

*European Aviation Safety Agency*

# EASA

# TYPE-CERTIFICATE DATA SHEET

# EASA.A.027

## Z 42 - Series

**Type Certificate Holder:**

**Moravan Aviation s.r.o.**

Letiště 1578

765 81 Otrokovice

CZECH REPUBLIC

**Manufacturer:****Moravan Aviation s.r.o.**

Letiště 1578

765 81 Otrokovice

CZECH REPUBLIC

For Type:      Z 42, and

Variants: Z 42 M, Z 42 MU, Z 142, Z 142 C, Z 242 L

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**CHANGE RECORD**



## **SECTION A1: GENERAL, Z 42 Type Design**

### **A1. General**

1. a) Type: Z 42  
b) Variant: ---
2. Airworthiness category: Aerobatic (A) (see Note 2)  
Utility (U) (see Note 2)  
Normal (N) (see Note 2)
3. Type Certificate Holder: Moravan Aviation s.r.o.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: Moravan, n.p.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0001-0010; 0015-0026; 0028-0047
5. Certification Application Date: ---
6. CAA Cz Type Certificate Date: September 07, 1970
7. EASA Type Certificate Date: 22-Mar-2007 (reissue, EASA)

The EASA Type Certificate replaces the CAA Cz Type Certificate No. 70 – 05.

### **AII. Certification Basis**

1. Reference Date for determining the applicable requirements: ---
2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt 23-6 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exemptions: None
8. EASA Equivalent Safety Findings: § 23.177(a)(2) – Good controllability around longitudinal axis of the aircraft.  
§ 23.613(c); § 23.615 – Used materials and results of calculation are sufficiently satisfactory (they are in compliance with ČSN and specifications effective for aeronautical industry).



§ 23.955 – The fuel flow is closed with battery stopcock and is higher by 50 % than the consumption at start.

§ 23.991(b) – Failure of low-pressure fuel pump is extremely improbable.

§ 23.1013(e); § 23.1019 – The screen area at oil tank outlet is several times larger than the outlet pipe union section.

§ 23.1183(–) - The hoses materials safety is proved by operation experience.

§ 23.1323 – Aerodynamical repair is on safe side; the speed reached at the cruising power of engine is lower than the speed at which already occurs undesirable distortion.

9. EASA Environmental Standards: ICAO Annex 16/I, Chapter 6

### **AIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: The specification list of Aircraft Z 42 No. S-Z 42.0000.
2. Description: The Z 42 aircraft is two-seat, low wing, single-engine, cantilever monoplane.
3. Equipment: Approved equipment list is stated in document Technický popis a návod k obsluze letounu Z 42, kap. 5”.
4. Dimensions:

Span:	9.11 m
Length:	7.07 m
Height:	2.69 m
Wing Area:	13.15 m <sup>2</sup>
5. Engine:
  - 5.1 Model: M – 137 A
  - 5.2 Type Certificate: EASA approved (CAA Cz TC No. 69-01) (see Note 3)
  - 5.3 Limitations:

Max. Take-off power (5 min.)	
max. Power	133 kW (180 HP)
max. Engine speed	2 750 RPM
max. Consumption	61 l/h
max. Manifold pressure	100 ± 2 kPa
Max. Continuous power	
max. Power	118 kW (160 HP)
max. Engine speed	2 680 RPM
max. Consumption	52 l/h
max. Manifold pressure	95 ± 2 kPa
Max. Cruising power	
max. Power	103 kW (140 HP)
max. Engine speed	2 580 RPM
max. Consumption	43 l/h
max. Manifold pressure	87 kPa



6. Load factors:
- |            |                |
|------------|----------------|
| Category A | +6.0 g, -3.5 g |
| Category U | +4.4 g, -2.5 g |
| Category N | +3.8 g, -1.5 g |
7. Propellers:
- 7.1.1 Model: Z – 42.6411
- 7.1.2 Type Certificate: EASA approved (CAA Cz TC No. 70-06) (see Note 4)
- 7.1.3 Number of blades: 2
- 7.1.4 Diameter: 2 050 mm
- 7.1.5 Sense of Rotation: Anticlockwise in flight direction
- or
- 7.2.1 Model: Z – 42.6413 (towing)
- 7.2.2 Type Certificate: EASA approved (CAA Cz TC No. 70-07) (see Note 5)
- 7.2.3 Number of blades: 2
- 7.2.4 Diameter: 2 050 mm
- 7.2.5 Sense of Rotation: Anticlockwise in flight direction
8. Fluids:
- 8.1 Fuel:
- Non-ethylated aviation gasoline with min. 72 octanes. Application of ethylated fuels is only permitted in case that the T.E.L. content does not exceed the value of 0.06% vol.
- LBZ 72
- LBZ 78
- LBE 80
- LBE 87
- Shell 80
- ESSO 80
- AVGAS 100 LL
- (DEFENCE STANDARD 91/90, ASTM D910)
- 8.2 Oil:
- Mineral oils are recommended for engine operation with min. kinematic viscosity of 20 cSt at 100°C, whose percentual carbon residue does not exceed the value of 0.4.
- MS 20
- Aeroshell W100
- Aeroshell W120 (in tropical climates)
- 8.3 Coolant: None



9. Fluid capacities:

9.1 Fuel:	Total:	130 litres
	Usable:	127 litres
	2 x 65 litres in main tanks	

9.2 Oil:	Minimum 7 liters - Maximum 12 liters
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9.3 Coolant system capacity:	None
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10. Air Speeds:

Never Exceed Speed Limit	$V_{NE}$	315 km/h CAS
Normal Operating Speed	$V_{NO}$	226 km/h CAS
Design Manoeuvring Speed Limit	$V_A$	
Category A		260 km/h CAS
Category U		230 km/h CAS
Category N		227 km/h CAS
Maximum Flaps Extended Speed Limit	$V_{FE}$	185 km/h CAS

11. Maximum Operating Altitude:	Category A	5 000 m
	Category U	4 350 m
	Category N	4 050 m

12. All-weather Operations Capability:	The aircraft is approved for VFR Day flights.
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13. Maximum Weights:	Max. Take-off and Landing weight:	
	Category A	840 kg
	Category U	920 kg
	Category N	970 kg
	Max. Variable Load:	
	Category A, U, N	200 kg

14. Centre of Gravity Range:	21,8 % – 26,5 % MAC
	M.A.C. is 1 460 mm; 0 % M.A.C. is 300 mm aft reference datum.

15. Datum:	The rear part of firewall; from it are measured, for purpose of assignation of Gravity Centre, all lateral dimensions.
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16. Control Surface Deflections:	Elevator deflection	up	$30^\circ \pm 1^\circ$
		down	$27^\circ + 1^\circ$
	Rudder deflection	right and left	$30^\circ \pm 2^\circ$
	Ailerons deflection	up	$21^\circ \pm 1^\circ$
		down	$17^\circ \pm 1^\circ$
	Wing flaps positions	retracted	$0^\circ$
		take-off	$14^\circ \pm 1^\circ$
		landing	$37^\circ \pm 1^\circ$

17. Levelling Means:	Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.
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- |   |  |
|---|--|
| 18. Minimum Flight Crew:                | 1 (Pilot)  |
| 19. Maximum Passenger Seating Capacity: | 2 (including crew)   |
| 20. (Reserved)                          |  |
| 21. Baggage/Cargo Compartments:         | Max. 20 kg.  |
| 22. Wheels and Tyres:                   | Wheels of main gear K 22-0100-7 with tyre Barum 420 x 150 model, or<br>Wheels of main gear K 22-3100-7 with tyre Goodyear 6.00-6.5, P/N 607C41-1.<br><br>Wheel of nose gear K 23-0000-7 with tyre Barum 350 x 135, or<br>Wheel of nose gear K 51-1100-7 with tyre Goodyear 5.00-5, P/N 505C61-8. |



