane Flight Manual (M28/14/99).
   Optional & Operational: For airplanes S/N AJE001-19 up to AJE002-10: as defined in Section 9 of the Airplane Flight Manual (M28/14/99 Issue).

4. Dimensions:
   Length 13.10 m  (43 ft)
   Height 4.90 m  (16 ft 1 in)
   Wing span 22.06 m  (72 ft 4 in)
   Wing area 39.72 m2  (427.5 ft2)

5. Engine:
   5.1.1 Model: PT6A-65B turboprop with a free turbine, reduction ratio of 0.0568:1
   5.1.2 Type Certificate: E4EA
   5.1.4 Engine Performance:

<table>
<thead>
<tr>
<th></th>
<th>SHP</th>
<th>PSIG</th>
<th>rpm</th>
<th>%</th>
<th>°C</th>
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<tbody>
<tr>
<td>Takeoff</td>
<td>1100*</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>820</td>
</tr>
<tr>
<td>Max. Continuous</td>
<td>1100**</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>810</td>
</tr>
<tr>
<td>Max. Cruise</td>
<td>1000***</td>
<td>43.34</td>
<td>1700</td>
<td>104</td>
<td>800</td>
</tr>
</tbody>
</table>

* attainable up to 50.5 °C; ** attainable up to 45.5 °C; *** attainable up to 42.5 °C

5.1.5 Number of engines: 2

6. Load factors:
   Flaps Up n=+3.0 , -1.0
   Flaps Down n=+2.0 , 0
7. Propeller:
   7.1 Model: HC-B5MP-3D/M10876ANSK five-blade, all-metal, constant-speed, with WOODWARD speed governor (3032082A) Hartzell Propeller Inc. (USA)
   7.2 Type Certificate: P44GL
   7.3 Number of blades: 5 (five)
   7.4 Diameter: 2.820 m (9 ft 3in)
   7.5 Sense of Rotation: Clockwise

8. Fluids:
   8.2 Oil Aero Shell Turbine Oil 500, Royco Turbine Oil 500, Mobil Jet Oil II, Castrol 5000, BP Turbo Oil 2380 - in accordance with Pratt & Whitney Bulletin No. 13001.
   8.3 Coolant: N/A

9. Fluid capacities:
   9.1 Fuel: 1766 kg (2278 l), (3894 lbs; 602 US Gal.)
   9.2 Oil: 2 x 9.45 l (2.5 US gal)
   9.3 Coolant system capacity: N/A

10. Air Speeds:
    Airspeed Limitations:  
    Max. Operating (Limit) Speed, $V_{mo}$: 355 [km/h] 345 [km/h]  
    Design Maneuvering Speed, $V_A$: 244 [km/h] 238 [km/h]  
    Max. Flaps-Extended Speed, $V_{FE}$:  
    Flaps 15°: 215 [km/h] 210 [km/h]  
    Flaps 40°: 200 [km/h] 190 [km/h]  
    Max. Spoiler-Deployed Speed, $V_{NS}$: 215 [km/h] 210 [km/h]  
    Minimum Control Speed, $V_{MC}$: 153 [km/h] 146 [km/h]  

11. Maximum Operating Altitude: 7620 m (25000 ft)

12. Allweather Operations Capability: VFR day and night, IFR day and night

13. Weights:
    Max. Takeoff: 7500 kg
    Max. Landing: 7500 kg
    Max. Zero-Fuel: 6900 kg
    Max. Payload: 2300 kg
Note:

- max. 2000 kg in Cargo/Passenger Cabin (inclusive of max. 40 kg on baggage shelf in fuselage rear part)
- max. 300 kg in under fuselage baggage pod

Minimum Weight for Flight: 4700 kg
Max. Baggage in Underfuselage Pod: 300 kg
Max. Baggage on Baggage Shelf: 40 kg
Hoist Lifting Capacity Max: 700 kg

14. Centre of Gravity Range:

![Graph showing weight vs. MAC percentage]
15. Datum: 2.470 m (97.24 in) Frame No. 9, Forward
(see AFM, Chapter 6, fig. 6.1)

16. Control Surface Deflections:

- **Ailerons:**
  - Up: $22^\circ \pm 1^\circ$
  - Down: $16^\circ \pm 1^\circ$

- **Aileron Trim Tab:**
  - Up: $14^\circ \pm 1^\circ$
  - Down: $14^\circ \pm 1^\circ$

