Manual amendments

No.	page	Description	Date	Signature
1	1, 2, 21, diagram 4	Additional suspension of the waterbags ÄM 300/12/E/95	Nov. 95	
2	1, 10	Landing gear control handle TN359/22	June 2004	
3	1, 2, 3, 8, 17a, 25, 26, 26a	Manual revision, increase of service time TN359/23	February 2005	

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0.	**Airworthiness limitations**	3	Febr. 05
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1.1	Wing and Tailgroup setting data	4	March 91
1.2	Elevator deflections and adjustment	5	Jan. 84
1.3	Rudder "	7	June 83
1.4	Aileron "	8	Febr. 05
1.5	Spoilers and wheel brake	9	Jan. 84
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Diagrams

1.	Elevator control circuit, adjustment	Nov. 86
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5.	Empty weight centre of gravity range	Febr. 88
6.	Placards	May 92
	Installation sketch EFK	Oct. 85
	Installation sketch 3 ED	19.08.87
	Installation sketch EFWK	Oct. 87

0 Airworthiness limitations

0.1 Repairs:

Repair damaged wings, fuselage and tail surfaces prior to next flight. Repairs outside the scope of DG-300ELAN ACRO repair manual and major repairs must be accomplished at a certified repair station rated for composite aircraft structure work in accordance with DG repair methods.

0.2 Life time of the airframe

The maximum allowable operating time for composite sailplanes is 12000 flight hours. Therefore inspections according to section 2.4 of this manual have to be executed at 3000 h, 6000 h, 9000 h and every 1000 hours following thereafter.

0.3 Life time of components

a) The fabric straps of the safety harness have to be exchanged after 12 years.

b) other components:
All other components such as tow hook, wheels, gas struts, control system parts, bolts, pins etc. have no life time limitation, but should be replaced when worn, damaged or disqualified by excessive corrosion.

0.4 Service time, maintenance documents

Follow the instructions of the respective manufacturer.

a) tow release: Operating and maintenance instructions for tow release Series: Europa G 88 Safety Tow Release date of issue February 1989

and if installed, for the tow releases Series: E 85 Nose Tow Release, date of issue March 1989.

b) safety harness: instructions of the manufacturer

c) minimum instrumentation: instructions of the manufacturer.

1.4 **Aileron and wing flap control**

1.4.1 **Control circuit** see diagram 3

1.4.2 **Aileron deflections and tolerances**

up	- 62 ± 3	(2.44 ± 0.12 in.)
down	+ 31 ± 3	(1.22 ± 0.12 in.)

measured at 120 mm (4.72 in.) from hinge axis (at inboard end)

1.4.3 **Aileron stops**

The aileron stops are located behind the removable left-hand side panel. The stops can be adjusted with two 4 mm (5/32 in.) diameter rods or drills.

1.4.4 **Free play**

The max. free play measured at the trailing edge of the ailerons measured at 120 mm (4.72 in.) from hinge axis should not exceed 2 mm (0.08 in.) The control stick and should be in neutral position. For the measurement fix the aileron of the opposite wing.
With larger free play the hinge axis (Part No. 2F7/3) should be replaced.

With both ailerons fixed, a maximum free play of 3 mm (0.12 in.) at the top of the control stick is allowed.

2.4 Inspection procedure for increase of service time

1. **General**

The results of fatigue tests of wingspan sections have demonstrated that the service time of composite gliders and motorgliders may be limited to 12000 hours, if for each individual glider (in addition to the obligatory annual inspections) the airworthiness is demonstrated according to a special multi-step inspection program particularly with regard to the service life.

2. **Dates**

When the glider has reached a service time of 3000 hours, an inspection must be done in accordance with the inspection program mentioned under point 3. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended by another 3000 hours to a total of 6000 hours (first step).

The above inspection program must be repeated when the glider has reached a service time of 6000 hours. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended to 9000 hours (second step).

When the glider has reached a service time of 9000 h the above inspection program must be repeated. If the results of the inspection are still positive, or if any defects found have been duly repaired, the service time may be extended to a total of 10000 hours (third step).

Proceed analogous when reaching 11000 hours (4. step).

Ask the manufacturer for the necessary inspection document.

6. Instrumentation and accessories list

6.1 Air speed indicator (0 - 300 km/h, 165 kts)

Manufacturer	Type	Certification No.
Winter	6 FMS 4(diam. 80mm)	TS 10.210/15
	0-300 km/h Ident.No. 6421177	
	0-160 kts Ident.No. 6423177	
Winter	7 FMS 4(diam. 58mm)	TS 10.210/19
	0-300 km/h Ident.No. 7421177	
	0-160 kts Ident.No. 7423177	

The airspeed indictor must have colour coded speed ranges marked as indicated in the flight manual section 2.3.