#### AIV. Operating and Service Instructions

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|--|--|
| 1. Flight Manual:                                |  |
| – In Czech language                              | Letová příručka letounu Z 42, date of issue 1971   |
| 2. Technical Manual:                             |  |
| – In Czech language                              | Technický popis a návod k obsluze letounu ZLIN 42, date of issue 1971                      |
| 3. Repair Manual:                                |  |
| – In Czech language                              | Oprávérenská příručka letounů Z 42, Z 42 M, Z 42 MU, date of issue 1978                    |
| 4. Catalogue of Spare Parts:                     |  |
| – In Russian, Czech, German and English language | Katalog ZLIN 42, date of issue 1971  |
| 5. Table of Dimensions, Limits and Clearances:   |  |
| – In Czech, German and English language          | Album rozměrů, tolerancí a vůlí Z 42, Z 42 M, Z 43, date of issue 1976                     |
|  | Album der Abmessungen, der Toleranz und Spielangaben Z 42, Z 42 M, Z 43 date of issue 1976 |
|  | Table of Dimensions, Limits and Clearances Z 42, Z 42 M, Z 43, date of issue 1976          |



**AV. Notes**

- Note 1:       The Z 42 aircraft have been converted by the aircraft manufacturer to the models:  
              Z 42 M           S/N: 0006  
              Z 42 MU        S/N: 0003-0004; 0007-0008; 0010; 0015; 0017-0026; 0028-0045; 0047
- Note 2:       For operation of the airplane in other than the Normal Category, compliance with the applicable parts of Mandatory Service Bulletins Z42/55a and Z42/56a or later revision of each is required.
- Note 3:       The EASA type certification standard includes that of CAA Cz TCDS No. 69-01 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 4:       The EASA type certification standard includes that of CAA Cz TCDS No. 70-06 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 5:       The EASA type certification standard includes that of CAA Cz TCDS No. 70-07 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

**SECTION A2:       **Reserved****



## **SECTION B1: GENERAL Z 42 M Type Design**

### **B1. General**

1. a) Type: Z 42  
b) Variant: Z 42 M
2. Airworthiness category: Aerobatic (A) (see Note 2)  
Utility (U) (see Note 2)  
Normal (N) (see Note 2)
3. Type Certificate Holder: Moravan Aviation s.r.o.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: Moravan, n.p.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0048; 0060-0190
5. Certification Application Date: ---
6. CAA Cz Type Certificate Date: October 30, 1973
7. EASA Type Certificate Date: 21-Mar-2007 (reissue, EASA)

The EASA Type Certificate replaces the CAA Cz Type Certificate No. 73-06.

### **BII. Certification Basis**

1. Reference Date for determining the applicable requirements: ---
2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt 23-13 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exemptions: None
8. EASA Equivalent Safety Findings: § 23.33 – In the Flight manual is a notice – limitation of revolutions of the propeller is met in normal category at maximal flight weight up to a height of 600 m MSA.  
§ 23.177(a)(2) – Sufficient controllability in critical regimes of flight.



§ 23.613(c); § 23.615 – Used materials and calculation results are convenient.

§ 23.955 – The fuel flow is higher than the consumption at take-off regime.

§ 23.991(b) – The engine is equipped with a high-pressure pump connected with a low-pressure pump to one aggregate, the low-pressure pump breakdown is extremely improbable.

§ 23.1013(e); § 23.1019 – The screen area at oil tank outlet is several times larger than the outlet pipe union section.

§ 23.1183(–) - The hoses material safety is verified by experiences from operation.

§ 23.1323 – At the speeds over 200 km/h, there is made a correction on the safe side.

§ 23.1389(b); §23.1391; §23.1393; §23.1395; §23.1397; § 23.1401 – Landing lights, anti-collision lights are convenient with respect to the night flights exclusiveness.

9. EASA Environmental Standards: ICAO Annex 16/I, Chapter 6

### **BIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: The specification list of Aircraft Z 42 M No. S-M 42.0000.
2. Description: The Z 42 M aircraft is two-seat, low wing, single-engine, and cantilever monoplane.
3. Equipment: Approved equipment list is stated in document Technical manual of the Zlin Z 42M Aircraft, Chapter 4.
4. Dimensions:

Span:	9.11 m
Length:	7.07 m
Height:	2.69 m
Wing Area:	13.15 m <sup>2</sup>
5. Engine:
  - 5.1. Model: M – 137 AZ
  - 5.2. Type Certificate: EASA approved (CAA Cz TC No. 69-01) (see Note 3)
  - 5.3 Limitations:

Max. Take-off power (5 min.)	
max. Power	133 kW (180 HP)
max. Engine speed	2 750 RPM
max. Consumption	61 l/h
max. Manifold pressure	100 ± 2 kPa
Max. Continuous power	
max. Power	118 kW (160 HP)
max. Engine speed	2 680 RPM
max. Consumption	52 l/h
max. Manifold pressure	95 ± 2 kPa



	Max. Cruising power	
	max. Power	103 kW (140 HP)
	max. Engine speed	2 580 RPM
	max. Consumption	43 l/h
	max. Manifold pressure	87 kPa
6. Load factors:	Category A	+6.0 g, -3.5 g
	Category U	+5.0 g, -3.2 g
	Category N	+3.8 g, -1.5 g
7. Propeller:		
7.1 Model:	V 503 A	
7.2 Type Certificate:	EASA approved (CAA Cz TC No. 69-02) (see Note 4)	
7.3 Number of blades:	2	
7.4 Diameter:	2 000 mm	
7.5 Sense of Rotation:	Anticlockwise in flight direction.	
8. Fluids:		
8.1 Fuel:	Non-ethylated aviation gasoline, with min. 72 octanes. Application of ethylated fuels is only permitted in case that the T.E.L. content does not exceed the value of 0.06% vol.	
	LBZ 72	
	LBZ 78	
	LBE 80	
	LBE 87	
	Shell 80	
	ESSO 80	
	AVGAS 100 LL	
	(DEFENCE STANDARD 91/90, ASTM D910)	
8.2 Oil:	AERO SHELL 100 (a mineral oil) or equivalent – is recommended for running-in (max. up to 50 hours).	
	AERO SHELL W 100 or equivalent – is recommended for after-running-in operation in temperate climatic area.	
	AERO SHELL W 120 or equivalent – is recommended for after-running-in operation in tropical area.	
	AERO SHELL W 80 or AERO SHELL W 65 or equivalent – is recommended for after-running-in operation during winter or in polar area.	
8.3 Coolant:	None	

9. Fluid capacities:

9.1 Fuel:	Total:	130 litres
	Usable:	127 litres
	2 x 65 litres in main tanks	

9.2 Oil: Minimum 7 liters – Maximum 12 liters

9.3 Coolant system capacity: None

10. Air Speeds:	Never Exceed Speed Limit	$V_{NE}$	315 km/h CAS
	Normal Operating Speed Limit	$V_{NO}$	226 km/h CAS
	Design Manoeuvring Speed Limit	$V_A$	
	Category A,U		270 km/h CAS
	Category N		220 km/h CAS
	Maximum Flaps Extended Speed Limit	$V_{FE}$	185 km/h CAS
	Maximum Speed Limit for flicked figures		
	Category A		160 km/h CAS

11. Maximum Operating Altitude:	Category A, U	4 250 m
	Category N	3 800 m

12. All-weather Operations Capability: The aircraft is approved for VFR Day flights.

13. Maximum Weights:	Max. Take-off and Landing weight:	
	Category A, U	920 kg
	Category N	970 kg
	Max. Variable Load:	200 kg

14. Centre of Gravity Range: 19 % – 27 % MAC  
M.A.C. is 1 460 mm; 0 % M.A.C. is 300 mm aft reference datum.

15. Datum: The rear part of firewall; from it are measured, for purpose of assignment of Gravity Centre, all lateral dimensions.

