

EASA

**TYPE-CERTIFICATE
DATA SHEET**

MDM-1 “Fox”

Type Certificate Holder:

ZAKŁADY LOTNICZE
Margański & Mysłowski
Sp. z o.o.
ul. Strażacka 60
43-300 Bielsko-Biała
POLAND

EASA TCDS No. A.039

For variants: MDM-1 “Fox”
 MDM-1P “Fox-P”

Issue 02, 14 February 2007

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0.II. List of effective Pages:

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0.III. Change Record

Issue	Date	Changes
01	23 June 2005	Transfer from Polish Type Certificate No. BG-197 to the EASA Type Design.
02	14 February 2007	Including the MDM-1P "Fox P" version which was included to the Polish TC No. BG-197 with Certificate of Approval No Z-BG-01/99 on January 12 th , 1999. Editorial changes.

Section A: MDM-1 "Fox"

A.I. General

1. Data Sheet No.: EASA.039
2. a) Type: MDM-1 "Fox"
b) Variant: MDM-1 "Fox"
3. Airworthiness Category: Sailplane, Aerobatic
4. Type Certificate Holder: ZAKŁADY LOTNICZE
Margański & Mysłowski
Sp. z o.o.
ul. Strażacka 60
43-300 Bielsko-Biała
POLAND
5. Manufacturer: for S/N P-11, P-13÷P-16, 201÷235 :
Zakład Remontów i Produkcji Sprzętu Lotniczego
Edward Margański
ul. Cieszyńska 321
43-300 Bielsko-Biała
POLAND

from S/N 236 :
ZAKŁADY LOTNICZE
Margański & Mysłowski
Sp. z o.o.
ul. Strażacka 60
43-300 Bielsko-Biała
POLAND
6. Polish CAA Certification Date 27 July 1994
7. This EASA Type Certificate Data Sheet replaces Polish TCDS issue 4 (January 1999) to Type Certificate No. BG-197.

A.II. Certification Basis

1. Certification Basis: Defined 13 February 1985
2. Airworthiness Requirements: JAR-22 Change 4, issued on 7 May 1987
3. Requirements elected to comply: None
4. Special Conditions: None
5. Exemptions:
 1. Stall speed with two person crew exceeds 80 km/h (JAR 22.49)
 2. Airbrakes closing force exceeds 20 daN (JAR 22.143)
6. Equivalent Safety Findings: None

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: List of drawings, January 19th 1998
2. Description: Two-seat (tandem configuration) aerobatic and trainer glider.
Cantilever mid-wing monoplane with conventional tail unit (fixed stabilizer with elevator, fin and rudder).
All composite glass-epoxy structure. Bipartite tapered wing with Schempp-Hirth airbrakes protruding only from upper surface.
Fixed landing gear - main wheel with disk brake and tail wheel.
3. Equipment: Minimum equipment:
 - airspeed indicator,
 - altimeter,
 - accelerometer,
 - 5-points pilot harness,
 - parachute or back cushion (8 cm thick) for each crew member.Standard equipment (besides minimum equipment):
 - variometer with compensator,
 - pressure compensation vessel,
 - bank indicator,
 - compass,
 - seat cushion.
4. Dimensions:

Span	14,00 m
Wing area	12,34 m ²
Aspect Ratio	15,88
Length	7,38 m
Height	2,25 m
5. Launching Hook: Nose towing hook TOST E 85 or SZD-III A56 P
CG towing hook (optional) TOST Europa G 88
6. Weak links: Ultimate Strength: 677 daN ($\pm 10\%$)
7. Air Speeds:

Manoeuvring Speed	V_A	214 km/h
Never Exceed Speed	V_{NE}	282 km/h
Maximum permitted speeds		
- in rough air	V_{RA}	225 km/h
- in aero-tow	V_T	150 km/h
- in winch launching	V_W	150 km/h
8. Operational Capability: VFR Day
9. Masses:

Max. Mass	530 kg
Max. Empty Mass (without balance mass)	350 kg
10. Centre of Gravity Range: Empty glider with standard equipment:

Forward Limit	620 mm aft of datum point
Rearward Limit	645 mm aft of datum point

Centre of Gravity operational limits:

Forward Limit	213 mm aft of datum point (22,0% MAC)
Rearward Limit	379 mm aft of datum point (39,0% MAC)

MAC is 971 mm; 0% MAC is 2,1 mm aft of datum.
Datum: Leading edge and wing-fuselage division plane intersection.
Levelling means: Leading and trailing points of root chord (1308 mm) at the same level.

