**DEPARTMENT OF TRANSPORTATION**
**FEDERAL AVIATION ADMINISTRATION**

A56CE
Revision 1
Polskie Zakłady Lotnicze
Sp. z o.o., Mielec

PZL M28 05

March 16, 2007

# TYPE CERTIFICATE DATA SHEET No. A56CE

This data sheet, which is part of Type Certificate No. A56CE, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Polskie Zakłady Lotnicze Sp. z o.o.
Wojska Polskiego 3
39-300 Mielec
Poland

I. Model PZL M28 05, Twin-engine airplane, (Commuter Category), approved March 19, 2004

Engines: 2 (ea) Pratt & Whitney Canada, model PT6A-65B turboprops with a free turbine in reverse arrangement, reduction ratio of 0.0568:1.

Fuel: Aviation kerosene, type JET-A, JET A-1, JET A-2, and their equivalents as per P&WC Bulletin No. 13044:
JP-4, JP-5, JP-8,
F34, F35, F40, F43, F44,
AIR 3404, AIR 3405, AIR 3407
RT acc. to GOST 16564-71

Oil: Aero Shell Turbine Oil 500, Royco Turbine Oil 500, Mobil Jet Oil II, Stanffer Jet II, Castrol 5000, Exxon Turbo Oil 2380, Turbonycoil 525-2A, in accordance with P&WC Bulletin No. 13001

Engine Performance:

| | Shaft Horsepower SHP[1)] | Torque PSIG | Prop speed 1/rpm | Turbine Speed % | ITT °C |
|---|---|---|---|---|---|
| Takeoff | 1100* | 43.34 | 1700 | 104 | 820 |
| Max. Continuous | 1100** | 43.34 | 1700 | 104 | 810 |
| Max. Cruise | 1000*** | 43.34 | 1700 | 104 | 800 |

1) minimum operating power attainable in service
*attainable up to 50.5 °C ambient air temperature
** attainable up to 45.5 °C ambient air temperature
***attainable up to 42.5 °C ambient air temperature

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|---|---|---|---|---|---|---|---|---|---|
| Rev. No. | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |

Number of propellers 2

Propeller and Propeller Limits Hartzell Propeller Inc. (USA)
HC-B5MP-3D
Five-blade, all-metal, constant-speed with feathering and reverse
Propeller diameter: 2.820 m (9 ft. 3 in.)

| Airspeed Limits Airspeed | Indicated Airspeed | | Calibrated | |
|---|---|---|---|---|
| | IAS (km/h) | (KTS) | CAS (km/h) | (KTS) |
| Max. Operating (Limit) Speed, $V_{MO}$ | 355 | 192 | 345 | 186 |
| Design Maneuvering Speed, $V_A$ | 244 | 133 | 238 | 129 |
| Max. Flaps-Extended Speed, $V_{FE}$ | | | | |
| Flaps 15° | 215 | 116 | 210 | 113 |
| Flaps 40° | 200 | 108 | 190 | 103 |
| Max. Spoiler-Deployed Speed, $V_{NS}$ | 215 | 116 | 210 | 113 |
| Minimum Control Speed, $V_{MC}$ | 153 | 83 | 146 | 79 |

Load Factor Limits at Max. Allowable Weight of 7500 kg:

Flaps Up: Positive Nz =+3.0 Negative Nz = -1.0
Flaps Down: Positive Nz =+2.0 Negative Nz = 0.0

Center-of-Gravity Limits:

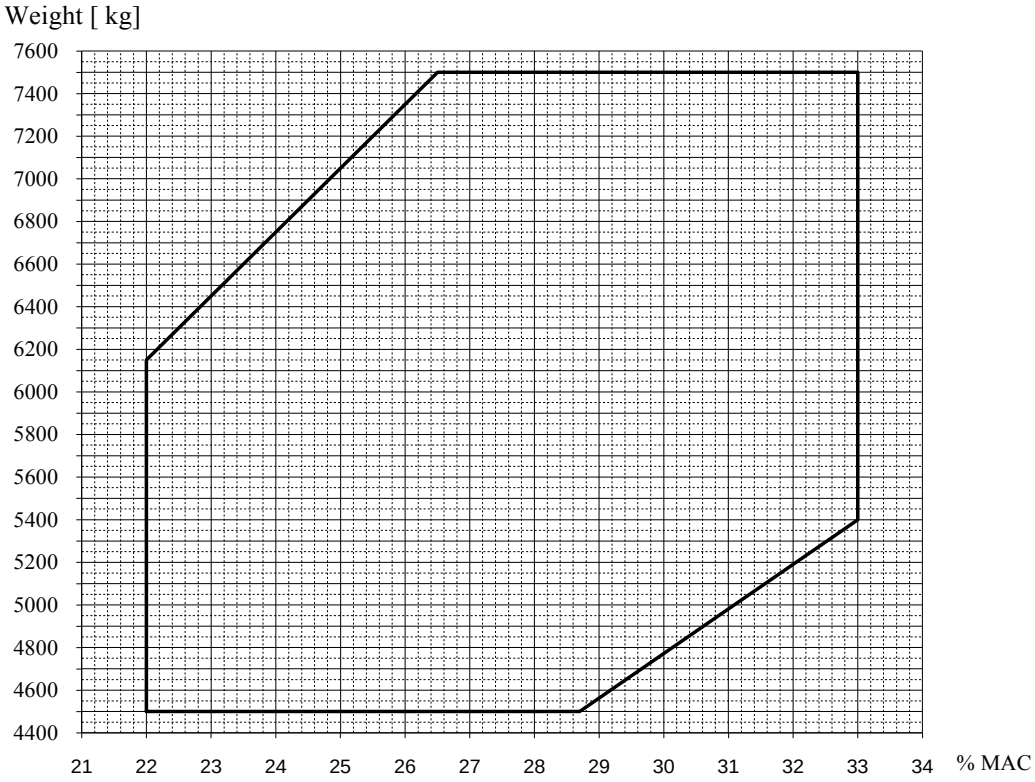
(a) Center of Gravity range:
Forward 22% MAC
Aft 33% MAC

(b) MAC Length: 1.886 m (74.25 in.)

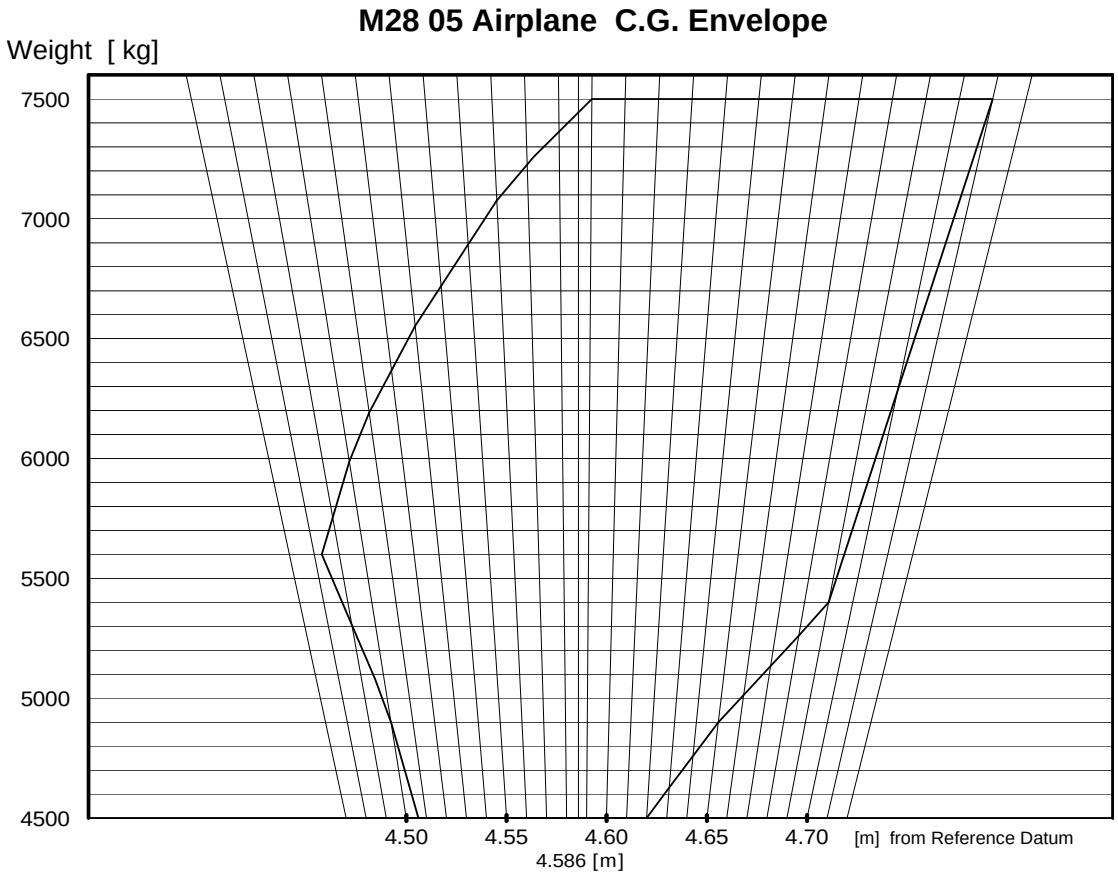
(c) Location of reference datum: 2.470 m (97.24 in.) Frame No. 9, Forward.