16. Control surface deflections:	Elevator deflection	up	$34^{\circ} + 0^{\circ}, -1^{\circ}$
		down	$27^{\circ} + 1^{\circ}$
	Rudder deflection	right and left	$30^{\circ} \pm 2^{\circ}$
	Ailerons deflection	up	$21^{\circ} \pm 1^{\circ}$
		down	$17^{\circ} \pm 1^{\circ}$
	Wing flaps positions	retracted	$0^{\circ}$
		take-off	$14^{\circ} \pm 1^{\circ}$
	landing	$37^{\circ} \pm 1^{\circ}$	

17. Levelling Means:	Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.
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18. Minimum Flight Crew: 1 (Pilot)



- |   |   |
|---|---|
| 19. Maximum Passenger Seating Capacity: | 2 (including crew)  |
| 20. (Reserved)                          |   |
| 21. Baggage/Cargo Compartments:         | Max. 20 kg  |
| 22. Wheels and Tires:                   | <p>Wheels of main gear K 22-0100-7 with tire Barum 420 x 150 model, or<br/>Wheels of main gear K 22-3100-7 with tire Goodyear 6.00-6.5, P/N 607C41-1.</p> <p>Wheel of nose gear K 23-0000-7 with tire Barum 350 x 135, or<br/>Wheel of nose gear K 51-1100-7 with tire Goodyear 5.00-5, P/N 505C61-8.</p> |



#### **BIV. Operating and Service Instructions**

1. Flight Manual:
  - In Czech language Letová příručka Z 42 M, date of issue 1977
  - In English language Flight Manual of the ZLIN 42 M Aircraft, date of issue 1978
  - In German language Flughandbuch ZLIN 42 M, date of issue 1978
2. Technical Manual:
  - In Czech language Technický popis a návod k obsluze letounu Z 42 M, date of issue 1977
  - In English language Technical Manual of the ZLIN 42 M Aircraft, date of issue 1973
3. Repair Manual:
  - In Czech language Opravárenská příručka letounů Z 42, Z 42 M, Z 42 MU, date of issue 1978
4. Catalogue of Spare Parts:
  - In Russian, Czech, German and English language Katalog náhradních dílů Z 42 M, date of issue 1977
5. Table of Dimensions, Limits and Clearances:
  - In Czech, German and English language
    - Album rozměrů, tolerancí a vůlí Z 42, Z 42 M, Z 43, date of issue 1976
    - Album der Abmessungen, der Toleranz und Spielangaben Z 42, Z 42 M, Z 43, date of issue 1976
    - Table of Dimensions, Limits and Clearances Z 42, Z 42 M, Z 43, date of issue 1976
6. Manual for Operation:
  - In Czech language Doc. No. 232.071 Příručka pro provoz letounů Z 42 M, Z 42 MU bez generálních oprav draku část 1 a 2, prohlídka A, B, C, date of issue 1997
  - In English language Doc. No. 232.071 Manual for operation of Z 42 M, Z 42 MU aircraft without airframe overhaul, Part 1, Part 2, revision A, B, C, date of issue 1997
7. Instruments and Aggregates:
  - In Czech language Doc. No. PRA.081 Přístroje a agregáty, použité na letounech Z 42 M, Z 42 MU, Z 142 a Z 43, date of issue 1996





**BV. Notes**

- Note 1: The Z 42 M aircraft have been converted by the manufacturer to the models:  
Z 42 MU S/N: 0048
- Note 2: For operation of the airplane in other than the Normal Category, compliance with the applicable parts of Mandatory Service Bulletins Z42/54a, Z42/55a and Z42/56a or later revision of each is required.
- Note 3: The EASA type certification standard includes that of CAA Cz TCDS No. 69-01 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 4: The EASA type certification standard includes that of CAA Cz TCDS No. 69-02 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

**SECTION B2: Reserved**



## **SECTION C1: GENERAL Z 42 MU Type Design**

### **C1. General**

1. a) Type: Z 42  
b) Variant: Z 42 MU
2. Airworthiness category: Utility (U) (see Note 3)  
Normal (N) (see Note 3)
3. Type Certificate Holder: Moravan Aviation s.r.o.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: Moravan, n.p.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0011-0014; 0027; 0049-0059
5. Certification Application Date: ---
6. CAA Cz Type Certificate Date: 01-Feb-1974
7. EASA Type Certificate Date: 22-Mar-2007 (reissue, EASA)

The EASA Type Certificate replaces the CAA Cz Type Certificate No. 73-06.

### **CII. Certification Basis**

1. Reference Date for determining the applicable requirements: ---
2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt 23-13 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exemptions: None
8. EASA Equivalent Safety Findings: § 23.33 – In the Flight manual is a notice – limitation of revolutions of the propeller is met in normal category at maximal flight weight up to a height of 600 m MSA.  
§ 23.177(a)(2) – Sufficient controllability in critical regimes of flight.



§ 23.613(c); § 23.615 – Used materials and calculation results are convenient.

§ 23.955 – The fuel flow is higher than the consumption at take-off regime.

§ 23.991(b) – The engine is equipped with a high-pressure pump connected with a low-pressure pump to one aggregate, the low-pressure pump breakdown is extremely improbable.

§ 23.1013(e); § 23.1019 – The screen area at oil tank outlet is several times larger than the outlet pipe union section.

§ 23.1183(–) - The hoses material safety is verified by experiences from operation.

§ 23.1323 – At the speeds over 200 km/h, there is made a correction on the safe side.

§ 23.1389(b); §23.1391; §23.1393; §23.1395; §23.1397; § 23.1401 – Landing lights, anti-collision lights are convenient with respect to the night flights exclusiveness.

9. EASA Environmental Standards: ICAO Annex 16/I, Chapter 6

### **CHII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: The specification list of Aircraft Z 42 MU, No. S-MU 42.0000.
2. Description: The Z 42 MU aircraft is two-seat, low wing, single-engine, and cantilever monoplane.
3. Equipment: Approved equipment list is stated in Flight manual for the Zlin Z 42MU Aircraft, Chapter 4.
4. Dimensions:

Span:	9.11 m
Length:	7.07 m
Height:	2.69 m
Wing Area:	13.15 m <sup>2</sup>
5. Engine:
  - 5.1.1 Model: M – 137 A
  - 5.1.2 Type Certificate: EASA approved (CAA Cz TC No. 69-01) (see Note 4)
  - 5.1.3 Limitations:

Max. Take-off power (5 min.)	
max. Power	133 kW (180 HP)
max. Engine speed	2 750 RPM
max. Consumption	61 l/h
max. Manifold pressure	100 ± 2 kPa
Max. Continuous power	
max. Power	118 kW (160 HP)
max. Engine speed	2 680 RPM
max. Consumption	52 l/h
max. Manifold pressure	95 ± 2 kPa