11. Seating Capacity: 2
12. Lifetime limitations: Refer to Maintenance Manual
13. Other limitations: Solo flight is permissible only on front seat.
Cross-country flight (gliding or towed) only with one person crew.
No baggage permitted.
The following kinds of operation are forbidden:
- auto-towing,
- flights in icing conditions,
- night flying,
- cloud flying without turn-and-bank indicator,
- aerobatic in rough air.
Manoeuvring load factor limits:
two person crew +7,0/-5,0
one person (no more than 100 kg incl. parachute) +9,0/-6,0
14. Deflection of control surfaces:
- | | | | |
|-----------|---------|-----|-------------|
| Aileron: | - up | 22° | ± 1° |
| | - down | 17° | ± 1° |
| Elevator: | - up | 25° | ± 1° |
| | - down | 25° | ± 1° |
| Rudder: | - left | 30° | + 1° / - 2° |
| | - right | 30° | + 1° / - 2° |

A.IV. Operating and Service Instructions

1. Flight Manuals:

- Polish: Instrukcja Użytkowania w Locie
Szybowca MDM-1 „Fox”,
wydanie III, Październik 1996
- Polish: Instrukcja Użytkowania w Locie
Szybowców MDM-1 „Fox” oraz MDM-1P „Fox P”,
wydanie IV, Grudzień 1998
- English: Flight Manual
MDM-1 „Fox”
issue III, October 1996
- English: Flight Manual
MDM-1 „Fox”, MDM-1P „Fox P”,
issue IV, December 1998
- German: Flughandbuch
MDM-1 „Fox”
Ausc. III, Oktober 1996, LBA-anerkannt

2. Maintenance Manual:

- Polish: Opis Techniczny, Instrukcja Obsługi Technicznej,
Prace Okresowe, Szybowca MDM-1 „Fox”,
wydanie III, Grudzień 1996
- English: Technical Service Manual, Periodic Works,
MDM-1 „Fox”
issue III, December 1996
- German: Wartungshandbuch
MDM-1 „Fox”
Ausc. III, Dezember 1996

A.V. Notes

1. Serial Numbers:
P-11, P-13, P-14, P-15, P-16,
201 and following
2. All glider outside surfaces must be white painted.
No registration number or any colour marks on the wings and stabilizer upper surfaces are allowed.

Section B: MDM-1P "FOX-P"

B.I. General

1. Data Sheet No.: EASA.A.039
2. a) Type: MDM-1 "Fox"
b) Variant: MDM-1P "Fox-P"
3. Airworthiness Category: Sailplane, Aerobatic or Utility
4. Type Certificate Holder: ZAKŁADY LOTNICZE
Margański & Mysłowski
Sp. z o.o.
ul. Strażacka 60
43-300 Bielsko-Biała
POLAND
5. Manufacturer: for S/N P-13, P-14, P-15, P-16, 201÷235 :
Zakład Remontów i Produkcji Sprzętu Lotniczego
Edward Margański
ul. Cieszyńska 321
43-300 Bielsko-Biała
POLAND

from S/N 236 :
ZAKŁADY LOTNICZE
Margański & Mysłowski
Sp. z o.o.
ul. Strażacka 60
43-300 Bielsko-Biała
POLAND
6. Polish CAA Certification Date: 12 January 1999
7. This EASA Type Certificate Data Sheet replaces Polish TCDS issue 4 (January 1999) to Type Certificate No. BG-197.

B.II. Certification Basis

1. Certification Basis:
2. Airworthiness Requirements: JAR-22 Change 4, issued on May 7th 1987
3. Requirements elected to comply: None
4. Special Conditions: None
5. Exemptions:
 1. Stall speed in aerobatic version and with two person crew exceeds 80 km/h (JAR 22.49)
 2. Airbrakes closing force exceeds 20 daN (JAR 22.143)
6. Equivalent Safety Findings: None

B.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:

List of drawings:		
MDM-1 Fox	issue	January 19 th 1998
MDM-1P Fox-P	issue	March 1998

2. Description:

Two-seat (tandem configuration) aerobatic and trainer glider.
 Cantilever mid-wing monoplane with conventional tail unit (fixed stabilizer with elevator, fin and rudder).
 All composite glass-epoxy structure.
 Bipartite tapered wing with Schempp-Hirth airbrakes protruding only from upper surface. Exchangeable wingtips - short for Aerobatic and long for Utility version.
 Fixed landing gear - main wheel with disk brake and tail wheel.