(d) The leading edge of the MAC is aft of the reference datum: 4.135 m (162.80 in.)

Center-of-Gravity Envelope:




Weights:



| | | |
|---|---|---|
| Max. Takeoff | 7500 kg | (16534 lbs.) |
| Max. Landing | 7500 kg | (16534 lbs.) |
| Max. Zero-Fuel | 6900 kg | (15212 lbs.) |
| Max. Payload | 2300 kg | (5070 lbs.) i.e.: |

- max. 2000 kg (4408 lbs.) in Cargo/Passenger Cabin (including max. 40 kg (88 lbs.) on Rack in Fuselage Rear Part)
- max. 300 kg (662 lbs.) in Underfuselage Pod (optional equipment)

| | | |
|---|---|---|
| Minimum Weight for Flight | 4700 kg | (10362 lbs.) |
| Cargo Loading Hoist Capacity Max. | 700 kg | (1540 lbs.) |

Leveling Means: See AFM section 6 for details.

Max. Passenger Seating Capacity: 19

Minimum Crew: 2 pilots

Fuel Tank Capacity:
- Wing tanks Max. 3894 lbs; 602 US gal. (1766 kg) (2278 L)
- Optional Aux. Fuselage Fuel Tank 3637 lbs; 552 US gal. (1650 kg) (2090L)

Unusable Fuel: 62 lbs.; 9.5 US gal. (28 kg) (36 L)

Usable Fuel: 3832 lbs.; 592.5 US gal. (1738 kg) (2242 L)

Oil Tank Capacity:
Maximum 2x 2.5 US gal. (2x9.45 L)

Approved Kinds of Operation:
- VFR flights, day and night,
- IFR flights, day and night

Prohibited Kinds of Operation:
- Flight into known or forecast icing is prohibited.

Landing Gear:
- Non-retractable, tricycle type.
- Main Gear: rocker-type with a single-chamber shock absorber,
- Nose Gear: rocker-type, with a two-chamber shock absorber,
- Nose Wheel rotation angle: $\pm 15^{o}$
- Nose Wheel castoring angle with steering OFF: $\pm 45^{o}$

Control Surface Movements:

| | | |
|---|---|---|
| Ailerons: | Up | $22^{o} \pm 1^{o}$ |
| | Down | $16^{o}\ 20' \pm 1^{o}$ |
| Aileron Trim Tab: | Up | $14^{o} \pm 1^{o}$ |
| | Down | $14^{o} \pm 1^{o}$ |
| Elevator: | Up | $27^{o} \pm 1^{o}$ |
| | Down | $19^{o} \pm 1^{o}$ |
| Elevator Trim Tab: (Elevator Neutral) | Up | $15^{o} \pm 1^{o}$ |
| | Down | $25^{o} \pm 1^{o}$ |
| Rudder LH: | Inboard | $16^{o} \pm 1^{o}$ |
| | Outboard | $22^{o} \pm 1^{o}$ |
| Rudder RH: | Inboard | $16^{o} \pm 1^{o}$ |
| | Outboard | $22^{o} \pm 1^{o}$ |
| Rudder Trim Tab: (Rudder Neutral) | Left | $15^{o} \pm 1^{o}$ |
| | Right | $15^{o} \pm 1^{o}$ |
| Wing Flaps: | Takeoff | $15^{o} \pm 1^{o}$ |
| | Landing | $40^{o} \pm 1^{o}$ |
| Spoilers: | Inboard | $45^{o} \pm 1^{o}$ |
| | Outboard | $60^{o} \pm 1^{o}$ |