Max. Cruising power	
max. Power	103 kW (140 HP)
max. Engine speed	2 580 RPM
max. Consumption	43 l/h
max. Manifold pressure	87 kPa

or

5.2.1 Model:	M – 137 AZ
5.2.2 Type Certificate:	EASA approved (CAA Cz TC No. 69-01) (see Note 4)

5.2.3 Limitations:	Max. Take-off power (5 min.)	
	max. Power	133 kW (180 HP)
	max. Engine speed	2 750 RPM
	max. Consumption	61 l/h
	max. Manifold pressure	100 ± 2 kPa
	Max. Continuous power	
	max. Power	118 kW (160 HP)
	max. Engine speed	2 680 RPM
	max. Consumption	52 l/h
	max. Manifold pressure	95 ± 2 kPa
	Max. Cruising power	
	max. Power	103 kW (140 HP)
	max. Engine speed	2 580 RPM
	max. Consumption	43 l/h
	max. Manifold pressure	87 kPa

6. Load factors:	Category U	+5.0 g, -3.2 g
	Category N	+3.8 g, -1.5 g

7. Propeller:

7.1 Model:	V 503 A
7.2 Type Certificate:	EASA approved (CAA Cz TC No. 69-02) (see Note 5)
7.3 Number of blades:	2
7.4 Diameter:	2 000 mm
7.5 Sense of Rotation:	Anticlockwise in flight direction.

8. Fluids:

8.1 Fuel:	Non-ethylated aviation gasoline, with min. 72 octanes. Application of ethylated fuels is only permitted in case the T.E.L. content does not exceed the value of 0.06% vol.
-----------	--

LBZ 72  
LBZ 78  
LBE 80  
LBE 87  
Shell 80



	ESSO 80		
	AVGAS 100 LL (DEFENCE STANDARD 91/90, ASTM D910)		
8.2 Oil:	AERO SHELL 100 (a mineral oil) or equivalent – is recommended for running-in (max. up to 50 hours).  AERO SHELL W 100 or equivalent – is recommended for after-running-in operation in temperate climatic area.  AERO SHELL W 120 or equivalent – is recommended for after-running-in operation in tropical area.  AERO SHELL W 80 or AERO SHELL W 65 or equivalent – is recommended for after-running-in operation during winter or in polar area.		
8.3 Coolant:	None		
9. Fluid capacities:			
9.1 Fuel:	Total:	130 litres	
	Usable:	127 litres	
	2 x 65 litres in main tanks		
9.2 Oil:	Minimum 7 litres – Maximum 12 litres		
9.3 Coolant system capacity:	None		
10. Air Speeds:	Never Exceed Speed Limit	V <sub>NE</sub>	315 km/h CAS
	Normal Operating Speed Limit	V <sub>NO</sub>	226 km/h CAS
	Design Manoeuvring Speed Limit	V <sub>A</sub>	
	Category U		270 km/h CAS
	Category N		220 km/h CAS
	Maximum Flaps Extended Speed Limit	V <sub>FE</sub>	185 km/h CAS
11. Maximum Operating Altitude:	Category U		4 250 m
	Category N		3 800 m
12. All-weather Operations Capability:	The aircraft is approved for VFR Day flights.		
13. Maximum Weights:	Max. Take-off and Landing weight:		
	Category U		920 kg
	Category N		970 kg
	Max. Variable Load:		
	Category U, N		200 kg
14. Centre of Gravity Range:	19 % – 27 % MAC M.A.C. is 1 460 mm; 0 % M.A.C. is 300 mm aft reference datum.		



15. Datum: The rear part of firewall; from it are measured, for purpose of assignation of Gravity Centre, all lateral dimensions.
16. Control surface deflections:
- |                      |                |                                      |
|----------------------|----------------|--------------------------------------|
| Elevator deflection  | up             | $34^{\circ} + 0^{\circ}, -1^{\circ}$ |
|                      | down           | $27^{\circ} + 1^{\circ}$             |
| Rudder deflection    | right and left | $30^{\circ} \pm 2^{\circ}$           |
| Ailerons deflection  | up             | $21^{\circ} \pm 1^{\circ}$           |
|                      | down           | $17^{\circ} \pm 1^{\circ}$           |
| Wing flaps positions | retracted      | $0^{\circ}$                          |
|                      | take-off       | $14^{\circ} \pm 1^{\circ}$           |
|                      | landing        | $37^{\circ} \pm 1^{\circ}$           |
17. Levelling Means: Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.
18. Minimum Flight Crew: 1 (Pilot)
19. Maximum Passenger Seating Capacity: 2 (including crew)
20. (Reserved)
21. Baggage/Cargo Compartments: Max. 20 kg



#### **CIV. Operating and Service Instructions**

1. Flight Manual:
  - In Czech language Letová příručka Z 42 MU, date of issue 1975
  - In English language Flight Manual ZLIN 42 MU, date of issue 1974
  - In German language Flugzeugbetriebshandbuch ZLIN 42 MU, date of issue 1974
2. Technical Manual:
  - In Czech language Technický popis a návod k obsluze letounu Z 42 MU, date of issue 1975
  - In English language Technical Manual ZLIN 42 MU, date of issue 1974
3. Repair Manual:
  - In Czech language Opravárenská příručka letounů Z 42, Z 42 M, Z 42 MU, date of issue 1978
4. Catalogue Supplement:
  - In Czech, German and English language
    - ZLIN 42 MU – Dodatek ke katalogu Z 42
    - ZLIN 42 MU – Nachtrag zum Katalog Z 42
    - ZLIN 42 MU – Supplement of the Z 42 Catalogue
5. Table of Dimensions, Limits and Clearances:
  - In Czech, German and English language
    - Album rozměrů, tolerancí a vůlí Z 42, Z 42 M, Z 42 MU, Z 43, date of issue 1976
    - Album der Abmessungen, der Toleranz und Spielangaben Z 42, Z 42 M, Z 43, date of issue 1976
    - Table of Dimensions, Limits and Clearances Z 42, Z 42 M, Z 43, date of issue 1976
6. Manual for Operation:
  - In Czech language
    - Doc. No. 232.071 Příručka pro provoz letounů Z 42 M, Z 42 MU bez generálních oprav draku část 1 a 2, prohlídka A, B, C
  - In English language
    - Doc. No. 232.071 Manual for operation of Z 42 M, Z 42 MU aircraft without airframe overhaul, Part 1, Part 2, revision A, B, C, date issue 1997
7. Instruments and Aggregates:
  - In Czech language
    - Doc. No. PRA. 081 Přístroje a agregáty, použité na letounech Z 42 M, Z 42 MU, Z 142 a Z 43, date of issue 1996



**CV. Notes**

- Note 1: Model has been approved under original Czech CAA Type Certificate No. 73-06 dated November 30, 1973, Supplement No. 1 dated February 01, 1974.
- Note 2: The Z 42 MU aircraft have been converted by the aircraft manufacturer to the models:  
Z 42 M S/N: 0011; 0027
- Note 3: For operation of the airplane in other than the Normal Category, compliance with the applicable parts of Mandatory Service Bulletins Z42/54a, Z42/55a and Z42/56a or later revision of each is required.
- Note 4: The EASA type certification standard includes that of CAA Cz TCDS No. 69-01 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 5: The EASA type certification standard includes that of CAA Cz TCDS No. 69-02 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

**SECTION C2: Reserved**





## **SECTION D1: GENERAL Z 142 Type Design**

### **D1. General**

1. a) Type: Z 42  
b) Variant Z 142
2. Airworthiness category: Aerobatic (A) (see Note 2)  
Utility (U) (see Note 2)  
Normal (N) (see Note 2)
3. Type Certificate Holder: Moravan Aviation s.r.o.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: Moravan, n.p.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0001; 0201-0460  
  
Moravan, k.p.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0461-0524  
  
MORAVAN a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0525-0533; 0535
5. Certification Application Date: November 22, 1977
6. CAA Cz Type Certificate Date: January 28, 1980
7. EASA Type Certificate Date 22-Mar-2007 (reissue, EASA)

The EASA Type Certificate replaces the CAA Cz Type Certificate No. 80-01.