3. Equipment:

Minimum equipment:

 - airspeed indicator,
 - altimeter,
 - accelerometer,
 - 5-points pilot harness,
 - parachute or back cushion (8 cm thick) for each crew member.

Standard equipment (besides minimum equipment):

 - variometer with compensator,
 - pressure compensation vessel,
 - bank indicator,
 - compass,
 - seat cushion.

4. Dimensions:

	Aerobatic	Utility
Span	14,00 m	16,15 m
Wing area	12,34 m ²	13,09 m ²
Aspect Ratio	15,88	19,92
Length	7,38 m	7,38 m
Height	2,25 m	2,25 m

5. Launching Hook:

Nose towing hook	TOST E 85 or SZD-III A56 P
CG towing hook (optional)	TOST Europa G 88

6. Weak links:

Ultimate Strength:	677 daN (± 10%)
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7. Air Speeds:

Manoeuvring Speed	V_A	214 km/h
Never Exceed Speed	V_{NE}	282 km/h
Maximum permitted speeds		
- in rough air	V_{RA}	225 km/h
- in aero-tow	V_T	150 km/h
- in winch launching	V_W	150 km/h
		<i>winch launching permissible only with short wingtips</i>

8. Operational Capability:

VFR Day

9. Masses:

	Aerobatic	Utility
Max. Mass	530 kg	535 kg
Max. Empty Mass (without balance mass)	350 kg	355 kg

10. Centre of Gravity Range: Empty glider with standard equipment:
 Forward Limit 620 mm aft of datum point
 Rearward Limit 645 mm aft of datum point
 Centre of Gravity operational limits:
 Forward Limit 213 mm aft of datum point (22,0% MAC)
 Rearward Limit 379 mm aft of datum point (39,0% MAC)
 MAC is 971 mm for wings with short wingtips
 MAC is 938 mm for wings with long wingtips
 0% MAC is 2,1 mm aft of datum.
 Datum: Leading edge and wing-fuselage division
 plane intersection.
 Levelling means: Leading and trailing points of root chord
 (1308 mm) at the same level.
11. Seating Capacity: 2
12. Lifetime limitations: Refer to Maintenance Manual
13. Other limitations: Solo flight is permissible only on front seat.
 Cross-country flight (gliding or towed) with short wingtips only with
 one person crew.
 No baggage permitted.
 The following kinds of operation are forbidden:
 - auto-towing,
 - winch launching with long wingtips,
 - flights in icing conditions,
 - night flying,
 - cloud flying without turn-and-bank indicator,
 - aerobatic in rough air
 - full aerobatic with long wingtips.
 Manoeuvring load factor limits:
 Aerobatic version with short wingtips:
 - two person crew +7,0/-5,0
 - one person (no more than 100 kg incl. parachute) +9,0/-6,0
 Utility version with long wingtips +5,3/-2,65
14. Deflection of control surfaces:
- | | | | |
|-----------|---------|-----|-------------|
| Aileron: | - up | 22° | ± 1° |
| | - down | 17° | ± 1° |
| Elevator: | - up | 25° | ± 1° |
| | - down | 25° | ± 1° |
| Rudder: | - left | 30° | + 1° / - 2° |
| | - right | 30° | + 1° / - 2° |

B.IV. Operating and Service Instructions

1. Flight Manual:

- Polish: Instrukcja Użytkowania w Locie
Szybowców MDM-1 „Fox” oraz MDM-1P „Fox P”,
wydanie IV, Grudzień 1998
- English: Flight Manual
MDM-1 „Fox”, MDM-1P „Fox P”,
issue IV, December 1998

2. Maintenance Manual:

- Polish: Opis Techniczny, Instrukcja Obsługi Technicznej,
Prace Okresowe, Szybowca MDM-1P „Fox P”,
wydanie I, Grudzień 1998
- English: Technical Service Manual, Periodic Works,
MDM-1P „Fox P”
issue I, December 1998

B.V. Notes

1. Serial Numbers:

P-11, P-13, P-14, P-15, P-16,
201 and following

Previously built MDM-1 "Fox" gliders can be modified into MDM-1P "Fox-P" variant.

2. All glider outside surfaces exposed to sunlight must be white painted apart from registration number and anti-collision marks.