

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

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| A76EU Revision 5 ZLIN AIRCRAFT a.s. Z-242L Z-143L January 28, 2011 |
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TYPE CERTIFICATE DATA SHEET No. A76EU

This data sheet which is part of Type Certificate No. A76EU 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. ZLIN AIRCRAFT a.s.
 Letiště 1578
 765 02 Otrokovice
 Czech Republic

Type Certificate Holder record MORAVAN a.s. transferred TC A76EU to ZLIN AIRCRAFT a.s. on January 28, 2011.

I. Model Z-242L (Acrobatic, Utility, and Normal Category) approved April 8, 1994.

Differences. This model is not convertible to other listed models.

Engine. 1 TEXTRON Lycoming AEIO-360-A1B6 with fuel injection
 Rotating as viewed from the rear - CW (TCDS No. 1E10)

Fuel. Aviation gasoline octane grade minimum 100/130 (green) or 115/145
 (violet) .100 L . 100 LL.

Engine Limits. Maximum takeoff and continuous 2700 RPM and full Manifold Pressure (200 HP).

Propeller and Propeller Limits.

- MTV-9-B-C/C188-18a (TCDS No. P-24NE) with Woodward D-210 982 governor.
 Three blade, hydromatic, constant speed.
 Pitch setting: Low 10° ± 0.2°
 (26.2 in. station) High 27° ± 1°
 Diameter: 74.02 in. (no reduction permitted)
- Optional:
 Hartzell HC-C3YR-4BF/FC 6890 (TCDS No. P25EA) with Woodward D-210 982 governor.
 Three blade hydromatic, constant speed.
 Pitch setting: Low 10.5°
 (30 in. station) High 30.0°
 Diameter: 70.0 in (no reduction permitted)

Airspeed Limits.

| | |
|-----------------|--|
| V _{NE} | 170 knots (CAS) |
| V _{NO} | 135 knots (CAS) |
| V _A | 141 knots (CAS) for Acrobatic 132 knots (CAS) for Utility 119 knots (CAS) for Normal |
| V _{FE} | 100 knots (CAS) |

Center of Gravity (C.G.) Range. 19% - 26% MAC

| <u>A</u> | | <u>U</u> | | <u>N</u> | |
|----------|----------|----------|----------|----------|----------|
| wt-lbs | c.g.-in. | wt-lbs | c.g.-in. | wt-lbs | c.g.-in. |
| 1810 | 25.7 | 1810 | 25.7 | 1810 | 25.7 |
| 1984 | 25.7 | 1984 | 25.7 | 1984 | 25.7 |
| 2140 | 26.4 | 2250 | 26.9 | 2400 | 27.5 |

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|--|------|------|------|------|------|------|
| <u>Center of Gravity (C.G.) Range (cont)</u> | 2140 | 29.0 | 2250 | 29.0 | 2400 | 29.9 |
| | 1810 | 27.5 | 2140 | 29.0 | 2205 | 29.9 |
| | | | 1810 | 27.5 | 1810 | 28.1 |

Straight line variation between points.

I. Model Z-242 L (Acrobatic, Utility, and Normal Category) (cont'd)

Empty Weight C.G. Range. None

Maximum Weights.

| Category | Max. take-off | | Max. landing | |
|---------------|---------------|------|--------------|------|
| | kg | lb | kg | lb |
| Acrobatic (A) | 970 | 2140 | 970 | 2140 |
| Utility (U) | 1020 | 2250 | 1020 | 2250 |
| Normal (N) | 1090 | 2400 | 1050 | 2315 |

Minimum Crew.

One (1) Pilot (Left Seat).

Number of Seats.

2 (includes crew) at 33.7 in. to 37.64 in.

Maximum Baggage.

45 lb (20 kg) at 69.5 in.

Fuel Capacity.

| | Units | Acrobatic Utility | Normal |
|-----------------------------------|--------------|----------------------|----------|
| Main tanks Left and Right | litres | 2 x 60 | 2 x 60 |
| | U.S. gallons | 2 x 16 | 2 x 16 |
| | lbs | 2 x 96.1 | 2 x 96.1 |
| Auxiliary tanks Left and Right | litres | - | 2 x 55 |
| | U.S. gallons | - | 2 x 14.5 |
| | lbs | - | 2 x 87.1 |
| Total fuel quantity | litres | 120 | 230 |
| | U.S. gallons | 32 | 61 |
| | lbs | 192.3 | 366.5 |
| Unusable fuel quantity | litres | 3 | 5 |
| | U.S. gallons | 0.8 | 1.3 |
| | lbs. | 4.8 | 7.8 |
| Usable fuel quantity | litres | 117 | 225 |
| | U.S. gallons | 31.2 | 59.7 |
| | lbs. | 187.5 | 358.7 |

Unusable Fuel quantity, weight, and C.G. position (arm from the datum)

- acrobatic/utility - .8 U.S. gals (4.8 lb, arm 31.1 in)

- normal - 1.3 U.S. gals (7.8 lb, arm 34.3 in)

(See NOTE 1 for data on weight and balance).