### **DII. Certification Basis**

1. Reference Date for determining the applicable requirements: ---
2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt 23-13 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None



7. EASA Exemptions: None
8. EASA Equivalent Safety Findings: § 23.177 (a)(2), (3) – Ample controllability of the airplane in specified conditions.  
§ 23.1013(e) – The level of safety is retained with the multiple area of the strainer surface.  
§ 23.1183(a) – The safety of hose materials is proved by experience in operation.  
§ 23.1323 – At the speeds above 240 km/hr, the accomplished correction is on the safe side.  
§ 23.1383(a); § 23.1389(b); § 23.1391; § 23.1393; § 23.1395; § 23.1401 – The measurement of light intensity and of colour shade of position and anti-collision lights has not been performed.  
It is permitted with respect to the fact that night flights are prevailingly of training character and are performed in a determined area.
9. EASA Environmental Standards: ICAO Annex 16/I, Chapter 10  
FAR PART 36, App. G

### **DIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: The specification list of Aircraft Z 142 No. S-Z 142.0001.
2. Description: The Z 142 aircraft is two-seat, single-engine, low wing cantilever monoplane.
3. Equipment: Approved equipment list is stated in document Flight manual of the Zlin Z 142 aircraft, Chapter 6.
4. Dimensions:
- |            |                      |
|------------|----------------------|
| Span:      | 9.160 m              |
| Length:    | 7.330 m              |
| Height:    | 2.750 m              |
| Wing Area: | 13.15 m <sup>2</sup> |
5. Engine:
- 5.1 Model: M 337 AK
- 5.2 Type Certificate: EASA approved (CAA Cz No. 94-06) (see Note 3)
- 5.3 Limitations:
- |                        |                 |
|------------------------|-----------------|
| Max. Take-off power    |                 |
| max. Power             | 154 kW (210 HP) |
| max. Engine speed      | 2 750 RPM       |
| max. Consumption       | 61 l/h          |
| max. Manifold pressure | 118 kPa         |



- |     |                    |   |             |                 |
|-----|--------------------|---|-------------|-----------------|
|     |                    | Continuous power  |             |                 |
|     |                    | max. Power  |             | 125 kW (170 HP) |
|     |                    | max. Engine speed   |             | 2 600 RPM       |
|     |                    | max. Consumption  |             | 56 l/h          |
|     |                    | max. Manifold pressure  |             | 98 kPa          |
|     |                    | Cruising power  |             |                 |
|     |                    | max. Power  |             | 103 kW (140 HP) |
|     |                    | max. Engine speed   |             | 2 400 RPM       |
|     |                    | max. Consumption  |             | 42 l/h          |
|     |                    | max. Manifold pressure  |             | 90 kPa          |
| 6.  | Load factors:      | Category A  | +6.0 g      | -3.5 g          |
|     |                    | Category U  | +5.0 g      | -3.0 g          |
|     |                    | Category N  | +3.8 g      | -1.5 g          |
| 7.  | Propeller:         |   |             |                 |
| 7.1 | Model:             | V 500 A   |             |                 |
| 7.2 | Type Certificate:  | EASA approved (CAA Cz TC No. 73-03) (see Note 4)  |             |                 |
| 7.3 | Number of blades:  | 2   |             |                 |
| 7.4 | Diameter:          | 2 000 mm  |             |                 |
| 7.5 | Sense of Rotation: | Anticlockwise in flight direction   |             |                 |
| 8.  | Fluids:            |   |             |                 |
| 8.1 | Fuel:              | LBZ 78  |             |                 |
|     |                    | SHELL 80  |             |                 |
|     |                    | ESSO 80 (TEO max. 0.06 % volume)  |             |                 |
|     |                    | Grade 100/130 (TEO max. 0.06 % volume)  |             |                 |
|     |                    | AVGAS 100 LL  |             |                 |
|     |                    | (DEFENCE STANDARD 91/90, ASTM D910)AVGAS 100L (gr. 100/130)   |             |                 |
| 8.2 | Oil:               | AERO SHELL 100 (a mineral oil) or equivalent – is recommended for running-in (max. up to 50 hours).           |             |                 |
|     |                    | AERO SHELL W 100 or equivalent – is recommended for after-running-in operation in temperate climatic area.    |             |                 |
|     |                    | AERO SHELL W 120 or equivalent – is recommended for after-running-in operation in tropical area.              |             |                 |
|     |                    | AERO SHELL W 65 or equivalent – is recommended for after-running-in operation during winter or in polar area. |             |                 |
| 8.3 | Coolant:           | None  |             |                 |
| 9.  | Fluid capacities:  |   |             |                 |
| 9.1 | Fuel:              | Total:  | Category A: | 125 litres      |
|     |                    |   | Category N: | 225 litres      |



Usable: Category A:		122 litres
Category N:		220 litres
2 x 60 litres in main tanks		
2 x 50 litres in auxiliary wing tip tanks		
1 x 5 litres in aerobatic tank		
9.2 Oil:	Minimum 7 litres – Maximum 12 litres	
9.3 Coolant system capacity:	None	
10. Air Speeds:	Never Exceed Speed Limit	
	$V_{NE}$	
	Category A, U	333 km/h IAS
	Category N	332 km/h IAS
	Normal Operating Speed Limit	
	$V_{NO}$	
	Category A, U	273 km/h IAS
	Category N	272 km/h IAS
	Design Manoeuvring Speed Limit	
	$V_A$	
	Category A	284 km/h IAS
	Category U	264 km/h IAS
	Category N	235 km/h IAS
	Maximum Flaps Extended Speed Limit	
	$V_{FE}$	
	Category A, U	189 km/h IAS
	Category N	188 km/h IAS
11. Maximum Operating Altitude:	Category A	5 000 m
	Category U	4 700 m
	Category N	4 300 m
12. All-weather Operations Capability:	The aircraft is approved for VFR Day flights.	
13. Maximum Weights:	Max. Take-off and Landing weight:	
	Category A	970 kg
	Category U	1 020 kg
	Category N	
	– Take-off weight	1 090 kg
	– Landing weight	1 050 kg
	Max. Variable Load:	
	Category A	240 kg
	Category U	290 kg
	Category N	360 kg
14. Centre of Gravity Range:	20 % – 26 % MAC	
	M.A.C. is 1 460 mm; 0 % M.A.C. is 300 mm aft reference datum.	
15. Datum:	The rear part of firewall; from it are measured, for purpose of assignment of Gravity Centre, all lateral dimensions.	
16. Control surface deflections:	Elevator deflection	up $34^\circ + 0^\circ$ ; - $1^\circ$ down $31^\circ + 1^\circ$
	Rudder deflection	right and left $30^\circ \pm 2^\circ$



Ailerons deflection	up	$21^{\circ} \pm 1^{\circ}$
	down	$17^{\circ} \pm 1^{\circ}$
Wing flaps positions	retracted	$0^{\circ}$
	take-off	$14^{\circ} \pm 1^{\circ}$
	landing	$37^{\circ} \pm 1^{\circ}$

17. Levelling Means: Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.
18. Minimum Flight Crew: 1 (Pilot)
19. Maximum Passenger Seating Capacity: 2 (including crew)
20. (Reserved)
21. Baggage/Cargo Compartments: Max. 20 kg.
22. Wheels and Tyres: Wheels of main gear K 22-0100-7 with tyre Mitas (Barum) 420 x 150 model 2, or  
Wheels of main gear K 22-3100-7 with tyre Goodyear 6.00-6.5, P/N 607C41-1.  
  