6.2 Altimeter

Manufacturer	Type	Certification No.
Winter	4 FGH 10 (diam. 80mm)	TS 10.220/46
	1.000-10.000m Ident.No.4110	
	3.000-30.000ft Ident.No.4330	
Winter	4 FGH 20 (diam.58mm)	TS 10.220/47
	1.000-10.000m Ident.No.4220	
Winter	4 FGH 40 (diam.58mm)	TS 10.220/48
	1.000-20.000ft Ident.No.4550	

Or any other TSO C 10b specified and approved altimeter with fine range pointer 1 turn max. 1000 m, 3000 ft.

6.3 Harness (seat)

Manufacturer	Type	Certification No.
Gadringer	BAGU 5202	40.070/32
	SCHUGU 2700	40.071/05
Gadringer	BAGU 5202 G	40.070/32
	SCHUGU 2700 G	40.071/05
	rubber coated adjuster bars	
Autoflugr	BAGU FAG 12 D-O	40.070/47
	SCHUGU FAG 12 H-O	40.071/25
Schroth	4-01-0.104	40.073/11

6.4 Compass

Manufacturer	Type	Certification No.
PZL	B - 13	FD 19/77
Ludolph	FK 16	10.410/3
Airpath	C 2300	
Hamilton	H I 400	TSO C 7c Type1
Bohli	46 MFK 1	(only as additional equipment.)

The compass should be compensated in the A/C. A deviation table must be installed if deviation is more than 5°.

6.5 VHF transceiver

Manufacturer	Type	Certification No.
Dittel	FSG-40 S	10.911/45
	FSG-50	10.911/71
	FSG-60 M	10.911/72
	FSG-70,71 M	10.911/81
	FSG-90	10.911/98JTSO
	FSG 2T	LBA.0.10.911/103JTSO
Becker	AR 3201-(1)	10.911/76
	AR 2008/25 (A)	10.911/48
	AR 4201	JTSO-2C37 D, ED-23A
Avionik Dittel	ATR 720 A	10.911/74
	ATR 720 C	10.911/83
	ATR 600	O.10.911/106JTSO
	ATR 500	LBA.0.10.911/113JTSO

or other instruments certified for aircraft use according to TSO or JTSO or ETSO standards may be installed.

6.6 Variometer

Manufacturer	Type	Certification No.
Winter	5 StVM5 (Durchm.58)	TS 10.230/14
	± 5 m/s Ident.No. 5451	
	±1000 ft/min Ident.No. 5452	
	± 10 kts Ident.No. 5453	
Winter	5 STV 5 (Durchm.80)	TS 10.230/13
	± 5 m/s Ident.No. 5251	
	±1000 ft/min Ident.No. 5252	
	± 10 kts Ident.No. 5253	

6.7 Turn and bank indicator

Manufacturer	Type	Certification No.
Apparatebau Gauting	WZ-402/31 12 V	10.241/8

6.8 Outside air temperature gauge

Manufacturer	Type	Certification No.
Störk	TF 00-059 K (-20 - + 40 °C)	/

6.9 Accelerometer

(for Category A Aerobatics)

Accelerometer capable of retaining max. and min. g-values with markings red radial lines at +7g and -5g.

Manufacturer	Type	**Certification No.**
AOA	BM 470-RL/L	MIL-A-5885 A
Bendix	2" 5V LITE	MS 28025-1
Bendix	3419-5A-A1	MS 28025-1
Burton Manufacturing Co.	B-6	MS 280025-1
INSCO	6610	MS 33638
Kelvin&HughesLtd.	KAE 0504K	MS 23009-1
Milhard Engineering Co.	ABU-4/A	MS 23009-1
QED/Inc.	ABU-4/A	MIL-A-25949(ASG)
Smiths	KAE 0504/K	MS 23009-1
Falcon Gauge	GMS 10-2	MIL-A-5885 C

6.10 Instruments which are not part of the minimum equipment:

Transponders: Transponders certified for aircraft use according to TSO or JTSO or ETSO standards may be installed.

Other instruments and equipment (eg. variometers, gliding computers or flight data recorders):
Instruments and other equipment may be installed if they do not in themselves, or by their effect upon the sailplane, constitute a hazard to safe operation.

Caution: If additional instruments or equipment are to be installed after production of the glider, it must be assured that they will be installed in the places provided by the design. If installed in other places it must be assured that they are secured safely.
Electrical instruments and equipment must be connected via a appropriately rated fuses, the power consumption of each single part should not exceed 3A.

After installation raise a new weight and balance report.