Operating Ambient Temperature Range: $-85^{\circ}$ F to $+122^{\circ}$ F ($-50^{\circ}$ C to $+50^{\circ}$ C)

Standard Equipment: As defined in section 7 of the PZL M28 05 Airplane Flight Manual, Ref. No. M28/10/2002, Revision 6, dated February 11, 2004 or later revision.

Optional & Operational Equipment: As defined in section 9 of the PZL M28 05 Airplane Flight Manual, Ref. No. M28/10/2002, Revision 6, dated February 11, 2004 or later revision.

Operational Limitations:

Outside Air Temperature Limits: $-85^{\circ}$ F to $+122^{\circ}$ F ($-50^{\circ}$ C to $+50^{\circ}$ C)

Load Factor: SEE ABOVE

Maximum cruise altitude:

- for airplane in passenger version without oxygen ($O_2$) system 3,000 m (9,842 ft.)
- for airplane in cargo version without $O_2$ system within max. 30 min. 4,000 m (13,123 ft.)
- for airplane in cargo version with $O_2$ system 7,620 m (25,000 ft.)

Maximum airfield altitude: 4,000 m (13,123 ft.)

Service Life Limits: Airframe Service Life: 8000 flight hours.
Components: as listed in Chapter 4 of Maintenace Manual, Ref No. M28/11/2002, Revision 6 dated March 5, 2004, or later FAA approved revision.

| | |
|---|---|
| Serial Nos. Eligible | M28 05 with serial number AJE00302 and subsequent, are eligible for import into the United States. See Details under Import Requirements below. |
| Certification Basis | The regulations (unless otherwise stated) are Title 14 of the Code of Federal Regulations (14CFR):<br><br>14 CFR Part 23 dated February 1, 1965, as amended through Amendment 23-42 effective February 4, 1991 with the exception of<br>14 CFR Part 23 Sections 23.203, 23. 205, 23.207 and 23.1545, which are at Amendment 50;<br>14 CFR Part 23 Section 23.1309 is at Amendment 49;<br><br>14 CFR Part 34 dated September 10, 1990, as amended through Amendment 34-3 effective February 3, 1999;<br><br>14 CFR Part 36 dated December 1, 1969, as amended through amendment in effect on the date of issuance of the U.S. type certificate (currently Amendment 36-24 effective August 7, 2002).<br><br>Equivalent Safety Items:<br><br>Equivalent levels of safety finding made per the provision of 14 CFR Part 21.21(b)(1) for:<br><br>ELOS ACE-03-02: 14 CFR 23 § 23.1361(a). Master Switch Arrangement; Refer to FAA memorandum dated January 12, 2004.<br><br>Special Conditions: High Intensity Radiated Fields, (HIRF), Number 23-142-SC, dated December 18, 2003.<br><br>Date of Application for U.S. Type Certificate June 18, 1996.<br><br>The Civil Aviation Office (CAO) of Poland originally type certificated this aircraft under its type certificate Number BB-216. The FAA validated this product under U.S. Type Certificate Number A56CE. Effective October 24, 2005, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of Poland. The EASA TCDS number is EASA.A.058. |
| Validation Basis | The applicable airworthiness requirements for a U.S. certification under 14 CFR 21 section 21.29 identified above were established considering the airworthiness requirements applied by the responsible exporting Polish civil aviation authority under the Bilaterial Aviation Agreement (BAA) authorized by the Agreement between the Government of the Poland and the Government of the United States of America, including the Amendment to the Annex, dated February 9, 2004, that allows Commuter Category airplanes from Poland.<br><br>This Type Certificate was issued pursuant to the certification by the CAO that the PZL Model M28 05 complies with the above requirements.<br><br>The CAO issued Polish Type Certificate No. BB-216, dated April 18, 2002, as described in CAO TCDS No. BB-216 Revision 2, dated September 17, 2002. |
| Import Requirements | The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the Civil Aviation Office (CAO) of Poland on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to comply with U.S. airworthiness regulations 14 CFR Federal Aviation Regulations Part 23, U.S. Type Certificate No. A56CE and to be in a condition for safe operation.' |

**SEE NOTE 6** – for limitation for icing equipment.

Model PZL M28 05 airplane without any other letter associated on the model designation and with serial numbers AJE00302 and subsequent are eligible for a U.S. Standard Airworthiness Certificate.