Wheel of nose gear K 23-0000-7 with tyre Mitas (Barum) 350 x 135, or  
Wheel of nose gear K 51-1100-7 with tyre Goodyear 5.00-5, P/N 505C61-8.



**DIV. Operating and Service Instructions**

1. Flight Manual:
  - In Czech language Letová příručka Z 142, date of issue 1982
  - In English language Flight Manual of the ZLIN 142 Aircraft, date of issue 1989
  - In German language Flughandbuch ZLIN 142, date of issue 1982
2. Technical Manual:
  - In Czech language Technický popis pro letoun ZLIN 142, date of issue 1988
  - In English language Technical Manual Z 142, date of issue 1990
3. Repair Manual:
  - In Czech language Opravárenská příručka letounu ZLIN 142, date of issue 1988
4. Catalogue of Spare Parts:
  - In Russian, Czech, German and English language, date of issue 1988  
Katalog náhradních dílů Z 142  
Katalog der Ersatzteile Z 142  
Catalogue of Spare Parts Z 142
5. Spare Parts Catalogue – Supplement
  - In Russian, Czech, German and English language  
Dodatek ke Katalogu náhradních dílů letoun Z 142  
Spare Parts Catalogue – Supplement Z 142
6. Table of Dimensions, Limits and Clearances:
  - In Russian, Czech, German and English language, date of issue 1982  
Album rozměrů, tolerancí a vůlí Z 142  
Album der Abmessungen, der Toleranz und Spielangabe Z 142  
Table of Dimensions, Limits and Clearance Z 142
7. Manual for Operation:
  - In Czech language  
Doc. No. Z002.071  
Příručka pro provoz letounu Z 142 bez generálních oprav draku část 1, část 2, prohlídka A, B, C  
date of issue 1996
  - In English language  
Doc. No. Z002.071  
Manual for Operation of Z 142 Aircraft without airframe overhaul Part 1, Part 2, Revision A, B, C  
date of issue 1996
8. Instruments and Aggregates:
  - In Czech language  
Doc. No. PRA. 081  
Přístroje a agregáty, použité na letounech Z 42 M, Z 42 MU, Z 142 a Z 43, date of issue 1996



**DV. Notes**

- Note 1:           Following Z 142 aircraft have been converted by the aircraft manufacturers to the models:  
                  Z 142 C           S/N: 0238; 0524  
                  Z 242 L           S/N: 0490
- Note 2:           For operation of the airplane in other than the Normal Category, compliance with the applicable parts of Mandatory Service Bulletins Z142/53a, Z142/54a and Z142/55a or later revision of each is required.
- Note 3:           The EASA type certification standard includes that of CAA Cz TCDS No. 94-06 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 4:           The EASA type certification standard includes that of CAA Cz TCDS No. 73-03 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

**SECTION D2:       Reserved**



## **SECTION E1: GENERAL Z 142 C Type Design**

### **EI. General**

1. a) Type: Z 42  
b) Variant: Z 142 C
2. Airworthiness category: Aerobatic (A) (see Note 2)  
Utility (U) (see Note 2)  
Normal (N) (see Note 2)
3. Type Certificate Holder: Moravan Aviation s.r.o.  
Letiště 1578, 765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: Moravan a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0534; 0536-0555; 0560-0563  
  
MORAVAN – AEROPLANES, a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
S/N: 0564-0565; 0569-0570
5. Application Date: ---
6. CAA Cz Type Certificate Date: July 18, 1991
7. EASA Type Certificate Date: 22-Mar-2007 (reissue, EASA)

The EASA Type Certificate replaces the CAA Cz Type Certificate No. 80-01.

### **EII. Certification Basis**

1. Reference Date for determining the applicable requirements: ---
2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt 23-20 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exemptions: None





8. EASA Equivalent Safety Findings: § 23.177 (a)(2), (3) – Ample controllability of the airplane in specified conditions.  
§ 23.1013(e); § 23.1019(b) – The active strainer input area is thirty-times larger than the critical outlet section. The strainer blocking has never occurred during operation. Dangerous blocking is prevented by scheduled inspection periods. The airplane is provided with a duplicate oil pressure checking system.  
§ 23.1323 – At the speeds above 240 km/h, the accomplished correction is on the safe side.
9. EASA Environmental Standards: ICAO Annex 16/I, Chapter 10  
FAR PART 36, App. G

### **EIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: The specification list of Aircraft Z 142 C No. S-C142.0000.
2. Description: The Z 142 C aircraft is two-seat, single-engine, low wing cantilever monoplane.
3. Equipment: Approval equipment list is stated in document Flight manual of the Zlin Z 142 aircraft, Chapter 6.
4. Dimensions:
- |            |                      |
|------------|----------------------|
| Span:      | 9.160 m              |
| Length:    | 7.330 m              |
| Height:    | 2.750 m              |
| Wing Area: | 13.15 m <sup>2</sup> |
5. Engine:
- 5.1 Model: M 337 AK
- 5.2 Type Certificate: EASA approved (CAA Cz TC No. 94-06) (see Note 3)
- 5.3 Limitations:
- |                        |                  |
|------------------------|------------------|
| Max. Take-off power    |                  |
| max. Power             | 154 kW, (210 HP) |
| max. Engine speed      | 2 750 RPM        |
| max. Manifold pressure | 118 kPa          |
| Continuous power       |                  |
| max. Power             | 125 kW, (170 HP) |
| max. Engine speed      | 2 600 RPM        |
| max. Manifold pressure | 98 kPa           |
| Cruising power         |                  |
| max. Power             | 103 kW, (140 HP) |
| max. Engine speed      | 2 400 RPM        |
| max. Manifold pressure | 90 kPa           |
6. Load factors:
- |            |                |
|------------|----------------|
| Category A | +6.0 g, -3.5 g |
| Category U | +5.0 g, -3.0 g |
| Category N | +3.8 g, -1.5 g |



7. Propeller:

- 7.1 Model: V 500 A
- 7.2 Type Certificate: EASA approved (CAA Cz TC No. 73-03) (see Note 4)
- 7.3 Number of blades: 2
- 7.4 Diameter: 2 000 mm
- 7.5 Sense of Rotation: Anticlockwise in flight direction.