- **Elevator:**
  - Up: $27^\circ \pm 1^\circ$
  - Down: $19^\circ \pm 1^\circ$

- **Elevator Trim Tab:**
  - Up: $15^\circ \pm 1^\circ$
  - Down: $(19^\circ \pm 1^\circ)^*$

- **Rudder LH:**
  - Inboard: $16^\circ \pm 1^\circ$
  - Outboard: $22^\circ \pm 1^\circ$

- **Rudder RH:**
  - Inboard: $16^\circ \pm 1^\circ$
  - Outboard: $22^\circ \pm 1^\circ$

Rudder Trim Tab:
(Rudder Neutral)
- Left: $15^\circ \pm 1^\circ$
- Right: $15^\circ \pm 1^\circ$

Wing Flaps:
- Takeoff: $15^\circ \pm 1^\circ$
- Landing: $40^\circ \pm 1^\circ$

Spoilers:
- Inboard: $45^\circ \pm 1^\circ$
- Outboard: $60^\circ \pm 1^\circ$

17. Levelling Means:
1LP = LH and RH levelling point on frame No. 9
(see AFM, Chapter 6, fig. 6.1)

18. Minimum Flight Crew:
2 (two) pilots

19. Maximum Passenger Seating Capacity:
- passenger transport, max. 19 passengers;
- passenger/cargo transport mix, max 18 passengers;
- version of improved standard, max 13 passengers

20. Baggage/Cargo Compartments:
Max. payload: 2300 kg (5070 lbs) i.e:
- in cargo/passenger cabin max 2000 kg (4408 lbs)
  (on baggage shelf in fuselage rear part max 40 kg (88 lbs)
- in underfuselage baggage pod - max. 300 kg (662 lbs)

21. Wheels and Tyres:
Main wheel tyre size: 720 x 310 mm (28.30 x 12.20 in)
Nose wheel tyre size (Type 6.50x10 – GOOD YEAR) 561x169 mm (22.10x6.65 in)

22. Landing gear:
Fixed, tricycle type, with a steerable nose wheel
- Main Gear: rocker-type with a single-chamber shock absorber,
- Nose Gear: rocker-type, with a double-chamber shock absorber,
  Nose Wheel Controlling Angle $\pm 15^\circ$
  Nose Wheel Controlling Angle with Steering OFF $\pm 45^\circ$

23. Max. Service Ceiling:
- without oxygen-supply system 3000 m
- with oxygen-supply system 4000 m
- cargo transport configuration with oxygen system for the crew 7620 m

24. Operating Ambient Temperature Range:
-50°C to + 50°C

25. (Reserved):
C.IV Operating and Service Instructions

1. Flight Manual:
   *The serial number system of the M28 05 airplane is as follows: AJE001-XZ, AJE002-XZ, AJE003XZ and up. The XZ is the number of airplane in series.

2. Technical Manual:
   For airplanes S/N AJE001-19 up to AJE002-10 PZL M28 Maintenance Manual (P/N M28/4/95/PBD), Issue Dec. 1999, including Sec. 4: "AIRWORTHINESS LIMITATIONS" and Sec. 5: "MAINTENANCE SCHEDULE",


5. Spare Parts Catalogue:
   For airplanes S/N AJE001-19 up to AJE002-10: Illustrated Parts Catalog, ref No. M28/14/97/LTO-3
   For airplanes S/N AJE00301 up to AJE00309: Illustrated Parts Catalog, ref No. M28/10/2004
   For airplanes S/N AJE00310 and up: Illustrated Parts Catalog, ref No. M28/04/2010

6. Table of Dimensions, Limits and Clearances: see Chapter 6. Of appropriate Maintenance Manual

7. Instruments and aggregates: see for standard equipment:
   for airplanes S/N AJE001-19 up to AJE002-10: As defined in Section 7 of the Airplane Flight Manual (M28/14/99)
   for optional & operational equipment:
   for airplanes S/N AJE001-19 up to AJE002-10: As defined in Section 9 of the Airplane Flight Manual (M28/14/99 Issue)

8. Airplane Service Life, and Component TBOs:
9. **OSD:**
   OSD FC M28 DTD/108/2015, Initial Issue from 29 Oct 2015, or later approved Revision

10. **MMEL:**
    MMEL PZL M28 05, Original Issue from 20 May 2015, or later approved Revision

**C.V   Notes**

1. Flight in known icing condition is permitted, when certified IPS (ice protection system) is installed and is operational. This applies to S/N AJE00339 and up.