Note: For example, if an airplane is model number M28 05 W, it is not eligible for the U.S. Standard Airworthiness Certificate.

Note: M28 05 airplanes with the following serial numbers are not eligible for U.S. Standard Airworthiness Certificate:
AJE001-XY (where XY equals 01 through 99);
AJE002-XY (where XY equals 01 through 99);
or AJE00-301

Note: The Serial number system of the M28 05 is as follows:
AJEUWXYZ
where the AJE is the article code of M28; the UWX is the series number or production batch number (FIRST three digits) eg 003, 004 999, where 999 is highest possible number of production batch; the YZ is the number of an airplane in series (last two digits) eg 01,02 .14 .99, where 99 is a highest possible number of an airplane in one production batch.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification. Such equipment is listed in the current FAA approved Airplane Flight Manual, Revision 6, dated February 11, 2004, or later approved revisions.

Service Information

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before October 24, 2005 – by the Civil Aviation Office (CAO) of Poland.

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

The FAA accepts such documents and considers them FAA-approved for type design data only unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals; or

- The documents make an acoustical or emissions changes to this product's U.S. type certificate as defined in 14 CFR § 21.93.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on case-by-case to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

**Each airplane is provided with the following approved documents:**

a) PZL M28 05 Airplane Flight Manual, Ref. No.: M28/10/2002, Revision 6, dated February 11, 2004 or later FAA approved revision.

b) PZL M28 Maintenance Manual, Ref. No.: M28/11/2002, Rev. 6, dated March 5, 2004, or later FAA approved revision, including Chap. 4: "Airworthiness Limitations" and Chap. 5: "Time Limits/ Maintenance Check".

c) PZL M28 Repair Manual, Ref. No.: M28/1/2001, Rev. 2, dated October 10, 2003 or later CAO approved revisions.

NOTES:

NOTE 1. Current weight and balance data including list of equipment included in the certificated empty weight and loading instructions, when necessary, must be provided for each airplane at the time of original certification, and remain with the airplane at all times thereafter. The certificated empty weight and corresponding center of gravity locations must include the following:

Unusable fuel of 36 L (28 kg) {62 lbs.; 9.5 US gal}

NOTE 2. Airplane operation must be in accordance with the CAO approved Airplane Flight Manual listed above. All placards listed in Section 2 must be displayed in clear view of the pilot.

NOTE 3. Airworthiness Limitations are specified in the Section 2 LIMITATIONS chapter of the Flight Manual and Chapter 4 of the Instructions for Continued Airworthiness (Maintenance Manual) and are approved by EASA and the FAA. These LIMITATIONS specify mandatory replacement times, and operating limitations, and may not be changed without FAA approval.

Revisions to the Airworthiness Limitations must be approved by the FAA. The inspections, maintenance, repair and painting must be accomplished according to the Maintenance Manual or other procedures acceptable to the FAA.

NOTE 4. Information essential for the proper operation, maintenance and inspection of the airplane is contained in the Model PZL M28 05 Flight Manual and Maintenance Manual.

NOTE 5. All avionics installed in this aircraft must meet the applicable FAA Technical Standard Order (TSO) and/or equivalent FAA approved safety requirements.

NOTE 6. The type design change of installation of the ice protection system, approved on non-hazard basis only as shown on EASA TCDS no EASA.A.058 Issue 02, dated April 21, 2006, and PZL M28 05 AFM revision 12, dated February 28, 2006 cannot be accepted on any imported airplanes into the USA at this time. This type design change will require a validation with EASA in accordance with FAA Order 8110.52 and 14 CFR part 21.29 when the type certificate holder applies for this type design change for the US type certificate.

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