Oil Capacity.

| | Quarts | Litres | Lbs | c.g. Arm in. |
|------------------------------------|--------|--------|------|--------------|
| <u>Normal and Utility Category</u> | | | | |
| Max. quantity | 8 | 7.6 | 15.0 | -17.0 |
| Min. quantity | 4 | 3.8 | 7.5 | -17.0 |
| <u>Acrobatic Category</u> | | | | |
| Max. quantity (recommended) | 6 | 5.7 | 11.2 | -17.0 |
| Min. quantity | 5 | 4.7 | 9.35 | -17.0 |

(See NOTE 1 for data on weight and balance).

I. Model Z-242 L (Acrobatic, Utility, and Normal Category) (cont'd)

| <u>Control Surface Movements.</u> | | (Measured from hinge/swivel point) | |
|-----------------------------------|-----------|------------------------------------|--|
| Ailerons | Up | 21° ± 1° | |
| | Down | 17° ± 1° | |
| Elevator | Up | 34° + 0°, -1° | |
| | Down | 31° + 1° -0° | |
| Elev. Trim Tab | Up | 15° ± 1° | |
| | Down | 35° ± 2° | |
| Elev. Balance Tab | Up | 22° ± 2° | |
| | Down | 23° ± 2° | |
| Rudder | Left | 30° ± 2° | |
| | Right | 30° ± 2° | |
| Flaps | Retracted | 0° | |
| | Take-off | 14° ± 1° | |
| | Landing | 37° ± 1° | |
| Nose Wheel Travel | Left | 15° | |
| | Right | 15° | |

II. Model Z-143L (Utility, Normal Category), approved September 20, 1996.

| | | | | |
|--|--|-----------------------------------|-----------|----------|
| <u>Differences.</u> | This model is not convertible to other listed models. | | | |
| <u>Engine.</u> | 1 TEXTRON Lycoming 0-540-J3A5 with carburetor. Rotating as viewed from the rear - CW. (TCDS No. E-295). | | | |
| <u>Fuel.</u> | Aviation gasoline oct. grade min. 100/130. 100, 100LL. | | | |
| <u>Engine Limits.</u> | Maximum takeoff and continuous 2400 RPM and full Manifold Pressure (235 HP). | | | |
| <u>Propeller and Propeller Limits.</u> | MTV-9B/195-45a (TCDS No. P-24NE) with Woodward B 210 761 governor. Three blade, hydromatic, constant speed. | | | |
| | Pitch setting: | Low | 14° ± .5° | |
| | (26.2 in. station) | High | 30° ± 1° | |
| | Diameter: | 76.8 in. (no reduction permitted) | | |
| <u>Airspeed Limits.</u> | V _{NE} | 170 knots (CAS) | | |
| | V _{NO} | 143 knots (CAS) | | |
| | V _A | 124 knots (CAS) for Utility | | |
| | | 130 knots (CAS) for Normal | | |
| | V _{FE} | 105 knots (CAS) | | |
| <u>Center of Gravity (C.G.) Range.</u> | 21% - 34% MAC. | | | |
| | <u>U</u> | | <u>N</u> | |
| | wt-lbs | c.g. -in | wt-lbs | c.g. -in |
| | 1962 | 27.3 | 1962 | 27.3 |
| | 2250 | 27.3 | 2250 | 27.3 |
| | 2380 | 27.9 | 2380 | 27.9 |
| | 2380 | 29.0 | 2600 | 29.0 |
| | 2293 | 29.0 | 2976 | 33.7 |
| | 1962 | 27.5 | 2976 | 34.9 |
| | | | 2293 | 34.9 |
| | | | 2205 | 33.7 |
| | | | 1962 | 29.9 |
| | Straight line variation between points. | | | |
| <u>Empty Weight C.G. Range.</u> | None. | | | |

II. Model Z-143L (cont'd)

Maximum Weights.

| Category | Take-off | | Landing | |
|-------------|----------|------|---------|------|
| | kg | lb | kg | lb |
| Utility (U) | 1080 | 2380 | 1080 | 2380 |
| Normal (N) | 1350 | 2976 | 1280 | 2822 |

Minimum Crew.

One (1) Pilot (Left seat).

Number of Seats.

4 (includes crew)
 2 at 36.1 in. to 39.65 in.
 2 at 70.2 in.