8. Fluids:

- 8.1 Fuel:
- LBZ 78
- SHELL 80
- ESSO 80 (TEO max. 0.06 % volume)
- Grade 100/130 (TEO max. 0.06 % volume)
- AVGAS 100 LL
- (DEFENCE STANDARD 91/90, ASTM D910)
- 8.2 Oil:
- AERO SHELL 100 (a mineral oil) or equivalent – is recommended for running-in (max. up to 50 hours).
- AERO SHELL W 100 or equivalent – is recommended for after-running-in operation in temperate climatic area.
- AERO SHELL W 120 or equivalent – is recommended for after-running-in operation in tropical area.
- AERO SHELL W 65 or equivalent – is recommended for after-running-in operation during winter or in polar area.
- 8.3 Coolant: None

9. Fluid capacities:

- 9.1 Fuel:
- |         |   |            |
|---------|---|------------|
| Total:  | for category A:                           | 125 litres |
|         | for category N:                           | 225 litres |
| Usable: | for category A:                           | 122 litres |
|         | for category N:                           | 220 litres |
|         | 2 x 60 litres in main tanks               |            |
|         | 2 x 50 litres in auxiliary wing tip tanks |            |
|         | 1 x 5 litres in aerobatic tank            |            |
- 9.2 Oil: Minimum 7 litres – Maximum 12 litres
- 9.3 Coolant system capacity: None

10. Air Speeds:

- |                              |          |              |
|------------------------------|----------|--------------|
| Never Exceed Speed Limit     | $V_{NE}$ |              |
| Category A, U                |          | 333 km/h IAS |
| Category N                   |          | 332 km/h IAS |
| Normal Operating Speed Limit | $V_{NO}$ |              |
| Category A, U                |          | 273 km/h IAS |
| Category N                   |          | 272 km/h IAS |



		Design Manoeuvring Speed	
Limit		$V_A$	
Category A			284 km/h IAS
Category U			264 km/h IAS
Category N			235 km/h IAS
		Maximum Flaps Extended Speed	
Limit		$V_{FE}$	
Category A, U			189 km/h IAS
Category N			188 km/h IAS
11. Maximum Operating Altitude:	Category A		4 750 m
	Category U		4 500 m
	Category N		4 300 m
12. All-weather Operations Capability:	The aircraft is approved for VFR Day and Night flights. IFR, not icing conditions.		
13. Maximum Weights:	Max. Take-off and Landing weight:		
	Category A		970 kg
	Category U		1 020 kg
	Category N		
	- Take-off weight		1 090 kg
	- Landing weight		1 050 kg
	Max. Variable Load:		
	Category A, U, N		200 kg
14. Centre of Gravity Range:	20 % – 26 % MAC M.A.C. is 1 460 mm; 0 % M.A.C. is 300 mm aft reference datum.		
15. Datum:	The rear part of firewall; from it are measured, for purpose of assignment of Gravity Centre, all lateral dimensions.		
16. Control surface deflections:	Elevator deflection	up down	$34^\circ + 0^\circ$ ; - $1^\circ$ $31^\circ + 1^\circ$
	Rudder deflection	right and left	$30^\circ \pm 2^\circ$
	Ailerons deflection	up down	$21^\circ \pm 1^\circ$ $17^\circ \pm 1^\circ$
	Wing flaps positions	retracted take-off landing	$0^\circ$ $14^\circ \pm 1^\circ$ $37^\circ \pm 1^\circ$
17. Levelling Means:	Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.		
18. Minimum Flight Crew:	1 (Pilot)		
19. Maximum Passenger Seating Capacity:	2 (including crew)		
20. (Reserved)			
21. Baggage/Cargo Compartments:	Max. 20 kg		



22. Wheels and Tyres:

Wheels of main gear K 22-0100-7 with tyre  
Mitas (Barum) 420 x 150 model 2, or  
Wheels of main gear K 22-3100-7 with tyre  
Goodyear 6.00-6.5, P/N 607C41-1.

Wheel of nose gear K 23-0000-7 with tyre  
Mitas (Barum) 350 x 135, or  
Wheel of nose gear K 51-1100-7 with tyre  
Goodyear 5.00-5, P/N 505C61-8



#### **EIV. Operating and Service Instructions**

1. Flight Manual:
  - In English language Flight Manual of the Z 142 C Aircraft, date of issue 1991
2. Maintenance Manual:
  - In Czech language Návod pro údržbu pro letoun ZLIN 142 C, část II, date of issue 1993
  - In English language Maintenance Manual of the Z 142 C Aircraft Vol. I, date of issue 1991  
Maintenance Manual of the Z 142 C Aircraft Vol. II, date of issue 1993
3. Catalogue of spare parts:
  - In Czech, English and German language Katalog náhradních dílů Z 142 C  
Catalogue of spare parts Z 142 C  
Katalog der Ersatzteile Z 142 C
4. Table of dimensions, limits and clearances:
  - In Czech, English and German language Album rozměrů, tolerancí a vůlí  
Table of dimensions, limits and clearances  
Album der Abmessungen, der Toleranz – und spielanlagen ZLIN 142 C – Z 142 C-AF  
date of issue 1994



**EV.    Notes**

- Note 1:            The Z 142 C aircraft have been converted by the aircraft manufacturer to the models:  
                      Z 242 L                    S/N: 0541
- Note 2:            For operation of the airplane in other than the Normal Category, compliance with the applicable parts of Mandatory Service Bulletins Z142C/30a, Z142C/31a and Z142C/32a or later revision of each is required.
- Note 3:            The EASA type certification standard includes that of CAA Cz TCDS No. 94-06 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 4:            The EASA type certification standard includes that of CAA Cz TCDS No. 73-03 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

**SECTION E2:        Reserved**



## **SECTION F1: GENERAL Z 242 L Type Design**

### **F1. General**

1. a) Type: Z 42  
b) Variant: Z 242 L
2. Airworthiness category: Aerobatic (A) (see Note 1)  
Utility (U) (see Note 1)  
Normal (N) (see Note 1)
3. Type Certificate Holder: Moravan Aviation s.r.o.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: Moravan a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECHOSLOVAKIA  
up to S/N 0730 including  
  
MORAVAN – AEROPLANES, a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
from S/N 0731 including
5. Certification Application Date: February 13, 1989
6. CAA Cz Type Certificate Date: April 22, 1992
7. EASA Type Certificate Date: 01-Feb-2005 (reissue, EASA)

The EASA Type Certificate replaces the CAA Cz Type Certificate No. 92-03

### **FII. Certification Basis**

1. Reference Date for determining the applicable requirements: February 13, 1989
2. (Reserved)
3. (Reserved)
4. Airworthiness Requirement: FAR PART 23, Amdt. 23-36 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exemptions: None
8. EASA Equivalent Safety Findings: § 23.177(a)(2), (3), Exception to verbal fulfilment.  
An equivalent safety is provided.



9. EASA Environmental Standards: ICAO Annex 16/I, Chapter 10  
FAR PART 36, App. G (Amdt. 36-20)

### **FIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: The specification list of Aircraft Z 242 L No. S-L242.0000;  
the specification drawing No. L 242.0000
2. Description: The Z 242 L aircraft is two-seat, low wing, single-engine,  
cantilever monoplane.
3. Equipment: Master equipment list is stated in document Flight manual of the  
ZLIN Z 242 L aircraft No. 003.012.
4. Dimensions:
- |            |                       |
|------------|-----------------------|
| Span:      | 9.340 m               |
| Length:    | 6.940 m               |
| Height:    | 2.950 m               |
| Wing Area: | 13.860 m <sup>2</sup> |
5. Engine:
- 5.1 Model: TEXTRON Lycoming AEIO-360-A1B6
- 5.2 Type Certificate: EASA approved (FAA TC No. 1E10) (see Note 2)
- 5.3 Limitations:
- |                            |           |
|----------------------------|-----------|
| Max. Continuous power (MT) |           |
| max. Power                 | 149 kW    |
| max. Engine speed          | 2 700 RPM |
| max. Consumption           | 61 l/h    |
| max. Manifold pressure     | 101 kPa   |
| Cruising (75 % MC)         |           |
| max. Power                 | 112 kW    |
| max. Engine speed          | 2 450 RPM |
| max. Consumption           | 46.5 l/h  |
| max. Manifold pressure     | 82 kPa    |
| Cruising (65 % MC)         |           |
| max. Power                 | 97 kW     |
| max. Engine speed          | 2 350 RPM |
| max. Consumption           | 36 l/h    |
| max. Manifold pressure     | 78 kPa    |
6. Load factors:
- |            |                |
|------------|----------------|
| Category A | +6.0 g, -3.5 g |
| Category U | +5.0 g, -3.0 g |
| Category N | +3.8 g, -1.5 g |
7. Propellers:
- 7.1.1 Model: MTV-9-B-C/C-188-18a
- 7.1.2 Type Certificate: EASA approved (LBA TC No. 32.130/65) (see Note 3)
- 7.1.3 Number of blades: 3
- 7.1.4 Diameter: 1 880 mm