2. Flight in known icing condition is permitted, when certified IPS (ice protection system) is installed and is operational. This applies to prior airplanes with Bulletin no. E/12.115/2013 “Installation of ice protection system certified for flight in known and forecast icing conditions” incorporated. From S/N AJE00339 and up the IPS is an option

3. Flight in known or forecast icing conditions is prohibited when certified IPS (ice protection system) is not installed. This applies to S/N from AJE001-19 up to AJE002-10 airplanes.

4. This Type Certificate applies to aircraft S/N: AJE001-19 up to AJE002-10, and to aircraft S/N AJE00301 and up.

5. For airplanes in service, if operators are going to extend the airframe service life, they must incorporate SB E/12.101R3/2014 and use chap 4 of rev 52 of MM M28/11/2002 dated May 11, 2015 or later EASA approved revisions. Any repairs/modifications done to airplanes with this modification must comply with the certification basis listed above on this TCDS. This modification must be accomplished after the airplane reaches 7800-8000 flight hours or 11300-11500 landings (whichever is first).
ADMINISTRATIVE SECTION

I. Acronyms
AMM - Aircraft Maintenance Manual
CRI - Certification Review Item
FAR - Federal Aviation Regulations
EASA - European Aviation Safety Agency
IAS - Indicated Airspeed
KIAS - Indicated Airspeed [knots]
MAC - Mean Aerodynamic Chord
POH - Pilot’s Operating Handbook
RPM - Rotations per Minute
FIKI - Flight Into Known Icing
SLD - Supercooled Large Droplets
TCDS - Type Certificate Data Sheet

II. Type Certificate Holder Record
Zakład Lotniczy „PZL Mielec” Sp. z o.o.
Ul. Wojska Polskiego 3, 39-300 Mielec, POLAND

Polskie Zakłady Lotnicze Sp. z o.o.
Ul. Wojska Polskiego 3, 39-300 Mielec, POLAND

III. Change Record

<table>
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<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
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<tr>
<td>1</td>
<td>24 October 2005</td>
<td>Initial</td>
<td>01- 24 Oct 2005</td>
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<tr>
<td>2</td>
<td>21 April, 2006</td>
<td>Introduction of maritime patrol (designation PZL M2805-MPW) and Border Guard missions (designation PZL M28 05-SG) in Section3. Installation of ice protection system, approved on a non-hazard basis only. Flight in known or forecast icing conditions is prohibited</td>
<td>02- 21 Apr 2006</td>
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<td>3</td>
<td>21,December, 2006</td>
<td>Corrections to Vmo 335 to 355 km/hr on Pages 11 and 18 Correction to propeller designation from HC-BP5MP-3D/M10876ANSK to HC-B5MP-3D/M10876ANSK on pages 11 and 18.</td>
<td>03- 21,Dec 2006</td>
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<td>4</td>
<td>14 June 2013</td>
<td>Transition to new TCDS layout and editorial changes. Introduction of airplane operation in icing conditions for model PZL M28 05 and PZL M28 02-W</td>
<td>04-14, Jun 2013</td>
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<td>5</td>
<td>03 July 2013</td>
<td>Information on entry of earlier approved Major Change with respect to the service life extension of earlier approved Major Change with respect to the Approval No 10036658. Editorial changes and misprint corrections.</td>
<td>05-03 Jul 2013</td>
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<tr>
<td>6</td>
<td>07 April 2014</td>
<td>Introduction of elevator trim tabs new angular movements and editorial changes.</td>
<td>06-07 Apr 2014</td>
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<td>7</td>
<td>04 Dec 2014</td>
<td>Editorial changes and misprint corrections related to approved Major Change Approval No 1004755 with respect to the service life extension</td>
<td>07-04 Dec 2014</td>
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<td>03 Nov 2015</td>
<td>OSD FC and MMEL to include, editorial changes to list the SB related to the approved service life extension</td>
<td>08-03 Nov 2015</td>
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