Maximum Baggage.

132 lb (60 kg) at 89.2 in.

Fuel Capacity.

| | Units | Utility | Normal |
|-------------------------------|----------|-----------|-----------|
| Main Tanks Left/Right | litres | 61/61 | 61/61 |
| | U.S. gal | 16.1/16.1 | 16.1/16.1 |
| | lbs | 96.7/96.7 | 96.7/96.7 |
| Auxiliary Tanks Left/Right | litres | - | 51/51 |
| | U.S. gal | - | 13.4/13.4 |
| | lbs | - | 80.5/80.5 |
| Total fuel quantity | litres | 122 | 224 |
| | U.S. gal | 32.2 | 59 |
| | lbs | 193.5 | 354.5 |
| Unusable fuel quantity | litres | 6 | 8 |
| | U.S. gal | 1.6 | 2 |
| | lbs | 9.6 | 12.0 |
| Usable fuel quantity | litres | 116 | 216 |
| | U.S. gal | 30.6 | 57 |
| | lbs | 183.8 | 342.5 |

Unusable fuel quantity, weight, and C.G. position (arm from datum):

- utility - 1.6 U.S. gals (9.6 lb, arm 31.1 in)
 - normal - 2 U.S. gals. (12.0 lb, arm 34.3 in)

(See NOTE 1 for data on weight and balance)

Oil Capacity.

| | Quarts | Litres | Lbs | c.g. Arm in. |
|-------------------------|--------|--------|------|--------------|
| <u>Normal Category</u> | | | | |
| Maximum quantity | 12 | 11.4 | 22.4 | -18.35 |
| Minimum quantity | 5 | 4.7 | 9.35 | -18.35 |
| <u>Utility Category</u> | | | | |
| Maximum quantity | 8 | 7.6 | 15.0 | -18.35 |
| Minimum quantity | 6 | 5.7 | 11.2 | -18.35 |

(See NOTE 1 for data on weight and balance).

II. Model Z-143L (cont'd)

| | | |
|--|-------------------------------------|----------|
| <u>Control Surface Movements.</u> | (measured from hinge/swivel point). | |
| Ailerons | Up | 21° ± 1° |
| | Down | 17° ± 1° |
| Elevator | Up | 30° ± 1° |
| | Down | 27° ± 1° |
| Rudder | Left | 30° ± 2° |
| | Right | 30° ± 2° |
| Flaps | Retracted | 0° |
| | Take-off | 14° ± 1° |
| | Landing | 37° ± 1° |
| Nose Wheel | Left | 15° |
| Travel | Right | 15° |

DATA PERTINENT TO ALL MODELS.

Datum. The aft Plane of Firewall.

Leveling Means. Jacking instructions, nominal distances of leveling points from datum, distance of leveling points and rudder and elevator deflection are stated in Z 242 L Aircraft Leveling and Rigging Report-MP-L 242.012: of the Maintenance Manual Vol. II, or in Z 143L Report MP-L143.012: of the Maintenance Manual Vol. II.

Serial Numbers Eligible. Each individual aircraft manufactured under this type certificate must be accompanied by an Export Certificate of Airworthiness as noted below under "Import Requirements" when an application for a U.S. airworthiness certificate is made.

Model Z 242 L: 0671 and up, 0651 to 0670 on condition that Mandatory Bulletins No. Z 242L/7a REV.1 and No. Z 242L/10a are accomplished.
 Model Z 143L: 0004, 0007, 0008, 0010, 0011, 0012, 0014 on condition that Mandatory Bulletin No. Z 143L/9a is accomplished. 0015 and up.

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 Authority of the Czech Republic (CAA-CZ) 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. A76EU and to be in a condition for safe operation.'

Country other than Manufacturer (Exporting country Bilateral Agreement must have reciprocal certification authorization with both the country of manufacture and the U.S. and the original Export Certificate of Airworthiness issued by the country of manufacture must exist):

A U.S. standard airworthiness certificate may be issued on the basis of a certifying statement signed by an authorized representative of the Civil Aviation Authority of the exporting country. It is incumbent upon the exporting civil aviation authority to determine that the certifying statement includes evidence of acceptable service history and modification deviations and the following statement:
 "The aircraft covered by this certificate has been examined, tested, inspected in accordance with the provisions of FAR 21.183(d) or its equivalent, and found to conform to the type design approved under Type Certificate A76EU and to be in a condition for safe operation."

Certification Basis.

1. Model Z-242 L: (TC Application Date: September 4, 1991)
 FAR 23 effective February 1, 1965, as amended through Amendment 23-36 effective September 15, 1988; FAR 36 effective December 1, 1969, as amended through Amendment 36-20 effective September 16, 1992.