- 7.1.5 Sense of Rotation: Clockwise in flight direction
- or
- 7.2.1 Model: HC-C3YR-4BF/FC6890
- 7.2.2 Type Certificate: EASA approved (FAA TC No. P25EA) (see Note 4)
- 7.2.3 Number of blades: 3
- 7.2.4 Diameter: 1 780 mm
- 7.2.5 Sense of Rotation: Clockwise in flight direction.
8. Fluids:
- 8.1 Fuel: Aviation gasoline 100L, 100LL or BL 95  
(see service instruction of Engine manufacturer)
- 8.2 Oil: See Airplane flight manual
- 8.3 Coolant: None
9. Fluid capacities:
- 9.1 Fuel:
- |         |             |   |
|---------|-------------|---|
| Total:  | Category A: | 120 litres                                |
|         | Category N: | 230 litres                                |
| Usable: | Category A: | 117 litres                                |
|         | Category N: | 225 litres                                |
|         |             | 2 x 60 litres in main tanks               |
|         |             | 2 x 55 litres in auxiliary wing tip tanks |
- 9.2 Oil: Minimum 4 litres – Maximum 8 litres
- 9.3 Coolant system capacity: None
10. Air Speeds:
- |  |            |              |
|--|------------|--------------|
| Never Exceed Speed Limit                       | $V_{NE}$   | 319 km/h IAS |
| Normal Operating Speed Limit                   | $V_{NO}$   | 250 km/h IAS |
| Design Manoeuvring Speed Limit                 | $V_A$      |              |
|  | Category A | 265 km/h IAS |
|  | Category U | 248 km/h IAS |
|  | Category N | 224 km/h IAS |
| Maximum Flaps Extended Speed Limit             | $V_{FE}$   | 184 km/h IAS |
| Maximum Permissible Snap Manoeuvre Speed Limit |            |              |
|  | Category A | 175 km/h IAS |
11. Maximum Operating Altitude:
- |            |         |
|------------|---------|
| Category A | 4 800 m |
| Category U | 4 600 m |
| Category N | 4 500 m |
12. All-weather Operations Capability: VFR Day and Night, IFR, not in icing conditions



13. Maximum Weights:
- |                         |          |
|-------------------------|----------|
| Maximum Take-off Weight |          |
| Category A              | 970 kg   |
| Category U              | 1 020 kg |
| Category N              | 1 090 kg |
| Maximum Landing Weight  |          |
| Category A              | 970 kg   |
| Category U              | 1 020 kg |
| Category N              | 1 050 kg |
| Maximum Variable Load   |          |
| Category A              | 240 kg   |
| Category U              | 290 kg   |
| Category N              | 360 kg   |
14. Centre of Gravity Range: 19 % ÷ 26 % MAC  
M.A.C. is 1 504 mm; 0 % M.A.C. is 368.4 mm aft reference datum.
15. Datum: The rear part of firewall; from it are measured, for purpose of assignation of Gravity Centre, all lateral dimensions.
16. Control Surface Deflections:
- |                      |                |                |
|----------------------|----------------|----------------|
| Elevator deflection  | up             | 34° + 0°; - 1° |
|                      | down           | 31° + 1°; - 0° |
| Rudder deflection    | right and left | 30° ± 2°       |
| Ailerons deflection  | up             | 21° ± 1°       |
|                      | down           | 17° ± 1°       |
| Wing flaps positions | retracted      | 0°             |
|                      | take-off       | 14° ± 1°       |
|                      | landing        | 37° ± 1°       |
17. Levelling Means: Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.
18. Minimum Flight Crew: 1 (Pilot)
19. Maximum Passenger Seating Capacity: 2 (including crew)
20. (Reserved)
21. Baggage/Cargo Compartments: Max. 20 kg (for category Normal)
22. Wheels and Tyres:
- Wheels of main gear K 22-0100-7 with tyre Barum 420 x 150 model 2, or  
Wheels of main gear K 22-3100-7 with tyre Mitas 420 x 150 model 2 or with tyre Goodyear 6.00-6.5, P/N 607C41-1.
- Wheel of nose gear K 23-0000-7 with tyre Barum 350 x 135 model 2, or  
Wheel of nose gear K 51-1100-7 with tyre Mitas 350 x 135 or with tyre Goodyear 5.00-5, P/N 505C61-8



#### **FIV. Operating and Service Instructions**

1. Flight Manual:
  - In Czech language  
Letová příručka pro letoun ZLIN Z 242 L  
date of issue 1992
  - In English language  
Flight Manual of the ZLIN Z 242 L Aircraft  
date of issue 1992
  - Doc. No. 003.012  
*For S/N up to 0689 including*  
Flight Manual of the ZLIN Z 242 L Aircraft  
date of issue 1994
  - Doc. No. 003.012  
*For S/N 0691 and above*  
Flight Manual of the ZLIN Z 242 L Aircraft  
date of issue 1994
2. Maintenance Manual:
  - In Czech language  
Doc. No. 003.021.1  
Návod pro údržbu letounu Z 242 L – část I,  
Revidované vydání, date of issue 1996
  - Doc. No. 003.031.1  
Návod pro údržbu letounu Z 242 L – část II, Revidované  
vydání, date of issue 1997
  - In English language  
Doc. No. 003.022.1  
Maintenance Manual of the Z 242 L Aircraft  
– Vol. I, Reissue, date of issue 1996
  - Doc. No. 003.032.1  
Maintenance Manual of the Z 242 L Aircraft  
– Vol. II, Reissue, date of issue 1998
3. Table of dimensions, limits and clearances:
  - In Czech English and German language  
Doc. No. 003.050  
Album rozměrů, tolerancí a vůlí  
Table of dimensions, limits and clearances  
Album der abmessungen, der toleranz-und spielangaben  
Z 242 L, date of issue 1996
4. Illustrated parts catalog:
  - In Czech and English language  
Doc. No. 003.040.2  
Katalog náhradních dílů letounu Z 242 L  
Illustrated parts catalog Z 242 L, date of  
issue 1999



**FV. Notes:**

- Note 1: For operation of the airplane in other than the Normal Category, compliance with the applicable parts of Mandatory Service Bulletins Z242L/49a, Z242L/51a and Z242L/52a or later revision of each is required.
- Note 2: The EASA type certification standard includes that of FAA TCDS No. 1E10 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 3: The EASA type certification standard includes that of LBA TCDS No. 32.130/65 based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 4: The EASA type certification standard includes that of FAA TCDS No. P25EA based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

**SECTION F2: Reserved**



### **CHANGE RECORD**

Issue	Date	Changes
Issue 1	04-Feb-2005	Transfer of ZLIN Z 242 L Type Design to EASA
Issue 2	23-Mar-2007	Transfer of ZLIN Z 42 as basic Type Design under this TC / TCDS Transfer of ZLIN Z 42 M, Z 42 MU, Z 142, and Z 142 C