2. Model Z-143L: (TC Application Date: September 4, 1991)
 FAR 23 effective February 1, 1965, as amended through Amendment 23-41 effective November 26, 1990; FAR 36 effective December 1, 1969, as amended through Amendment 36-20 effective September 16, 1992.

3. TC A76EU issued April 8, 1994
 Revision 1: March 6, 1996

Revision 2: September 30, 1996

The Civil Aviation Authority of the Czech Republic (CAA-CZ) originally type certificated these aircraft models under its type certificate Numbers CZ 92-03 (Z242L) and CZ 94-08 (Z143L). The FAA validated this product under U.S. Type Certificate Number A76EU. Effective February 1, 2005 the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Czech Republic. The EASA TCDS numbers are EASA.A.027 (Z242L) and EASA.A.028 (Z143L).

Validation Basis.

Type Certificate A76EU was issued pursuant to FAR 21.29 in validation of the Civil Aviation Inspectorate (CAI) certification of compliance with aforementioned certification basis, and in accordance with the standard airworthiness certificate provisions of FAR 21.183(c).

NOTE: The airworthiness provisions of FAR 21.183(d) may be cited as the basis for issuance of standard airworthiness certificates for aircraft imported from a country other than the country of manufacture provided reciprocal authorization is included in the Bilateral Agreements between the country of manufacture, the exporting country and the United States.

Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for airworthiness certification. In addition, the following items of equipment are required.

Model Z 242 L:

1. CAI approved Airplane Flight Manual, Revision 1
Moravan Document No. 003.012 dated April 6, 1994 or later CAI approved revision.
2. CAI approved Airplane Flight Manual, Supplement No. 3,
Document No. 003.012 dated February 12, 1996, or later CAI approved revision, when optional Hartzell HC-C3YR-4BF/FC 6890 propeller installed.

Model Z 143L:

1. CAI approved Airplane Flight Manual
Moravan Document No. 005.012.US dated September 6, 1996, or later CAI approved revision.

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 February 1, 2005 – by the Civil Aviation Authority of the Czech Republic (CAA-CZ).

- 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.

NOTES:

- NOTE 1. A current weight and balance report including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original airworthiness certification, and at all times thereafter.
- Model Z 242 L:
The certificated empty weight and the corresponding center of gravity location must include full oil (15 lbs. at -17 inches) for (N) and (11.2 lbs at -17 inches) for (A), and unusable fuel (4.8 lbs. at 31.1 inches) for (A) and (U), (7.8 lbs at 34.3 inches) for (N).
- Model Z 143L:
The certificated empty weight and the corresponding center of gravity location must include full oil (22.4 lbs. at -18.35 inches) for (N), and (15 lbs. at -18.35 inches) for (U), and unusable fuel (9.6 lbs. at 31.1 inches) for (U) and (12 lbs. at 34.3 inches) for (N).
- NOTE 2. Placards (Refer to Manufacturer's Specifications for a complete listing): All required placards as listed in the approved Airplane Flight Manual must be installed in the appropriate locations.
- Model Z 242 L:
(1) The following placard must be displayed in clear view of the pilot: "THE MARKINGS AND PLACARDS INSTALLED IN THIS AIRPLANE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THE ACROBATIC CATEGORY. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THIS CATEGORY OR IN THE UTILITY AND NORMAL CATEGORY ARE CONTAINED IN THE AIRPLANE FLIGHT MANUAL."
- Model Z 143L:
The following placard must be displayed in clear view of the pilot: "THE MARKINGS AND PLACARDS INSTALLED IN THIS AIRPLANE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THE UTILITY CATEGORY. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THIS CATEGORY OR IN THE NORMAL CATEGORY ARE CONTAINED IN THE AIRPLANE FLIGHT MANUAL."
- (2) Refer to the Airplane Flight Manual, Section 2, Limitations for a listing of other required placards.
- NOTE 3. Model Z 242 L:
Instructions for Continued Airworthiness and Service Life Limits of components include the Maintenance Manual Volume I, and are contained in Chapter 9, Document Number 003.022 Revision 1, dated April 6, 1994. Revisions to Airworthiness Limitations must be CAI approved for the FAA.
- Model Z 143L:
Instructions for Continued Airworthiness and Service Life Limits of components include the Maintenance Manual Volume I, and are contained in Chapter 8, Moravan Document Number 005.022 Revision 3, dated January 18, 1996. Revisions to Airworthiness Limitations must be CAI approved for the FAA.
- All service bulletins classified as Mandatory by the Civil Aviation Inspectorate are identified to that effect and are subject to an Airworthiness Directive issued by the FAA.

.END.